

Generalizations of the Tests by Kruskal-Wallis, Friedman and van der Waerden for Split-plot Designs

Appendix C 1 Tables and Graphs of the Type I Error Rates for fixed n_i (5,10,...,50)

All tables and graphs refer to $\alpha=0.05$. Reported are the proportions of rejections of the corresponding null hypothesis.

Note: Type I error rates of the ATS method marked with “(uncorr.)“ are based on uncorrected effects ab_{ij} of the interaction AB, whereas all other rates are corrected with regard to unequal cell frequencies in order to avoid impacts on the main effects.

Table of Contents

1. 1	Main effect A - null model	1
1. 1. 1	equal correlations on B ($r=0.3$)	1
1. 1. 1. 1	normal distribution - equal variances	1
1. 1. 1. 2	normal distribution - unequal variances (on A)	3
1. 1. 1. 3	normal distribution - unequal variances (on B)	5
1. 1. 1. 4	normal distribution - unequal variances (on A and B)	7
1. 1. 1. 5	normal distribution - unequal variances (on A) - pairing	9
1. 1. 1. 6	exponential distribution	11
1. 1. 1. 7	exponential distribution - discrete values	13
1. 1. 1. 8	uniform distribution	15
1. 1. 1. 9	uniform distribution - discrete values	17
1. 1. 1. 10	lognormal distribution - equal variances	19
1. 1. 1. 11	normal distribution - equal variances - contaminated I	21
1. 1. 1. 12	normal distribution - equal variances - contaminated II	23
1. 1. 1. 13	normal distribution - equal variances - contaminated III	25
1. 1. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	27
1. 1. 2. 1	normal distribution - equal variances	27
1. 1. 2. 2	normal distribution - unequal variances (on A)	29
1. 1. 2. 3	normal distribution - unequal variances (on B)	31
1. 1. 2. 4	normal distribution - unequal variances (on A and B)	33
1. 1. 2. 5	normal distribution - unequal variances (on A) - pairing	35
1. 1. 2. 6	exponential distribution	37
1. 1. 2. 7	exponential distribution - discrete values	39
1. 1. 2. 8	uniform distribution	41
1. 1. 2. 9	uniform distribution - discrete values	43
1. 1. 2. 10	lognormal distribution - equal variances	45
1. 1. 2. 11	normal distribution - equal variances - contaminated I	47
1. 1. 2. 12	normal distribution - equal variances - contaminated II	49
1. 1. 2. 13	normal distribution - equal variances - contaminated III	51

1. 2	Main effect A - B significant (effects $b_j=0.5*s$)	53
1. 2. 1	equal correlations on B ($r=0.3$)	53
1. 2. 1. 1	normal distribution - equal variances	53
1. 2. 1. 2	normal distribution - unequal variances (on A)	55
1. 2. 1. 3	normal distribution - unequal variances (on B)	57
1. 2. 1. 4	normal distribution - unequal variances (on A and B)	59
1. 2. 1. 5	normal distribution - unequal variances (on A) - pairing	61
1. 2. 1. 6	exponential distribution	63
1. 2. 1. 7	exponential distribution - discrete values	65
1. 2. 1. 8	uniform distribution	67
1. 2. 1. 9	uniform distribution - discrete values	69
1. 2. 1. 10	lognormal distribution - equal variances	71
1. 2. 1. 11	normal distribution - equal variances - contaminated I	73
1. 2. 1. 12	normal distribution - equal variances - contaminated II	75
1. 2. 1. 13	normal distribution - equal variances - contaminated III	77
1. 2. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	79
1. 2. 2. 1	normal distribution - equal variances	79
1. 2. 2. 2	normal distribution - unequal variances (on A)	81
1. 2. 2. 3	normal distribution - unequal variances (on B)	83
1. 2. 2. 4	normal distribution - unequal variances (on A and B)	85
1. 2. 2. 5	normal distribution - unequal variances (on A) - pairing	87
1. 2. 2. 6	exponential distribution	89
1. 2. 2. 7	exponential distribution - discrete values	91
1. 2. 2. 8	uniform distribution	93
1. 2. 2. 9	uniform distribution - discrete values	95
1. 2. 2. 10	lognormal distribution - equal variances	97
1. 2. 2. 11	normal distribution - equal variances - contaminated I	99
1. 2. 2. 12	normal distribution - equal variances - contaminated II	101
1. 2. 2. 13	normal distribution - equal variances - contaminated III	103
1. 3	Main effect A - AB significant (effects $ab_{ij}=0.5*s$)	105
1. 3. 1	equal correlations on B ($r=0.3$)	105
1. 3. 1. 1	normal distribution - equal variances	105
1. 3. 1. 2	normal distribution - unequal variances (on A)	107
1. 3. 1. 3	normal distribution - unequal variances (on B)	109
1. 3. 1. 4	normal distribution - unequal variances (on A and B)	111
1. 3. 1. 5	normal distribution - unequal variances (on A) - pairing	113
1. 3. 1. 6	exponential distribution	115
1. 3. 1. 7	exponential distribution - discrete values	117
1. 3. 1. 8	uniform distribution	119
1. 3. 1. 9	uniform distribution - discrete values	121
1. 3. 1. 10	lognormal distribution - equal variances	123
1. 3. 1. 11	normal distribution - equal variances - contaminated I	125
1. 3. 1. 12	normal distribution - equal variances - contaminated II	127
1. 3. 1. 13	normal distribution - equal variances - contaminated III	129

1. 3. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	131
1. 3. 2. 1	normal distribution - equal variances	131
1. 3. 2. 2	normal distribution - unequal variances (on A)	133
1. 3. 2. 3	normal distribution - unequal variances (on B)	135
1. 3. 2. 4	normal distribution - unequal variances (on A and B)	137
1. 3. 2. 5	normal distribution - unequal variances (on A) - pairing	139
1. 3. 2. 6	exponential distribution	141
1. 3. 2. 7	exponential distribution - discrete values	143
1. 3. 2. 8	uniform distribution	145
1. 3. 2. 9	uniform distribution - discrete values	147
1. 3. 2. 10	lognormal distribution - equal variances	149
1. 3. 2. 11	normal distribution - equal variances - contaminated I	151
1. 3. 2. 12	normal distribution - equal variances - contaminated II	153
1. 3. 2. 13	normal distribution - equal variances - contaminated III	155
1. 4	Main effect B - null model	157
1. 4. 1	equal correlations on B ($r=0.3$)	157
1. 4. 1. 1	normal distribution - equal variances	157
1. 4. 1. 2	normal distribution - unequal variances (on A)	159
1. 4. 1. 3	normal distribution - unequal variances (on B)	161
1. 4. 1. 4	normal distribution - unequal variances (on A and B)	163
1. 4. 1. 5	normal distribution - unequal variances (on A) - pairing	165
1. 4. 1. 6	exponential distribution	167
1. 4. 1. 7	exponential distribution - discrete values	169
1. 4. 1. 8	uniform distribution	171
1. 4. 1. 9	uniform distribution - discrete values	173
1. 4. 1. 10	lognormal distribution - equal variances	175
1. 4. 1. 11	normal distribution - equal variances - contaminated I	177
1. 4. 1. 12	normal distribution - equal variances - contaminated II	179
1. 4. 1. 13	normal distribution - equal variances - contaminated III	181
1. 4. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	183
1. 4. 2. 1	normal distribution - equal variances	183
1. 4. 2. 2	normal distribution - unequal variances (on A)	185
1. 4. 2. 3	normal distribution - unequal variances (on B)	187
1. 4. 2. 4	normal distribution - unequal variances (on A and B)	189
1. 4. 2. 5	normal distribution - unequal variances (on A) - pairing	191
1. 4. 2. 6	exponential distribution	193
1. 4. 2. 7	exponential distribution - discrete values	195
1. 4. 2. 8	uniform distribution	197
1. 4. 2. 9	uniform distribution - discrete values	199
1. 4. 2. 10	lognormal distribution - equal variances	201
1. 4. 2. 11	normal distribution - equal variances - contaminated I	203
1. 4. 2. 12	normal distribution - equal variances - contaminated II	205
1. 4. 2. 13	normal distribution - equal variances - contaminated III	207

1. 5	Main effect B - A significant (effects $a_i=0.5*s$)	209
1. 5. 1	equal correlations on B ($r=0.3$)	209
1. 5. 1. 1	normal distribution - equal variances	209
1. 5. 1. 2	normal distribution - unequal variances (on A)	211
1. 5. 1. 3	normal distribution - unequal variances (on B)	213
1. 5. 1. 4	normal distribution - unequal variances (on A and B)	215
1. 5. 1. 5	normal distribution - unequal variances (on A) - pairing	217
1. 5. 1. 6	exponential distribution	219
1. 5. 1. 7	exponential distribution - discrete values	221
1. 5. 1. 8	uniform distribution	223
1. 5. 1. 9	uniform distribution - discrete values	225
1. 5. 1. 10	lognormal distribution - equal variances	227
1. 5. 1. 11	normal distribution - equal variances - contaminated I	229
1. 5. 1. 12	normal distribution - equal variances - contaminated II	231
1. 5. 1. 13	normal distribution - equal variances - contaminated III	233
1. 5. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	235
1. 5. 2. 1	normal distribution - equal variances	235
1. 5. 2. 2	normal distribution - unequal variances (on A)	237
1. 5. 2. 3	normal distribution - unequal variances (on B)	239
1. 5. 2. 4	normal distribution - unequal variances (on A and B)	241
1. 5. 2. 5	normal distribution - unequal variances (on A) - pairing	243
1. 5. 2. 6	exponential distribution	245
1. 5. 2. 7	exponential distribution - discrete values	247
1. 5. 2. 8	uniform distribution	249
1. 5. 2. 9	uniform distribution - discrete values	251
1. 5. 2. 10	lognormal distribution - equal variances	253
1. 5. 2. 11	normal distribution - equal variances - contaminated I	255
1. 5. 2. 12	normal distribution - equal variances - contaminated II	257
1. 5. 2. 13	normal distribution - equal variances - contaminated III	259
1. 6	Main effect B - AB significant (effects $ab_{ij}=0.5*s$)	261
1. 6. 1	equal correlations on B ($r=0.3$)	261
1. 6. 1. 1	normal distribution - equal variances	261
1. 6. 1. 2	normal distribution - unequal variances (on A)	263
1. 6. 1. 3	normal distribution - unequal variances (on B)	265
1. 6. 1. 4	normal distribution - unequal variances (on A and B)	267
1. 6. 1. 5	normal distribution - unequal variances (on A) - pairing	269
1. 6. 1. 6	exponential distribution	271
1. 6. 1. 7	exponential distribution - discrete values	273
1. 6. 1. 8	uniform distribution	275
1. 6. 1. 9	uniform distribution - discrete values	277
1. 6. 1. 10	lognormal distribution - equal variances	279
1. 6. 1. 11	normal distribution - equal variances - contaminated I	281
1. 6. 1. 12	normal distribution - equal variances - contaminated II	283
1. 6. 1. 13	normal distribution - equal variances - contaminated III	285

1. 6. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	287
1. 6. 2. 1	normal distribution - equal variances	287
1. 6. 2. 2	normal distribution - unequal variances (on A)	289
1. 6. 2. 3	normal distribution - unequal variances (on B)	291
1. 6. 2. 4	normal distribution - unequal variances (on A and B)	293
1. 6. 2. 5	normal distribution - unequal variances (on A) - pairing	295
1. 6. 2. 6	exponential distribution	297
1. 6. 2. 7	exponential distribution - discrete values	299
1. 6. 2. 8	uniform distribution	301
1. 6. 2. 9	uniform distribution - discrete values	303
1. 6. 2. 10	lognormal distribution - equal variances	305
1. 6. 2. 11	normal distribution - equal variances - contaminated I	307
1. 6. 2. 12	normal distribution - equal variances - contaminated II	309
1. 6. 2. 13	normal distribution - equal variances - contaminated III	311
1. 7	Interaction effect AB - null model	313
1. 7. 1	equal correlations on B ($r=0.3$)	313
1. 7. 1. 1	normal distribution - equal variances	313
1. 7. 1. 2	normal distribution - unequal variances (on A)	315
1. 7. 1. 3	normal distribution - unequal variances (on B)	317
1. 7. 1. 4	normal distribution - unequal variances (on A and B)	319
1. 7. 1. 5	normal distribution - unequal variances (on A) - pairing	321
1. 7. 1. 6	exponential distribution	323
1. 7. 1. 7	exponential distribution - discrete values	325
1. 7. 1. 8	uniform distribution	327
1. 7. 1. 9	uniform distribution - discrete values	329
1. 7. 1. 10	lognormal distribution - equal variances	331
1. 7. 1. 11	normal distribution - equal variances - contaminated I	333
1. 7. 1. 12	normal distribution - equal variances - contaminated II	335
1. 7. 1. 13	normal distribution - equal variances - contaminated III	337
1. 7. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	339
1. 7. 2. 1	normal distribution - equal variances	339
1. 7. 2. 2	normal distribution - unequal variances (on A)	341
1. 7. 2. 3	normal distribution - unequal variances (on B)	343
1. 7. 2. 4	normal distribution - unequal variances (on A and B)	345
1. 7. 2. 5	normal distribution - unequal variances (on A) - pairing	347
1. 7. 2. 6	exponential distribution	349
1. 7. 2. 7	exponential distribution - discrete values	351
1. 7. 2. 8	uniform distribution	353
1. 7. 2. 9	uniform distribution - discrete values	355
1. 7. 2. 10	lognormal distribution - equal variances	357
1. 7. 2. 11	normal distribution - equal variances - contaminated I	359
1. 7. 2. 12	normal distribution - equal variances - contaminated II	361
1. 7. 2. 13	normal distribution - equal variances - contaminated III	363

1. 8	Interaction effect AB - A significant (effects $a_i=0.5*s$)	365
1. 8. 1	equal correlations on B ($r=0.3$)	365
1. 8. 1. 1	normal distribution - equal variances	365
1. 8. 1. 2	normal distribution - unequal variances (on A)	367
1. 8. 1. 3	normal distribution - unequal variances (on B)	369
1. 8. 1. 4	normal distribution - unequal variances (on A and B)	371
1. 8. 1. 5	normal distribution - unequal variances (on A) - pairing	373
1. 8. 1. 6	exponential distribution	375
1. 8. 1. 7	exponential distribution - discrete values	377
1. 8. 1. 8	uniform distribution	379
1. 8. 1. 9	uniform distribution - discrete values	381
1. 8. 1. 10	lognormal distribution - equal variances	383
1. 8. 1. 11	normal distribution - equal variances - contaminated I	385
1. 8. 1. 12	normal distribution - equal variances - contaminated II	387
1. 8. 1. 13	normal distribution - equal variances - contaminated III	389
1. 8. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	391
1. 8. 2. 1	normal distribution - equal variances	391
1. 8. 2. 2	normal distribution - unequal variances (on A)	393
1. 8. 2. 3	normal distribution - unequal variances (on B)	395
1. 8. 2. 4	normal distribution - unequal variances (on A and B)	397
1. 8. 2. 5	normal distribution - unequal variances (on A) - pairing	399
1. 8. 2. 6	exponential distribution	401
1. 8. 2. 7	exponential distribution - discrete values	403
1. 8. 2. 8	uniform distribution	405
1. 8. 2. 9	uniform distribution - discrete values	407
1. 8. 2. 10	lognormal distribution - equal variances	409
1. 8. 2. 11	normal distribution - equal variances - contaminated I	411
1. 8. 2. 12	normal distribution - equal variances - contaminated II	413
1. 8. 2. 13	normal distribution - equal variances - contaminated III	415
1. 9	Interaction effect AB - B significant (effects $b_i=0.5*s$)	417
1. 9. 1	equal correlations on B ($r=0.3$)	417
1. 9. 1. 1	normal distribution - equal variances	417
1. 9. 1. 2	normal distribution - unequal variances (on A)	419
1. 9. 1. 3	normal distribution - unequal variances (on B)	421
1. 9. 1. 4	normal distribution - unequal variances (on A and B)	423
1. 9. 1. 5	normal distribution - unequal variances (on A) - pairing	425
1. 9. 1. 6	exponential distribution	427
1. 9. 1. 7	exponential distribution - discrete values	429
1. 9. 1. 8	uniform distribution	31
1. 9. 1. 9	uniform distribution - discrete values	433
1. 9. 1. 10	lognormal distribution - equal variances	435
1. 9. 1. 11	normal distribution - equal variances - contaminated I	437
1. 9. 1. 12	normal distribution - equal variances - contaminated II	439
1. 9. 1. 13	normal distribution - equal variances - contaminated III	441

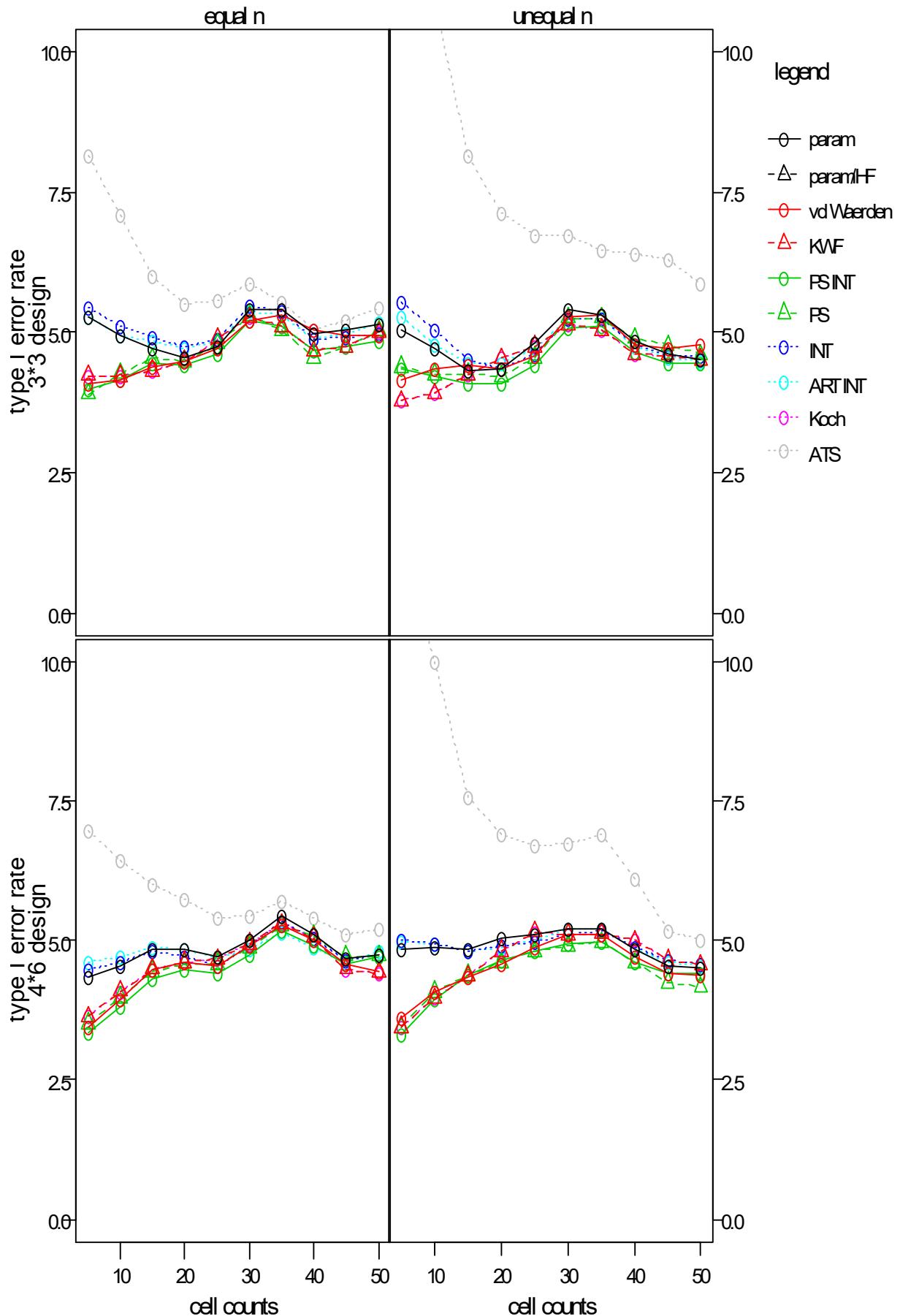
1. 9. 2	unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)	443
1. 9. 2. 1	normal distribution - equal variances	443
1. 9. 2. 2	normal distribution - unequal variances (on A)	445
1. 9. 2. 3	normal distribution - unequal variances (on B)	447
1. 9. 2. 4	normal distribution - unequal variances (on A and B)	449
1. 9. 2. 5	normal distribution - unequal variances (on A) - pairing	451
1. 9. 2. 6	exponential distribution	453
1. 9. 2. 7	exponential distribution - discrete values	455
1. 9. 2. 8	uniform distribution	457
1. 9. 2. 9	uniform distribution - discrete values	459
1. 9. 2. 10	lognormal distribution - equal variances	461
1. 9. 2. 11	normal distribution - equal variances - contaminated I	463
1. 9. 2. 12	normal distribution - equal variances - contaminated II	465
1. 9. 2. 13	normal distribution - equal variances - contaminated III	467

1. 1. Main effect A - null model

1. 1. 1. equal correlations on B ($r=0.3$)

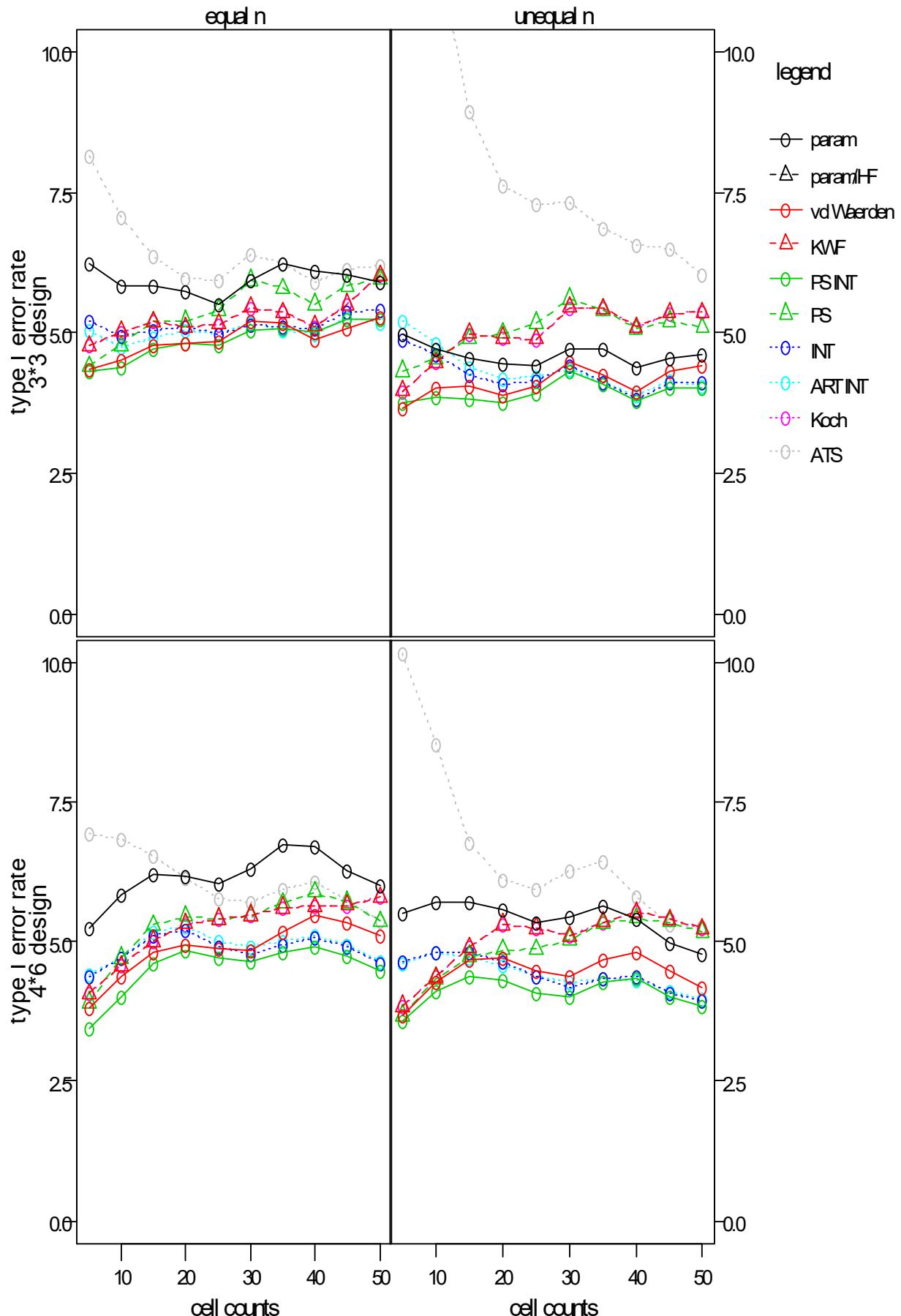
1. 1. 1. 1 normal distribution - equal variances

	equal cell counts							unequal cell counts						
method	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.27	4.95	4.72	4.55	5.41	4.97	5.13	5.03	4.71	4.31	4.34	5.40	4.84	4.52
parametric HF-adj														
van der Waerden	4.08	4.15	4.38	4.47	5.21	5.03	4.93	4.15	4.33	4.41	4.36	5.26	4.78	4.78
KWF	4.23	4.22	4.31	4.49	5.26	4.66	5.00	3.78	3.91	4.24	4.54	5.14	4.62	4.51
Puri & Sen INT	3.97	4.16	4.45	4.42	5.19	4.66	4.83	4.35	4.22	4.09	4.09	5.08	4.64	4.45
Puri & Sen	3.90	4.26	4.54	4.48	5.29	4.55	5.02	4.38	4.25	4.25	4.22	5.25	4.89	4.60
INT	5.45	5.12	4.91	4.74	5.46	4.89	4.97	5.54	5.05	4.50	4.34	5.24	4.78	4.57
ART INT	5.27	4.95	4.83	4.72	5.38	4.89	5.18	5.27	4.78	4.44	4.46	5.25	4.75	4.47
Koch	4.23	4.22	4.31	4.49	5.26	4.66	5.00	3.78	3.91	4.24	4.54	5.14	4.62	4.51
ATS	8.14	7.09	6.01	5.50	5.86	5.04	5.42	14.11	10.88	8.16	7.12	6.71	6.38	5.86
large design (4*6)														
parametric	4.35	4.55	4.84	4.85	5.01	5.11	4.75	4.83	4.86	4.85	5.04	5.19	4.84	4.52
parametric HF-adj														
van der Waerden	3.45	3.94	4.47	4.60	4.91	5.00	4.45	3.60	4.06	4.34	4.59	5.11	4.71	4.37
KWF	3.63	4.09	4.49	4.61	4.94	5.05	4.42	3.45	3.96	4.36	4.81	5.11	5.00	4.57
Puri & Sen INT	3.35	3.81	4.30	4.46	4.75	4.90	4.72	3.31	3.95	4.38	4.65	4.94	4.62	4.42
Puri & Sen	3.51	3.98	4.44	4.59	4.88	5.08	4.72	3.44	4.08	4.38	4.60	4.91	4.60	4.17
INT	4.47	4.61	4.80	4.72	4.89	5.04	4.75	5.00	4.94	4.80	4.92	5.09	4.86	4.57
ART INT	4.62	4.71	4.86	4.83	4.85	4.86	4.80	4.98	4.95	4.79	4.88	5.20	4.84	4.55
Koch	3.63	4.09	4.49	4.61	4.94	5.05	4.42	3.45	3.96	4.36	4.81	5.11	5.00	4.57
ATS	6.95	6.43	5.99	5.74	5.45	5.42	5.19	12.21	10.00	7.58	6.89	6.74	6.09	5.02



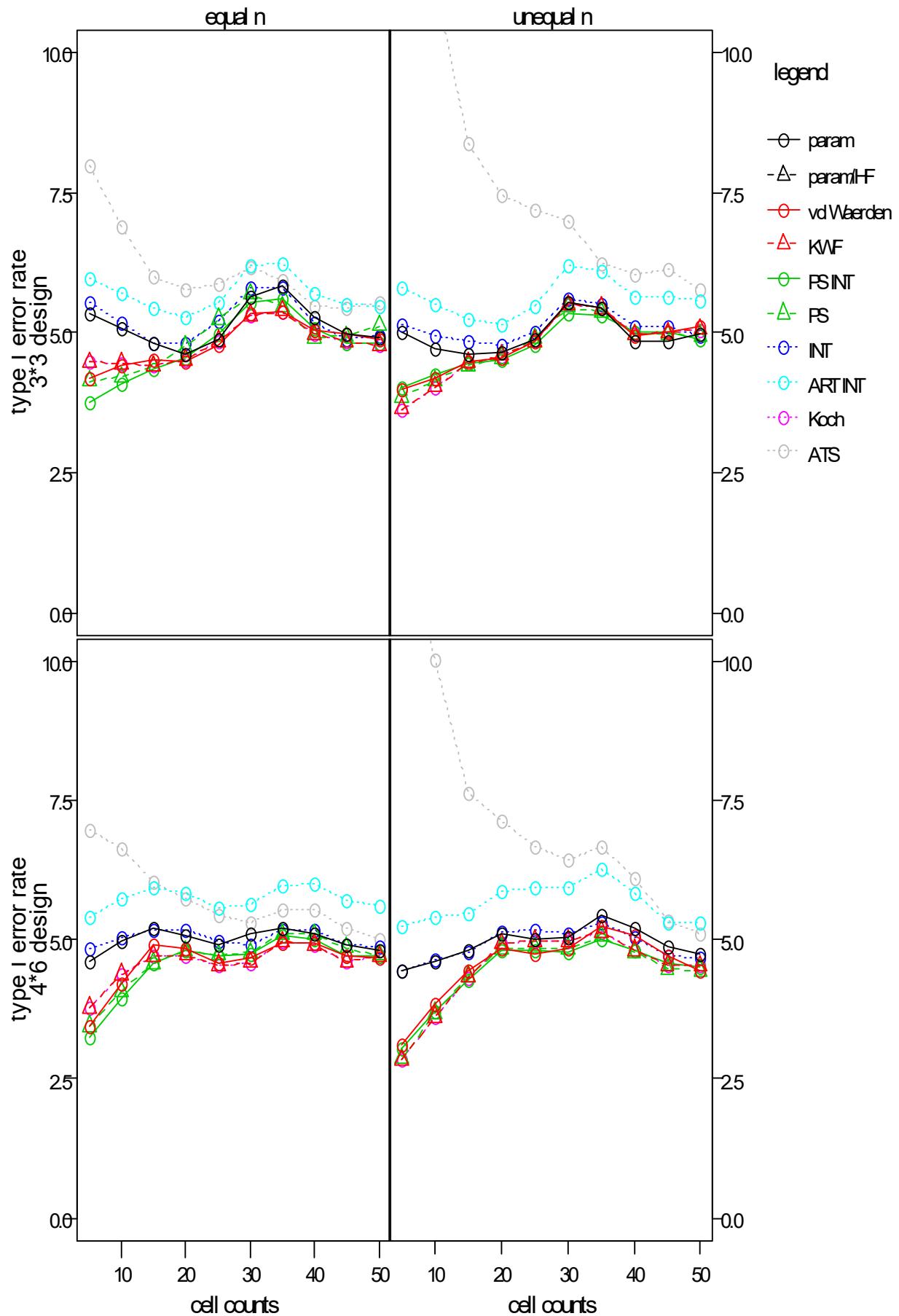
1. 1. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.22	5.84	5.83	5.72	5.92	6.08	5.90	4.99	4.71	4.53	4.46	4.71	4.38	4.60
parametric HF-adj														
van der Waerden	4.33	4.50	4.79	4.81	5.21	4.89	5.28	3.66	4.03	4.06	3.90	4.48	3.94	4.40
KWF	4.76	5.02	5.19	5.09	5.45	5.12	6.02	3.96	4.47	4.99	4.91	5.45	5.09	5.36
Puri & Sen INT	4.30	4.39	4.70	4.81	5.03	5.01	5.23	3.75	3.84	3.83	3.75	4.30	3.78	4.00
Puri & Sen	4.40	4.76	5.19	5.21	5.94	5.50	5.96	4.32	4.54	4.90	4.99	5.61	5.06	5.10
INT	5.20	4.94	5.04	5.10	5.15	5.07	5.40	4.87	4.60	4.26	4.08	4.40	3.83	4.10
ART INT	5.04	4.75	4.90	5.04	5.16	4.99	5.18	5.20	4.80	4.38	4.19	4.36	3.89	4.05
Koch	4.76	5.02	5.19	5.09	5.45	5.12	6.02	3.96	4.47	4.99	4.91	5.45	5.09	5.36
ATS	8.13	7.07	6.36	5.97	6.38	5.90	6.20	14.97	11.85	8.94	7.61	7.31	6.56	6.03
large design (4*6)														
parametric	5.24	5.83	6.20	6.17	6.29	6.70	6.00	5.51	5.69	5.71	5.57	5.44	5.41	4.77
parametric HF-adj														
van der Waerden	3.80	4.36	4.80	4.95	4.83	5.47	5.12	3.68	4.29	4.67	4.70	4.39	4.79	4.18
KWF	4.06	4.56	5.01	5.32	5.48	5.62	5.79	3.84	4.36	4.89	5.31	5.09	5.53	5.23
Puri & Sen INT	3.43	4.00	4.60	4.83	4.64	4.91	4.48	3.59	4.12	4.38	4.31	4.00	4.34	3.85
Puri & Sen	3.91	4.71	5.30	5.45	5.45	5.88	5.36	3.68	4.35	4.74	4.85	5.04	5.42	5.18
INT	4.38	4.70	5.12	5.22	4.78	5.06	4.61	4.63	4.82	4.79	4.65	4.16	4.38	3.95
ART INT	4.42	4.71	5.16	5.26	4.89	5.10	4.65	4.60	4.79	4.72	4.58	4.26	4.31	3.97
Koch	4.06	4.56	5.01	5.32	5.48	5.62	5.79	3.84	4.36	4.89	5.31	5.09	5.53	5.23
ATS	6.93	6.82	6.53	6.14	5.70	6.06	5.36	10.17	8.54	6.76	6.09	6.28	5.80	5.28



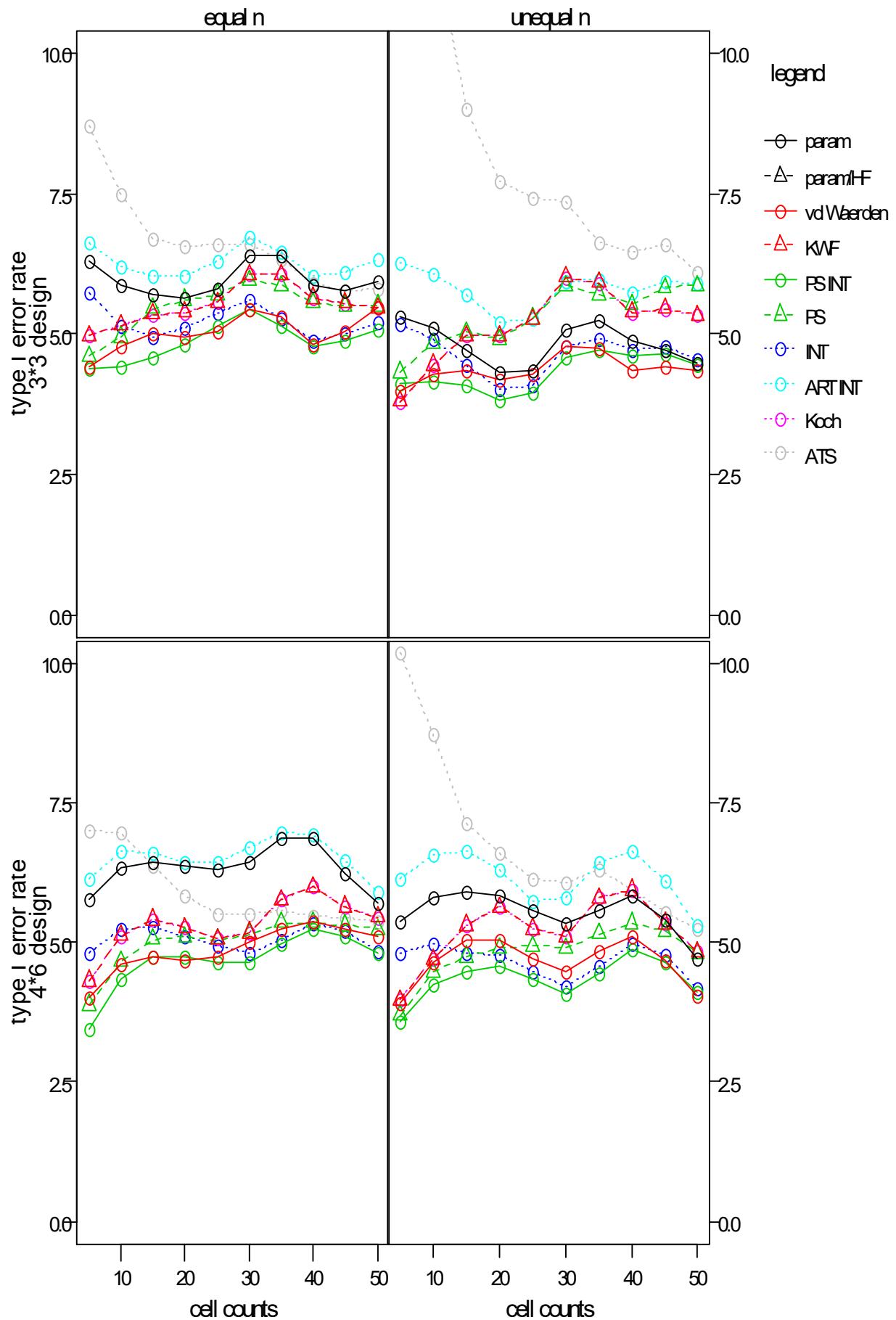
1. 1. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.06	4.80	4.62	5.64	5.28	4.92	5.02	4.71	4.61	4.64	5.53	4.84	4.97
parametric HF-adj														
van der Waerden	4.18	4.40	4.51	4.49	5.34	5.04	4.86	3.97	4.19	4.49	4.54	5.54	4.94	5.10
KWF	4.47	4.45	4.40	4.51	5.31	4.97	4.78	3.63	4.03	4.46	4.59	5.49	4.96	5.05
Puri & Sen INT	3.76	4.07	4.34	4.55	5.54	5.08	4.80	4.03	4.24	4.44	4.50	5.33	5.01	4.86
Puri & Sen	4.13	4.20	4.40	4.74	5.68	4.91	5.12	3.85	4.14	4.41	4.55	5.45	4.96	4.95
INT	5.54	5.17	4.81	4.80	5.80	5.16	4.93	5.13	4.95	4.83	4.78	5.59	5.10	4.93
ART INT	5.95	5.71	5.45	5.28	6.20	5.69	5.48	5.80	5.49	5.24	5.15	6.18	5.64	5.56
Koch	4.47	4.45	4.40	4.51	5.31	4.97	4.78	3.63	4.03	4.46	4.59	5.49	4.96	5.05
ATS	7.99	6.89	6.00	5.75	6.15	5.46	5.53	15.13	11.28	8.39	7.46	6.99	6.03	5.78
large design (4*6)														
parametric	4.61	4.96	5.20	5.06	5.09	5.12	4.80	4.45	4.62	4.79	5.11	5.04	5.22	4.73
parametric HF-adj														
van der Waerden	3.44	4.22	4.89	4.85	4.67	4.93	4.67	3.11	3.85	4.44	4.84	4.84	5.07	4.45
KWF	3.78	4.38	4.71	4.72	4.59	4.91	4.70	2.84	3.61	4.32	4.93	4.97	4.81	4.53
Puri & Sen INT	3.26	3.94	4.58	4.80	4.75	5.00	4.72	3.04	3.71	4.29	4.79	4.78	4.81	4.52
Puri & Sen	3.45	4.06	4.58	4.80	4.76	5.10	4.72	2.86	3.68	4.34	4.84	4.84	4.78	4.45
INT	4.85	5.04	5.16	5.16	4.91	5.16	4.88	4.45	4.65	4.76	5.14	5.11	5.03	4.68
ART INT	5.40	5.74	5.95	5.82	5.65	5.99	5.60	5.23	5.41	5.46	5.88	5.95	5.83	5.32
Koch	3.78	4.38	4.71	4.72	4.59	4.91	4.70	2.84	3.61	4.32	4.93	4.97	4.81	4.53
ATS	6.97	6.62	6.04	5.74	5.31	5.54	5.00	12.61	10.03	7.64	7.14	6.45	6.09	5.12



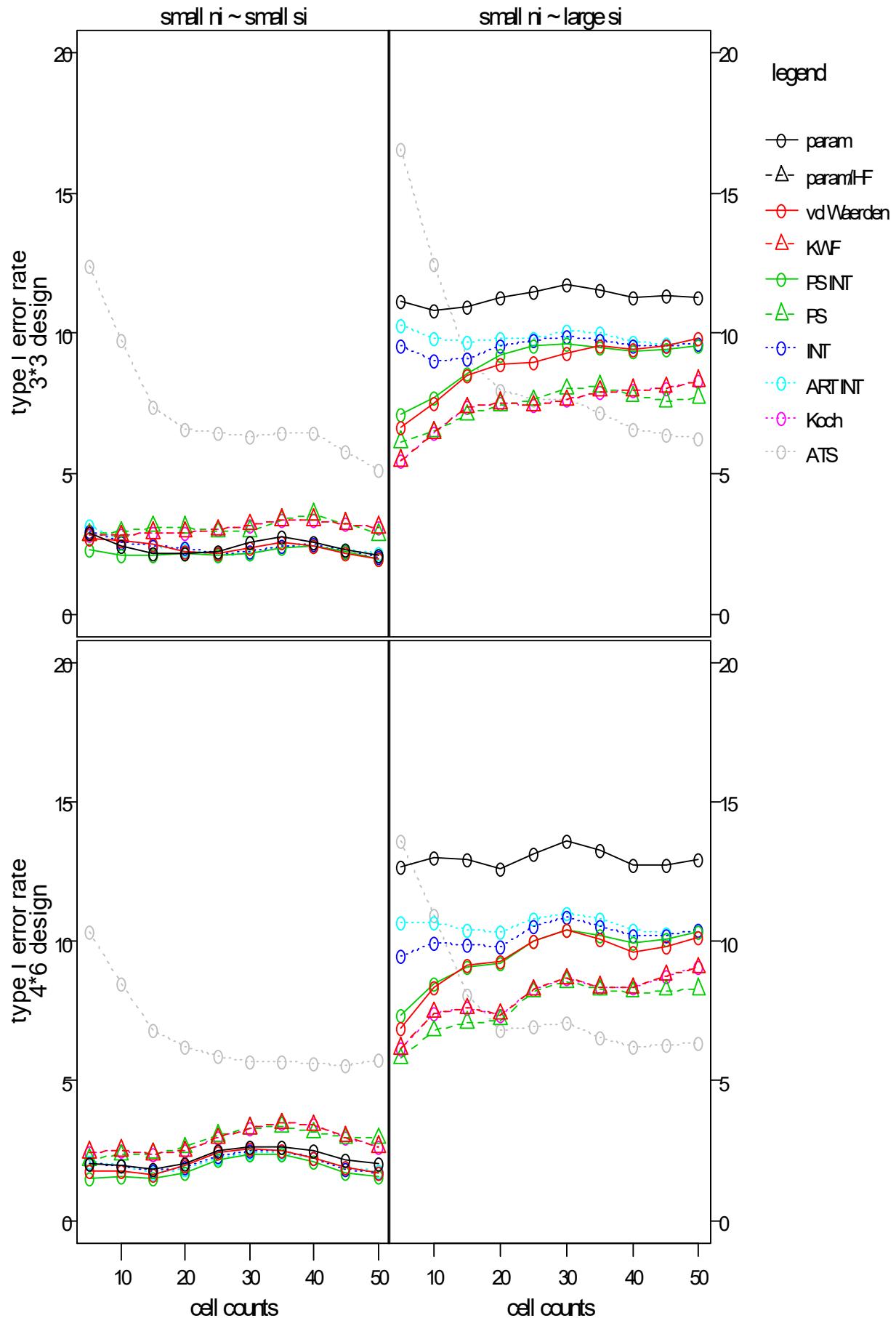
1. 1. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.29	5.85	5.69	5.62	6.40	5.86	5.92	5.30	5.09	4.70	4.31	5.06	4.86	4.48
parametric HF-adj														
van der Waerden	4.41	4.78	5.00	4.94	5.45	4.80	5.47	3.98	4.28	4.34	4.17	4.78	4.35	4.33
KWF	4.97	5.15	5.35	5.38	6.06	5.64	5.46	3.80	4.45	4.96	4.96	6.01	5.38	5.33
Puri & Sen INT	4.37	4.40	4.58	4.80	5.44	4.76	5.07	4.10	4.16	4.07	3.83	4.57	4.60	4.45
Puri & Sen	4.60	4.95	5.45	5.60	5.96	5.55	5.50	4.31	4.83	5.03	4.90	5.86	5.53	5.85
INT	5.72	5.15	4.93	5.09	5.60	4.89	5.20	5.17	4.90	4.44	4.00	4.76	4.71	4.55
ART INT	6.64	6.20	6.04	6.04	6.71	6.02	6.33	6.27	6.05	5.70	5.21	5.92	5.72	5.90
Koch	4.97	5.15	5.35	5.38	6.06	5.64	5.46	3.80	4.45	4.96	4.96	6.01	5.38	5.33
ATS	8.69	7.50	6.70	6.57	6.59	5.90	5.80	15.83	12.09	8.99	7.71	7.34	6.46	6.09
large design (4*6)														
parametric	5.76	6.34	6.45	6.36	6.43	6.86	5.71	5.38	5.81	5.90	5.84	5.34	5.82	4.71
parametric HF-adj														
van der Waerden	4.01	4.62	4.75	4.66	5.00	5.36	5.12	3.91	4.64	5.04	5.04	4.49	5.10	4.05
KWF	4.31	5.12	5.41	5.26	5.17	5.99	5.45	3.96	4.69	5.31	5.62	5.11	5.94	4.83
Puri & Sen INT	3.46	4.34	4.74	4.75	4.65	5.25	4.80	3.58	4.23	4.46	4.56	4.09	4.86	4.11
Puri & Sen	3.88	4.65	5.05	5.09	5.15	5.35	5.23	3.69	4.47	4.74	4.89	4.90	5.34	4.81
INT	4.79	5.24	5.26	5.12	4.79	5.34	4.85	4.80	4.97	4.81	4.76	4.21	4.97	4.18
ART INT	6.14	6.64	6.61	6.43	6.69	6.92	5.90	6.13	6.56	6.62	6.31	5.80	6.64	5.29
Koch	4.31	5.12	5.41	5.26	5.17	5.99	5.45	3.96	4.69	5.31	5.62	5.11	5.94	4.83
ATS	7.00	6.95	6.38	5.83	5.50	5.46	5.38	10.19	8.72	7.12	6.61	6.08	5.95	5.23



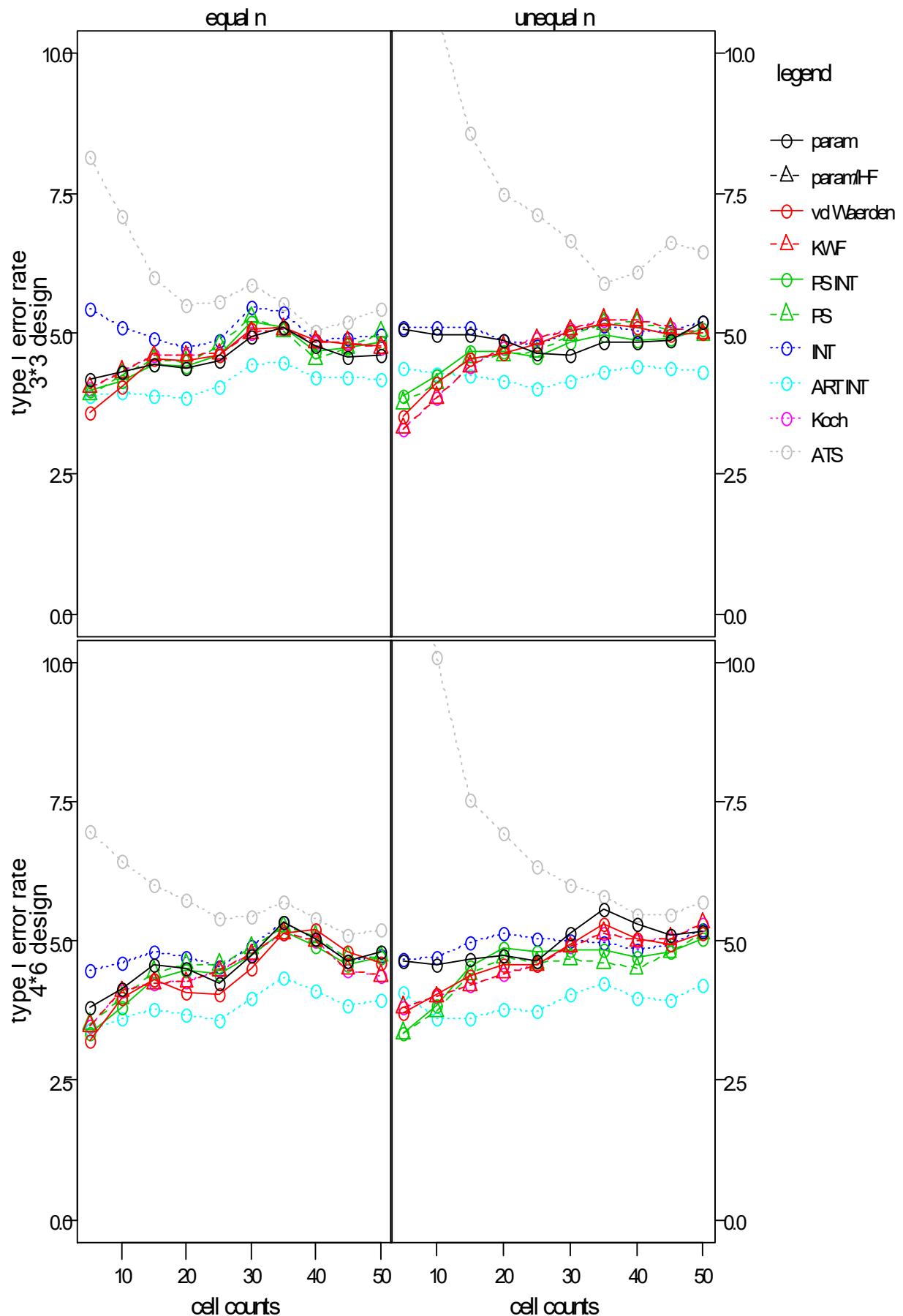
1. 1. 1. 5 normal distribution - unequal variances (on A) - pairing

	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
method	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.89	2.40	2.16	2.15	2.54	2.55	2.06	11.12	10.80	10.94	11.26	11.70	11.29	11.27
parametric HF-adj														
van der Waerden	2.70	2.64	2.50	2.24	2.38	2.40	1.97	6.64	7.53	8.50	8.90	9.31	9.43	9.79
KWF	2.80	2.80	2.88	2.91	3.17	3.35	3.08	5.46	6.46	7.35	7.51	7.62	7.96	8.29
Puri & Sen INT	2.29	2.11	2.10	2.14	2.15	2.44	1.95	7.13	7.72	8.54	9.21	9.61	9.32	9.55
Puri & Sen	2.83	2.93	3.11	3.09	2.94	3.55	2.83	6.13	6.49	7.10	7.44	8.02	7.74	7.72
INT	2.92	2.55	2.42	2.34	2.20	2.49	2.02	9.54	9.04	9.09	9.57	9.88	9.53	9.62
ART INT	3.14	2.64	2.44	2.30	2.17	2.42	2.12	10.27	9.79	9.66	9.79	10.05	9.71	9.62
Koch	2.80	2.80	2.88	2.91	3.17	3.35	3.08	5.46	6.46	7.35	7.51	7.62	7.96	8.29
ATS	12.42	9.74	7.34	6.59	6.34	6.44	5.11	16.53	12.45	9.12	7.96	7.65	6.57	6.25
large design (4*6)														
parametric	2.03	1.96	1.81	2.04	2.64	2.47	2.02	12.65	13.02	12.93	12.61	13.60	12.72	12.93
parametric HF-adj														
van der Waerden	1.80	1.75	1.66	1.98	2.59	2.26	1.68	6.86	8.38	9.15	9.28	10.40	9.64	10.17
KWF	2.43	2.50	2.38	2.49	3.31	3.40	2.65	6.17	7.45	7.60	7.38	8.65	8.34	9.07
Puri & Sen INT	1.50	1.58	1.50	1.70	2.38	2.08	1.58	7.38	8.45	9.05	9.24	10.44	9.93	10.33
Puri & Sen	2.18	2.36	2.39	2.62	3.30	3.15	2.95	5.81	6.79	7.09	7.18	8.55	8.18	8.30
INT	2.05	1.96	1.74	1.88	2.49	2.21	1.72	9.51	9.95	9.91	9.84	10.85	10.19	10.42
ART INT	2.10	1.96	1.71	1.85	2.41	2.25	1.77	10.65	10.70	10.44	10.35	11.01	10.43	10.37
Koch	2.43	2.50	2.38	2.49	3.31	3.40	2.65	6.17	7.45	7.60	7.38	8.65	8.34	9.07
ATS	10.31	8.49	6.84	6.25	5.72	5.60	5.73	13.60	10.91	8.06	6.81	7.09	6.25	6.37



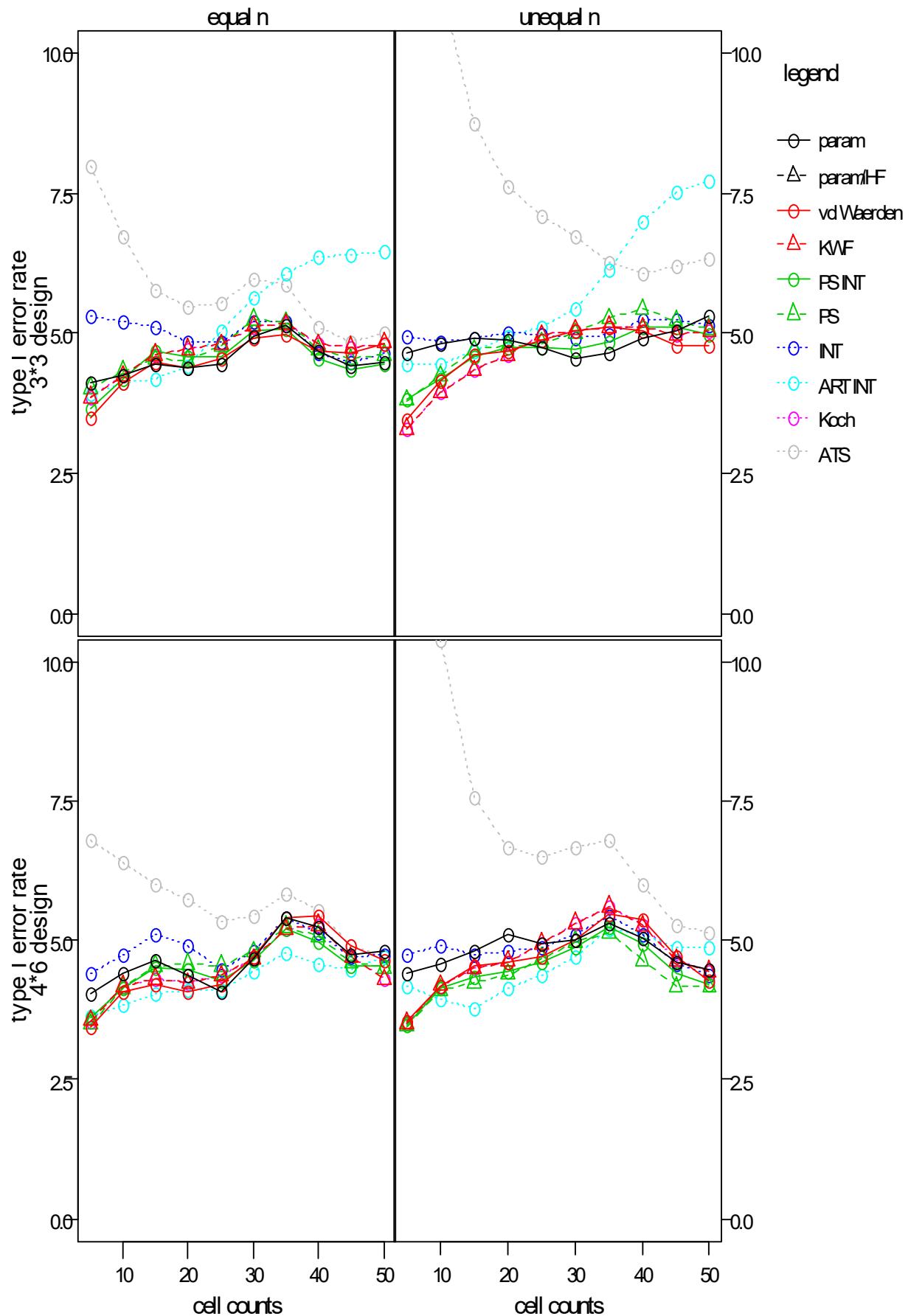
1. 1. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.17	4.30	4.44	4.39	4.95	4.79	4.62	5.07	4.99	4.97	4.88	4.62	4.85	5.20
parametric HF-adj														
van der Waerden	3.58	4.05	4.53	4.50	5.08	4.88	4.77	3.51	4.12	4.56	4.65	5.05	5.09	5.00
KWF	4.03	4.31	4.60	4.60	5.01	4.84	4.75	3.30	3.86	4.42	4.74	5.06	5.24	5.00
Puri & Sen INT	3.97	4.16	4.45	4.42	5.19	4.66	4.83	3.90	4.25	4.67	4.66	4.85	4.89	5.08
Puri & Sen	3.90	4.26	4.54	4.48	5.29	4.55	5.02	3.75	4.11	4.56	4.60	4.97	5.20	4.97
INT	5.45	5.12	4.91	4.74	5.46	4.89	4.97	5.10	5.10	5.11	4.89	5.04	5.04	5.20
ART INT	3.87	3.94	3.89	3.84	4.46	4.22	4.17	4.38	4.28	4.26	4.15	4.14	4.42	4.32
Koch	4.03	4.31	4.60	4.60	5.01	4.84	4.75	3.30	3.86	4.42	4.74	5.06	5.24	5.00
ATS	8.14	7.09	6.01	5.50	5.86	5.04	5.42	13.01	10.76	8.56	7.49	6.65	6.11	6.46
large design (4*6)														
parametric	3.80	4.15	4.56	4.51	4.74	5.03	4.82	4.65	4.56	4.67	4.75	5.15	5.29	5.18
parametric HF-adj														
van der Waerden	3.21	3.96	4.31	4.07	4.51	5.19	4.62	3.70	4.03	4.39	4.57	4.95	5.05	5.13
KWF	3.48	4.10	4.25	4.26	4.76	4.99	4.38	3.81	4.00	4.21	4.42	4.90	4.99	5.32
Puri & Sen INT	3.35	3.81	4.30	4.46	4.75	4.90	4.72	3.33	3.84	4.55	4.86	4.85	4.70	5.05
Puri & Sen	3.51	3.98	4.44	4.59	4.88	5.08	4.72	3.35	3.75	4.40	4.70	4.67	4.51	5.13
INT	4.47	4.61	4.80	4.72	4.89	5.04	4.75	4.67	4.71	4.96	5.14	5.00	4.84	5.20
ART INT	3.40	3.61	3.78	3.66	3.96	4.11	3.95	4.09	3.61	3.60	3.79	4.04	3.98	4.22
Koch	3.48	4.10	4.25	4.26	4.76	4.99	4.38	3.81	4.00	4.21	4.42	4.90	4.99	5.32
ATS	6.95	6.43	5.99	5.74	5.45	5.42	5.19	13.37	10.10	7.53	6.93	6.00	5.46	5.70



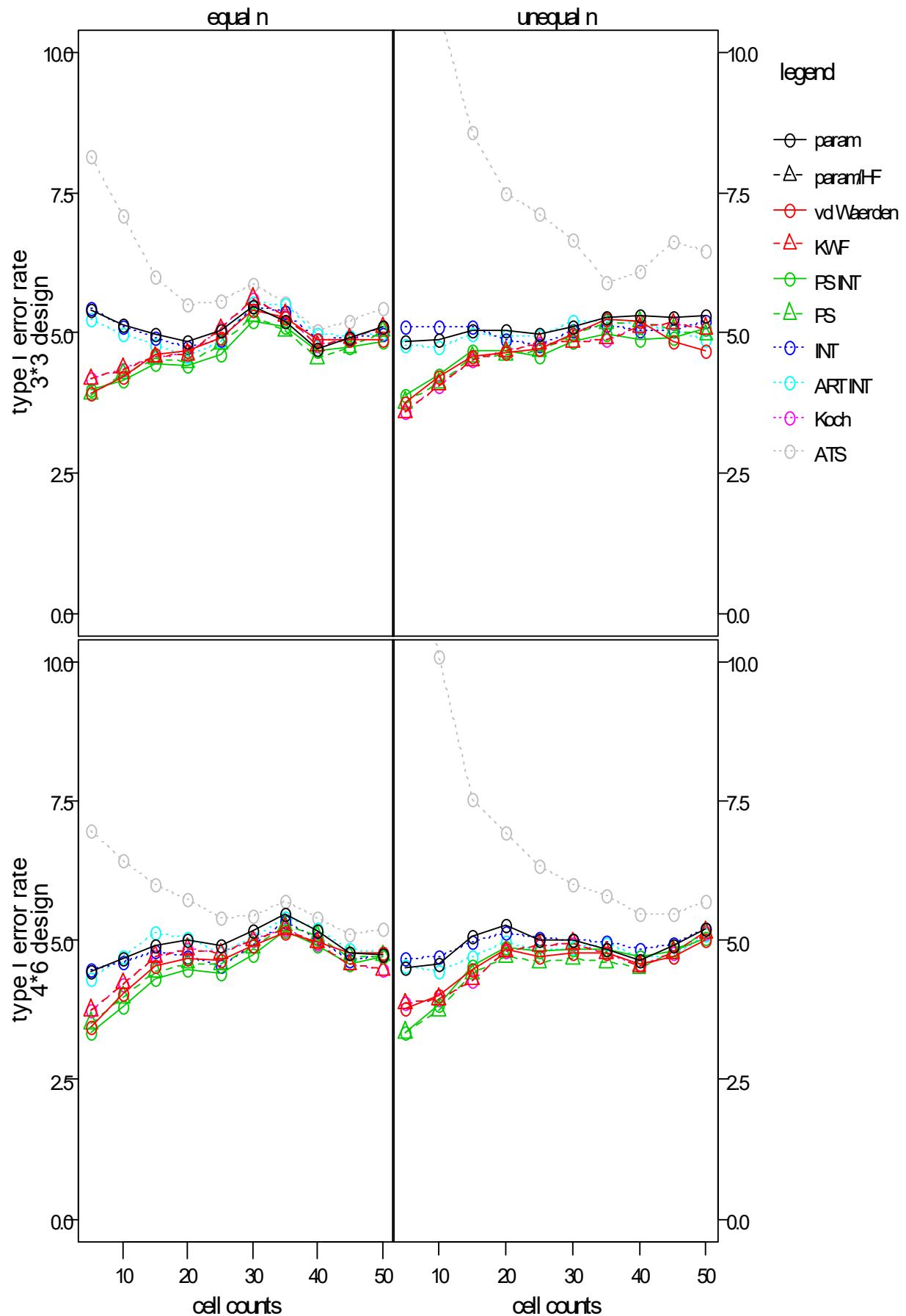
1. 1. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.12	4.25	4.44	4.39	4.95	4.67	4.48	4.65	4.80	4.91	4.89	4.54	4.91	5.30
parametric HF-adj														
van der Waerden	3.48	4.10	4.47	4.39	4.92	4.69	4.82	3.46	4.16	4.60	4.66	5.05	5.04	4.77
KWF	3.85	4.24	4.62	4.71	5.12	4.80	4.82	3.29	3.94	4.33	4.60	5.05	5.10	5.04
Puri & Sen INT	3.66	4.17	4.66	4.57	5.05	4.56	4.43	3.81	4.19	4.59	4.74	4.70	5.12	4.97
Puri & Sen	4.02	4.32	4.54	4.51	5.24	4.70	4.62	3.80	4.24	4.70	4.78	5.00	5.42	5.08
INT	5.32	5.22	5.10	4.84	5.22	4.65	4.63	4.93	4.85	4.91	5.00	4.90	5.24	5.13
ART INT	3.93	4.11	4.19	4.40	5.62	6.35	6.45	4.45	4.43	4.66	4.94	5.43	6.99	7.72
Koch	3.85	4.24	4.62	4.71	5.12	4.80	4.82	3.29	3.94	4.33	4.60	5.05	5.10	5.04
ATS	7.99	6.72	5.76	5.47	5.95	5.12	5.02	13.68	11.26	8.75	7.60	6.71	6.07	6.32
large design (4*6)														
parametric	4.05	4.40	4.64	4.38	4.66	5.24	4.79	4.41	4.56	4.80	5.10	4.99	5.04	4.47
parametric HF-adj														
van der Waerden	3.44	4.08	4.21	4.07	4.71	5.43	4.65	3.56	4.17	4.55	4.62	5.00	5.36	4.27
KWF	3.56	4.18	4.31	4.23	4.66	5.28	4.30	3.51	4.19	4.50	4.62	5.31	5.26	4.45
Puri & Sen INT	3.60	4.14	4.51	4.47	4.65	4.97	4.55	3.48	4.14	4.33	4.44	4.88	4.94	4.22
Puri & Sen	3.49	4.15	4.55	4.58	4.79	5.08	4.50	3.46	4.11	4.25	4.39	4.98	4.64	4.17
INT	4.41	4.75	5.09	4.91	4.81	5.14	4.75	4.73	4.89	4.74	4.79	5.10	5.10	4.37
ART INT	3.65	3.83	4.05	4.10	4.45	4.57	4.72	4.17	3.95	3.76	4.15	4.70	5.11	4.87
Koch	3.56	4.18	4.31	4.23	4.66	5.28	4.30	3.51	4.19	4.50	4.62	5.31	5.26	4.45
ATS	6.79	6.40	6.01	5.73	5.44	5.53	4.72	12.76	10.39	7.57	6.66	6.68	6.00	5.15



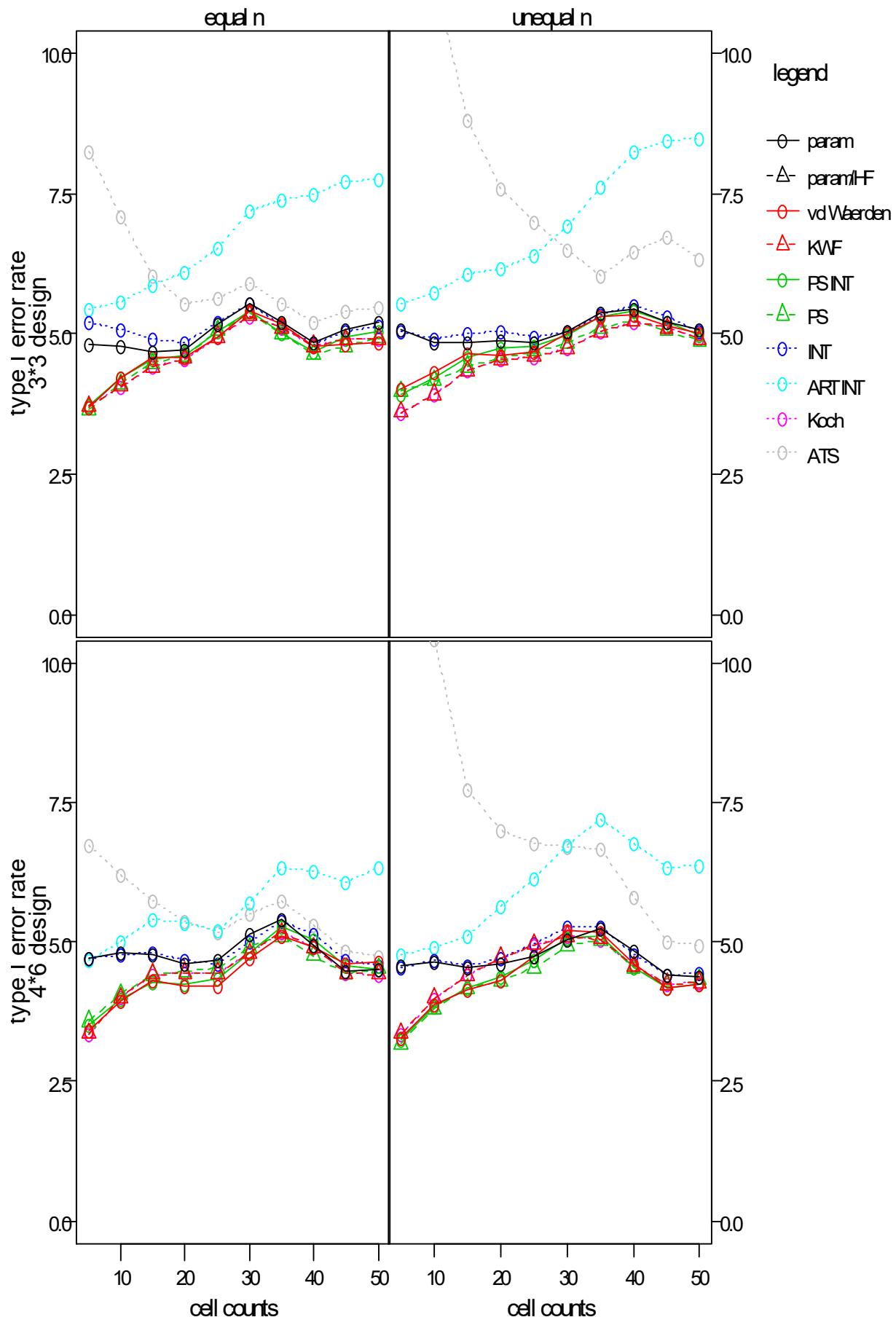
1. 1. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.39	5.14	4.97	4.84	5.47	4.71	5.10	4.85	4.86	5.05	5.03	5.12	5.29	5.30
parametric HF-adj														
van der Waerden	3.92	4.21	4.61	4.69	5.40	4.89	4.87	3.76	4.20	4.57	4.65	4.96	5.19	4.67
KWF	4.17	4.36	4.57	4.61	5.60	4.77	5.10	3.58	4.06	4.50	4.66	4.85	5.10	5.07
Puri & Sen INT	3.97	4.16	4.45	4.42	5.19	4.66	4.83	3.90	4.25	4.67	4.66	4.85	4.89	5.08
Puri & Sen	3.90	4.26	4.54	4.48	5.29	4.55	5.02	3.75	4.11	4.56	4.60	4.97	5.20	4.97
INT	5.45	5.12	4.91	4.74	5.46	4.89	4.97	5.10	5.10	5.11	4.89	5.04	5.04	5.20
ART INT	5.24	4.99	4.78	4.59	5.53	4.97	5.02	4.77	4.74	4.96	4.95	5.20	5.14	4.88
Koch	4.17	4.36	4.57	4.61	5.60	4.77	5.10	3.58	4.06	4.50	4.66	4.85	5.10	5.07
ATS	8.14	7.09	6.01	5.50	5.86	5.04	5.42	13.01	10.76	8.56	7.49	6.65	6.11	6.46
large design (4*6)														
parametric	4.43	4.67	4.92	4.99	5.16	5.17	4.75	4.50	4.59	5.06	5.26	4.99	4.65	5.20
parametric HF-adj														
van der Waerden	3.45	4.03	4.55	4.67	4.90	4.96	4.78	3.78	4.00	4.49	4.83	4.76	4.57	5.00
KWF	3.75	4.22	4.71	4.84	4.99	4.95	4.47	3.87	3.95	4.29	4.79	4.94	4.55	5.14
Puri & Sen INT	3.35	3.81	4.30	4.46	4.75	4.90	4.72	3.33	3.84	4.55	4.86	4.85	4.70	5.05
Puri & Sen	3.51	3.98	4.44	4.59	4.88	5.08	4.72	3.35	3.75	4.40	4.70	4.67	4.51	5.13
INT	4.47	4.61	4.80	4.72	4.89	5.04	4.75	4.67	4.71	4.96	5.14	5.00	4.84	5.20
ART INT	4.30	4.72	5.15	5.03	5.03	5.19	4.78	4.54	4.43	4.72	4.96	4.86	4.70	5.10
Koch	3.75	4.22	4.71	4.84	4.99	4.95	4.47	3.87	3.95	4.29	4.79	4.94	4.55	5.14
ATS	6.95	6.43	5.99	5.74	5.45	5.42	5.19	13.37	10.10	7.53	6.93	6.00	5.46	5.70



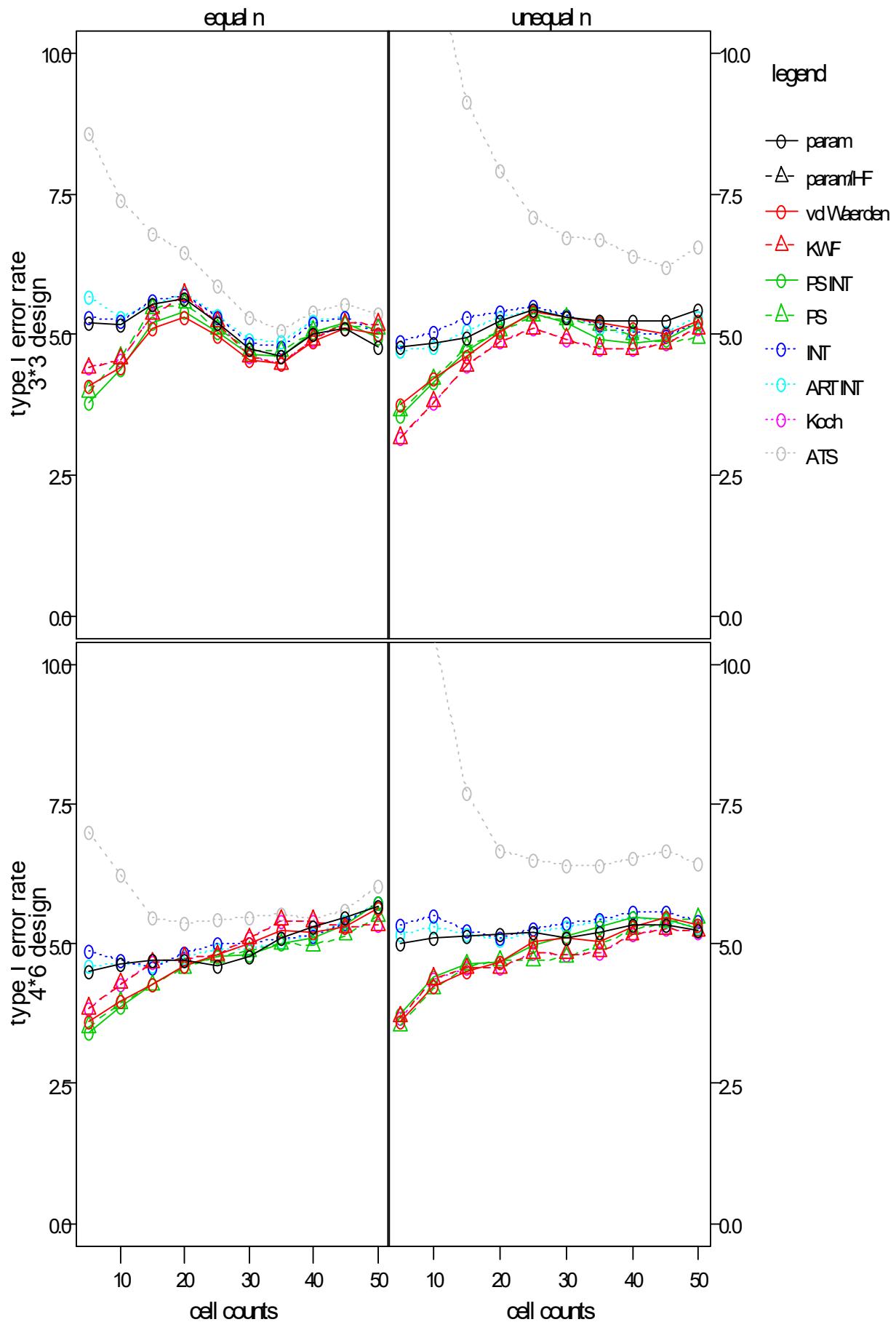
1. 1. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.82	4.76	4.69	4.71	5.55	4.85	5.20	5.07	4.84	4.84	4.89	5.05	5.45	5.07
parametric HF-adj														
van der Waerden	3.70	4.21	4.58	4.59	5.39	4.79	4.83	4.02	4.31	4.64	4.62	5.00	5.33	5.02
KWF	3.71	4.06	4.40	4.56	5.32	4.78	4.91	3.60	3.92	4.33	4.54	4.74	5.22	4.90
Puri & Sen INT	3.71	4.22	4.53	4.61	5.39	4.69	5.03	3.93	4.20	4.57	4.75	4.97	5.41	4.98
Puri & Sen	3.65	4.11	4.47	4.61	5.36	4.64	4.93	3.97	4.16	4.42	4.59	4.85	5.24	4.87
INT	5.22	5.08	4.90	4.85	5.54	4.80	5.13	5.04	4.91	5.00	5.05	5.05	5.50	5.05
ART INT	5.42	5.58	5.88	6.08	7.19	7.50	7.75	5.52	5.73	6.05	6.16	6.91	8.23	8.47
Koch	3.71	4.06	4.40	4.56	5.32	4.78	4.91	3.60	3.92	4.33	4.54	4.74	5.22	4.90
ATS	8.24	7.10	6.02	5.55	5.90	5.19	5.46	13.98	11.34	8.81	7.58	6.49	6.45	6.33
large design (4*6)														
parametric	4.70	4.81	4.78	4.60	5.15	4.94	4.50	4.58	4.64	4.54	4.62	5.04	4.84	4.38
parametric HF-adj														
van der Waerden	3.40	3.94	4.30	4.21	4.71	4.89	4.63	3.29	3.86	4.14	4.31	5.19	4.61	4.24
KWF	3.36	4.00	4.42	4.44	4.80	4.89	4.42	3.36	3.99	4.40	4.72	5.11	4.56	4.28
Puri & Sen INT	3.50	3.96	4.29	4.24	4.81	5.05	4.52	3.24	3.84	4.18	4.36	5.06	4.54	4.25
Puri & Sen	3.58	4.06	4.41	4.46	4.89	4.75	4.52	3.18	3.80	4.17	4.30	4.94	4.55	4.32
INT	4.72	4.78	4.80	4.66	5.00	5.14	4.57	4.55	4.66	4.59	4.70	5.28	4.76	4.45
ART INT	4.67	5.00	5.40	5.35	5.69	6.26	6.35	4.76	4.92	5.09	5.62	6.74	6.76	6.38
Koch	3.36	4.00	4.42	4.44	4.80	4.89	4.42	3.36	3.99	4.40	4.72	5.11	4.56	4.28
ATS	6.74	6.19	5.74	5.38	5.49	5.31	4.75	12.89	10.41	7.74	6.99	6.69	5.81	4.93



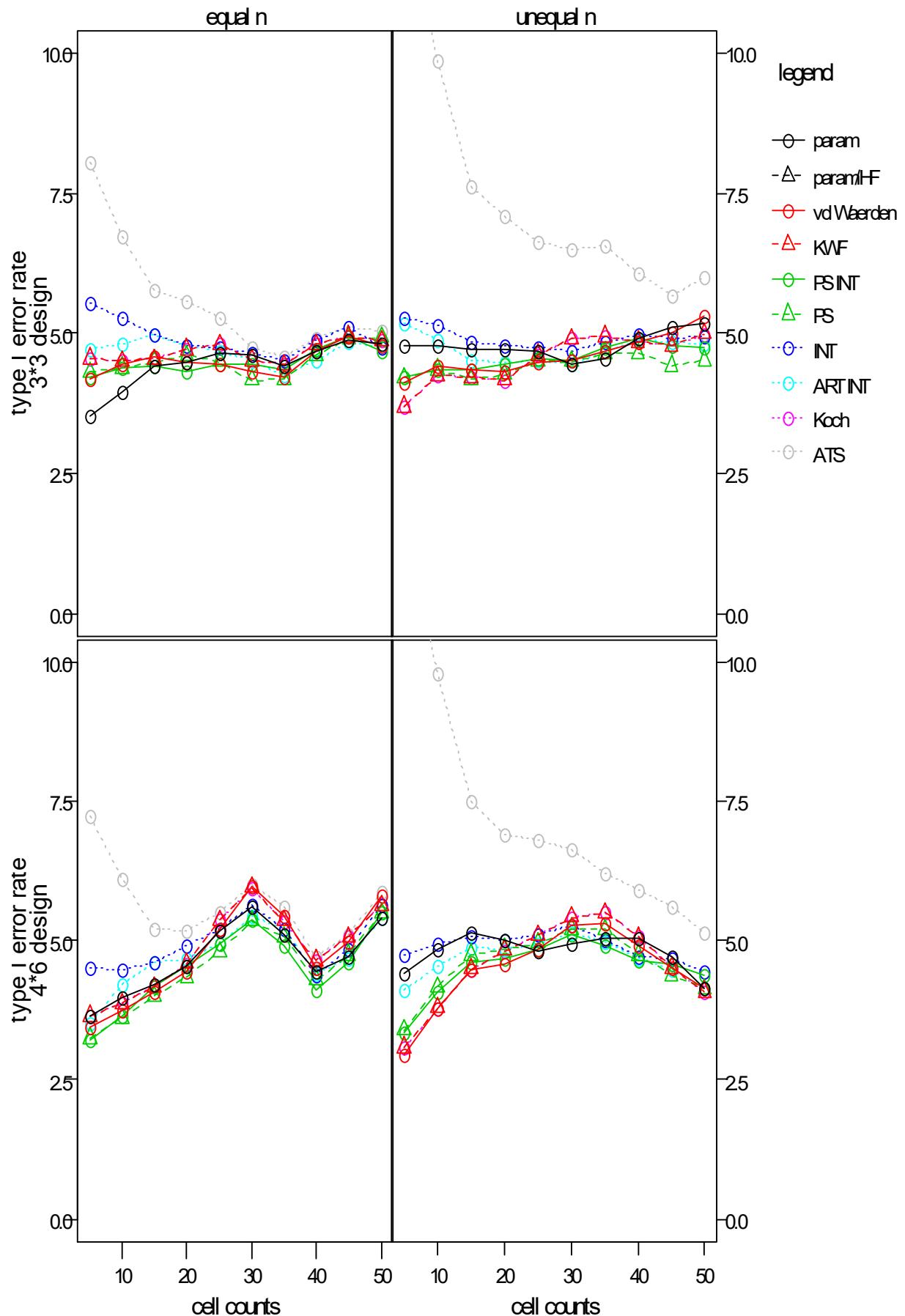
1. 1. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.22	5.16	5.55	5.64	4.74	5.00	4.78	4.77	4.84	4.95	5.24	5.31	5.24	5.44
parametric HF-adj														
van der Waerden	4.07	4.42	5.11	5.30	4.56	4.88	5.00	3.75	4.22	4.61	5.05	5.29	5.12	5.24
KWF	4.40	4.56	5.35	5.71	4.60	4.91	5.17	3.16	3.80	4.44	4.88	4.92	4.74	5.10
Puri & Sen INT	3.78	4.38	5.21	5.40	4.65	5.05	4.93	3.56	4.15	4.71	5.06	5.19	4.85	5.22
Puri & Sen	3.98	4.58	5.46	5.55	4.70	5.05	5.10	3.63	4.21	4.76	5.07	5.28	4.99	4.94
INT	5.32	5.25	5.60	5.71	4.84	5.20	5.00	4.87	5.04	5.29	5.40	5.35	5.05	5.22
ART INT	5.66	5.31	5.55	5.72	4.90	5.24	5.01	4.70	4.78	5.06	5.31	5.33	4.99	5.30
Koch	4.40	4.56	5.35	5.71	4.60	4.91	5.17	3.16	3.80	4.44	4.88	4.92	4.74	5.10
ATS	8.59	7.40	6.79	6.45	5.30	5.40	5.37	14.65	11.73	9.14	7.92	6.71	6.38	6.55
large design (4*6)														
parametric	4.51	4.64	4.70	4.70	4.76	5.30	5.68	5.00	5.12	5.14	5.16	5.12	5.34	5.25
parametric HF-adj														
van der Waerden	3.60	3.96	4.26	4.60	4.99	5.21	5.62	3.61	4.24	4.51	4.66	5.12	5.29	5.33
KWF	3.85	4.29	4.66	4.75	5.10	5.41	5.33	3.69	4.38	4.56	4.56	4.82	5.16	5.22
Puri & Sen INT	3.41	3.88	4.26	4.60	4.81	5.12	5.72	3.73	4.41	4.65	4.68	5.14	5.47	5.26
Puri & Sen	3.51	3.95	4.26	4.56	4.86	4.97	5.50	3.53	4.20	4.62	4.69	4.75	5.25	5.45
INT	4.87	4.71	4.59	4.83	4.99	5.15	5.75	5.33	5.49	5.24	5.10	5.36	5.58	5.40
ART INT	4.60	4.65	4.61	4.77	4.89	5.17	5.74	5.16	5.31	5.16	5.08	5.30	5.46	5.30
Koch	3.85	4.29	4.66	4.75	5.10	5.41	5.33	3.69	4.38	4.56	4.56	4.82	5.16	5.22
ATS	7.00	6.22	5.46	5.36	5.47	5.45	6.02	13.18	10.55	7.69	6.67	6.40	6.55	6.45



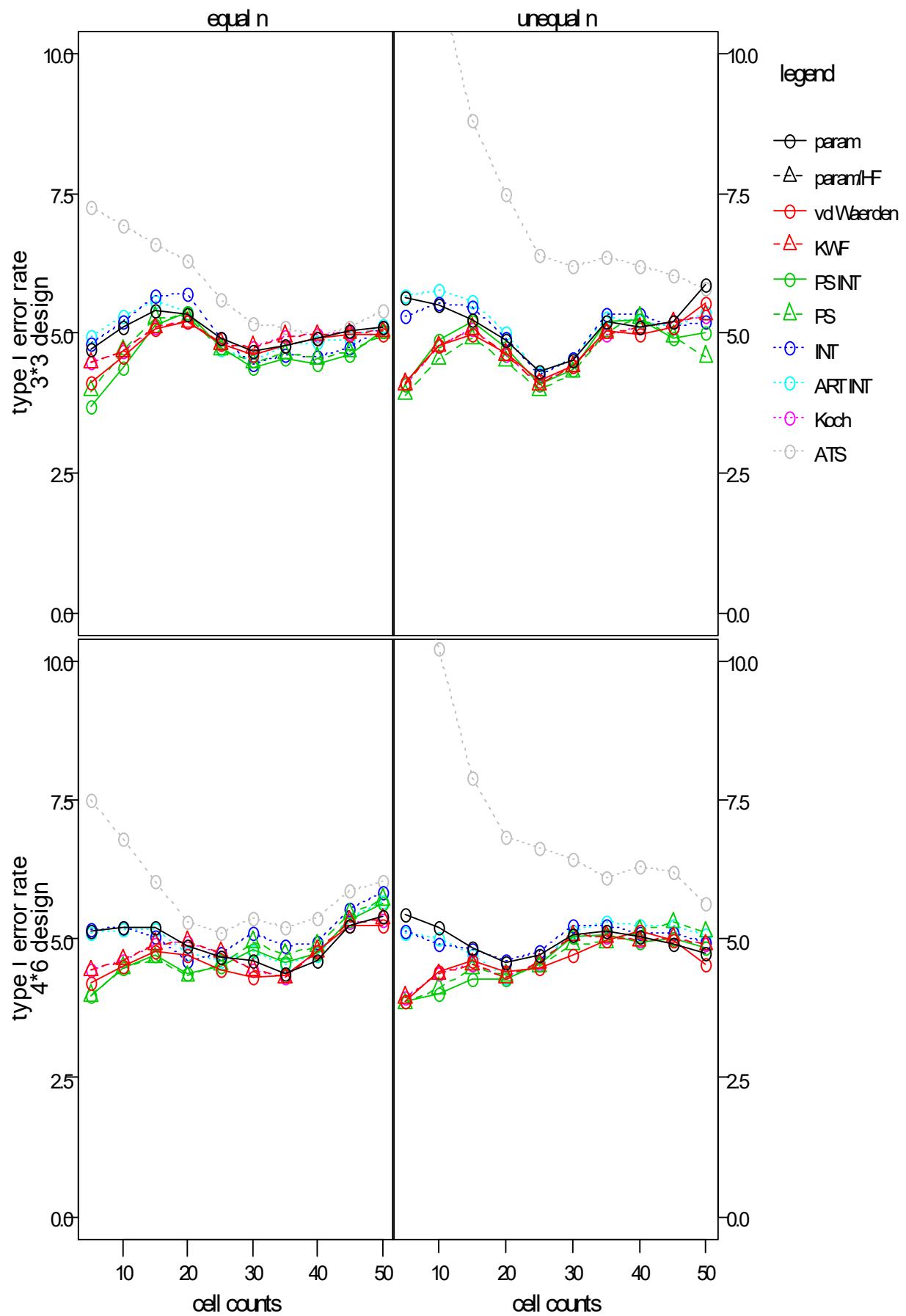
1. 1. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.53	3.96	4.41	4.47	4.61	4.67	4.80	4.77	4.79	4.71	4.70	4.45	4.90	5.18
parametric HF-adj														
van der Waerden	4.18	4.44	4.58	4.47	4.31	4.66	4.76	4.13	4.41	4.35	4.31	4.51	4.85	5.30
KWF	4.55	4.50	4.53	4.71	4.51	4.80	4.87	3.69	4.24	4.20	4.16	4.90	4.85	4.99
Puri & Sen INT	4.23	4.39	4.41	4.32	4.46	4.71	4.66	4.21	4.36	4.36	4.46	4.51	4.90	4.75
Puri & Sen	4.30	4.38	4.49	4.60	4.16	4.61	4.92	4.21	4.35	4.17	4.26	4.49	4.64	4.52
INT	5.52	5.28	4.97	4.76	4.64	4.89	4.75	5.28	5.15	4.85	4.76	4.66	4.99	4.93
ART INT	4.70	4.82	4.96	4.79	4.51	4.51	4.73	5.17	4.88	4.51	4.47	4.45	4.88	4.80
Koch	4.55	4.50	4.53	4.71	4.51	4.80	4.87	3.69	4.24	4.20	4.16	4.90	4.85	4.99
ATS	8.03	6.74	5.78	5.56	4.75	4.91	5.03	12.85	9.86	7.61	7.10	6.49	6.06	5.99
large design (4*6)														
parametric	3.63	3.97	4.22	4.55	5.60	4.44	5.39	4.41	4.84	5.15	4.99	4.94	5.03	4.13
parametric HF-adj														
van der Waerden	3.43	3.74	4.06	4.44	5.98	4.50	5.80	2.93	3.76	4.46	4.59	5.26	4.92	4.13
KWF	3.65	3.86	4.16	4.59	5.95	4.64	5.62	3.08	3.79	4.49	4.82	5.42	5.06	4.08
Puri & Sen INT	3.20	3.63	4.17	4.55	5.38	4.12	5.52	3.36	4.06	4.62	4.66	5.10	4.64	4.36
Puri & Sen	3.25	3.60	4.00	4.35	5.35	4.29	5.49	3.39	4.17	4.74	4.84	5.21	4.74	4.13
INT	4.52	4.46	4.62	4.89	5.62	4.39	5.65	4.73	4.94	5.06	5.00	5.26	4.72	4.43
ART INT	3.51	4.20	4.62	4.68	5.45	4.40	5.42	4.10	4.54	4.88	4.83	5.15	4.67	4.13
Koch	3.65	3.86	4.16	4.59	5.95	4.64	5.62	3.08	3.79	4.49	4.82	5.42	5.06	4.08
ATS	7.22	6.09	5.19	5.16	5.99	4.72	5.87	12.50	9.78	7.50	6.91	6.64	5.90	5.15



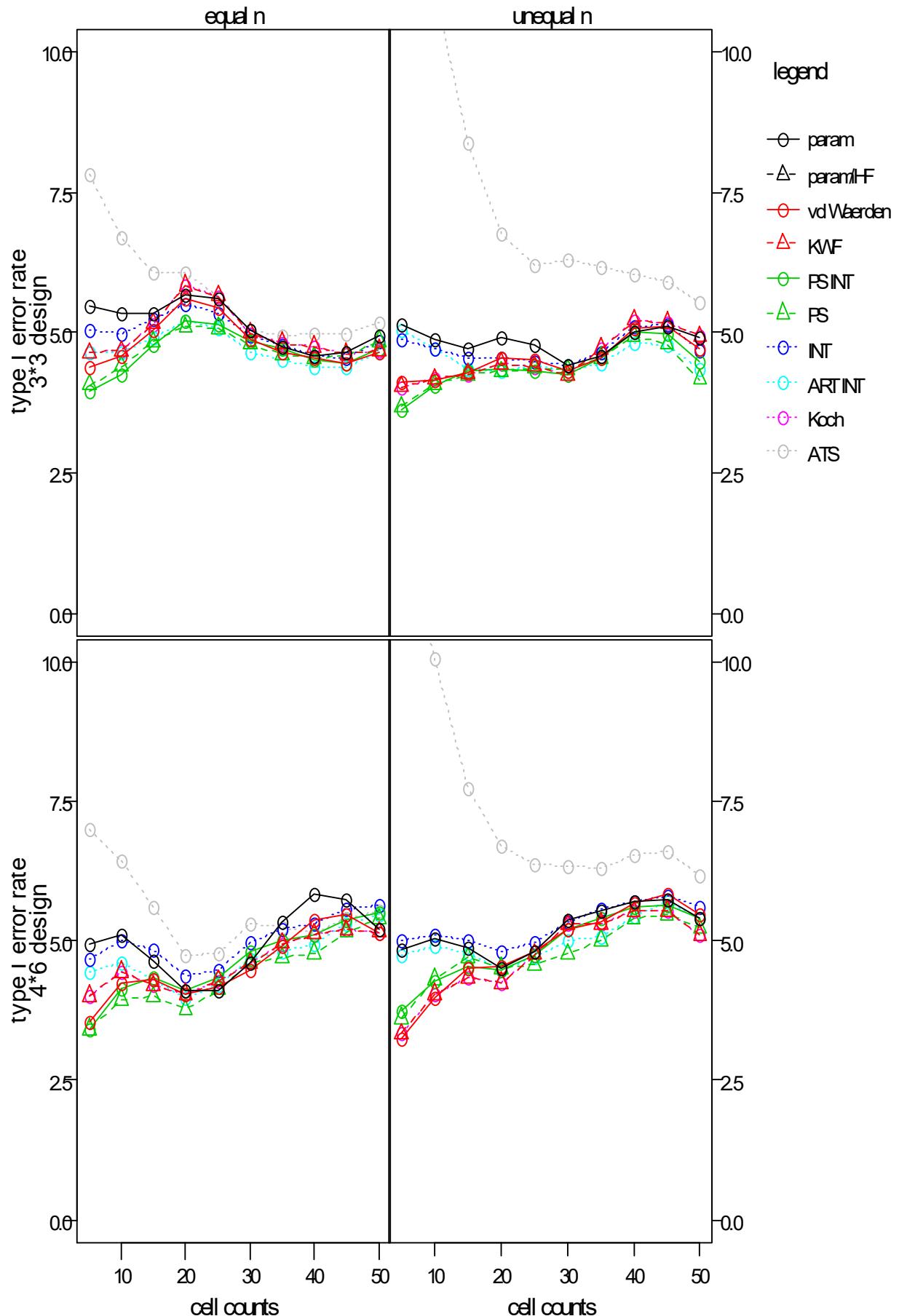
1. 1. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.70	5.10	5.40	5.34	4.68	4.90	5.12	5.63	5.51	5.25	4.88	4.51	5.12	5.86
parametric HF-adj														
van der Waerden	4.10	4.58	5.08	5.20	4.61	4.91	4.97	4.11	4.76	4.99	4.65	4.41	4.97	5.54
KWF	4.47	4.67	5.09	5.20	4.74	4.97	5.03	4.09	4.76	5.07	4.62	4.40	5.10	5.32
Puri & Sen INT	3.68	4.38	5.15	5.36	4.39	4.45	5.05	4.08	4.86	5.22	4.74	4.36	5.23	5.02
Puri & Sen	3.96	4.69	5.28	5.30	4.47	4.55	4.99	3.90	4.54	4.90	4.49	4.29	5.27	4.58
INT	4.81	5.20	5.67	5.69	4.46	4.59	5.12	5.30	5.53	5.46	4.91	4.53	5.35	5.22
ART INT	4.95	5.30	5.58	5.38	4.50	4.83	5.14	5.66	5.76	5.57	5.00	4.54	5.22	5.37
Koch	4.47	4.67	5.09	5.20	4.74	4.97	5.03	4.09	4.76	5.07	4.62	4.40	5.10	5.32
ATS	7.25	6.92	6.60	6.29	5.17	4.95	5.40	14.03	11.34	8.80	7.50	6.19	6.19	5.80
large design (4*6)														
parametric	5.15	5.20	5.19	4.88	4.61	4.60	5.42	5.45	5.22	4.85	4.56	5.06	5.04	4.75
parametric HF-adj														
van der Waerden	4.20	4.51	4.77	4.70	4.30	4.76	5.23	3.88	4.40	4.60	4.41	4.71	5.15	4.53
KWF	4.43	4.62	4.91	4.95	4.44	4.78	5.35	3.95	4.36	4.54	4.31	5.06	4.96	4.90
Puri & Sen INT	3.98	4.49	4.69	4.36	4.80	4.74	5.63	3.87	4.01	4.26	4.29	5.04	4.95	4.85
Puri & Sen	3.98	4.48	4.65	4.33	4.94	4.88	5.70	3.83	4.11	4.46	4.35	4.89	5.15	5.12
INT	5.17	5.21	5.04	4.60	5.11	4.94	5.83	5.14	4.91	4.81	4.62	5.25	5.11	4.95
ART INT	5.12	5.18	5.16	4.75	4.76	4.70	5.68	5.12	4.99	4.69	4.31	5.15	5.25	5.08
Koch	4.43	4.62	4.91	4.95	4.44	4.78	5.35	3.95	4.36	4.54	4.31	5.06	4.96	4.90
ATS	7.51	6.81	6.05	5.29	5.36	5.38	6.03	12.55	10.21	7.90	6.83	6.44	6.29	5.65



1. 1. 1. 13 normal distribution - equal variances - contaminated III

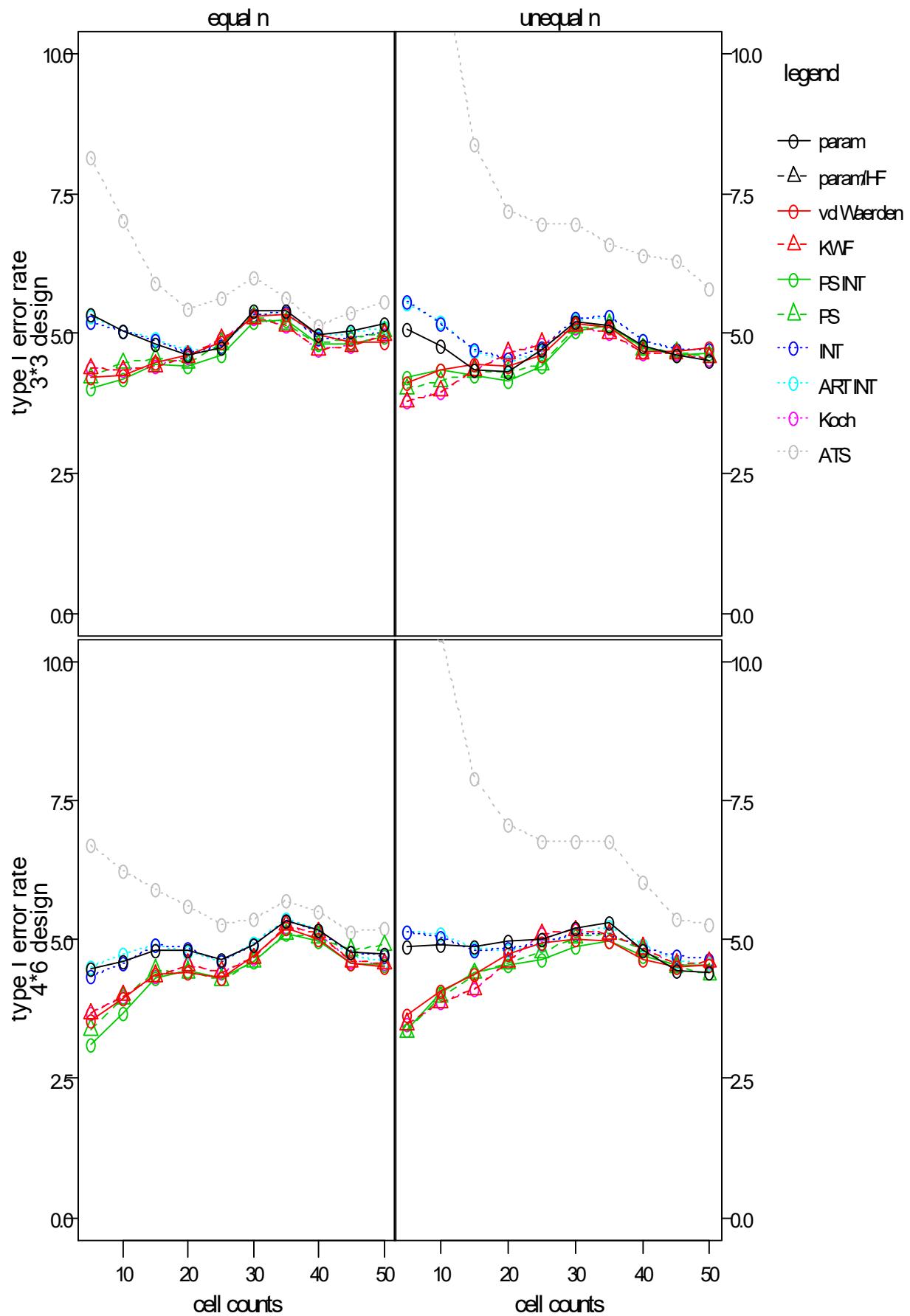
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.48	5.35	5.33	5.67	5.05	4.59	4.94	5.15	4.86	4.71	4.90	4.42	5.01	4.90
parametric HF-adj														
van der Waerden	4.38	4.58	5.05	5.60	4.86	4.55	4.64	4.10	4.15	4.29	4.55	4.31	5.06	4.70
KWF	4.63	4.66	5.15	5.83	4.99	4.74	4.68	4.03	4.17	4.26	4.45	4.24	5.22	4.93
Puri & Sen INT	3.95	4.25	4.78	5.19	4.84	4.51	4.70	3.61	4.05	4.31	4.35	4.26	5.01	4.48
Puri & Sen	4.06	4.39	4.83	5.10	4.79	4.55	4.84	3.68	4.07	4.24	4.30	4.34	4.94	4.16
INT	5.05	4.99	5.24	5.50	4.95	4.58	4.84	4.88	4.72	4.56	4.55	4.40	5.12	4.68
ART INT	4.63	4.65	4.90	5.21	4.64	4.39	4.65	5.03	4.71	4.33	4.32	4.30	4.80	4.36
Koch	4.63	4.66	5.15	5.83	4.99	4.74	4.68	4.03	4.17	4.26	4.45	4.24	5.22	4.93
ATS	7.81	6.69	6.07	6.06	5.05	4.99	5.17	13.67	11.09	8.38	6.76	6.28	6.04	5.53
large design (4*6)														
parametric	4.93	5.09	4.64	4.12	4.60	5.84	5.20	4.85	5.03	4.88	4.51	5.38	5.71	5.40
parametric HF-adj														
van der Waerden	3.56	4.24	4.30	4.05	4.49	5.36	5.13	3.23	3.98	4.50	4.54	5.20	5.66	5.48
KWF	4.01	4.44	4.20	4.04	4.60	5.12	5.15	3.34	4.05	4.35	4.25	5.29	5.53	5.11
Puri & Sen INT	3.41	4.15	4.35	4.11	4.81	5.09	5.50	3.75	4.29	4.54	4.48	5.19	5.59	5.40
Puri & Sen	3.41	3.94	4.00	3.77	4.62	4.78	5.40	3.61	4.31	4.70	4.51	4.76	5.39	5.23
INT	4.68	5.00	4.84	4.36	4.98	5.29	5.65	5.00	5.10	4.99	4.80	5.35	5.71	5.61
ART INT	4.45	4.61	4.31	3.96	4.67	4.94	5.47	4.73	4.92	4.78	4.49	5.00	5.44	5.41
Koch	4.01	4.44	4.20	4.04	4.60	5.12	5.15	3.34	4.05	4.35	4.25	5.29	5.53	5.11
ATS	6.99	6.45	5.59	4.74	5.29	5.15	5.55	12.57	10.06	7.74	6.69	6.35	6.55	6.16



1. 1. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

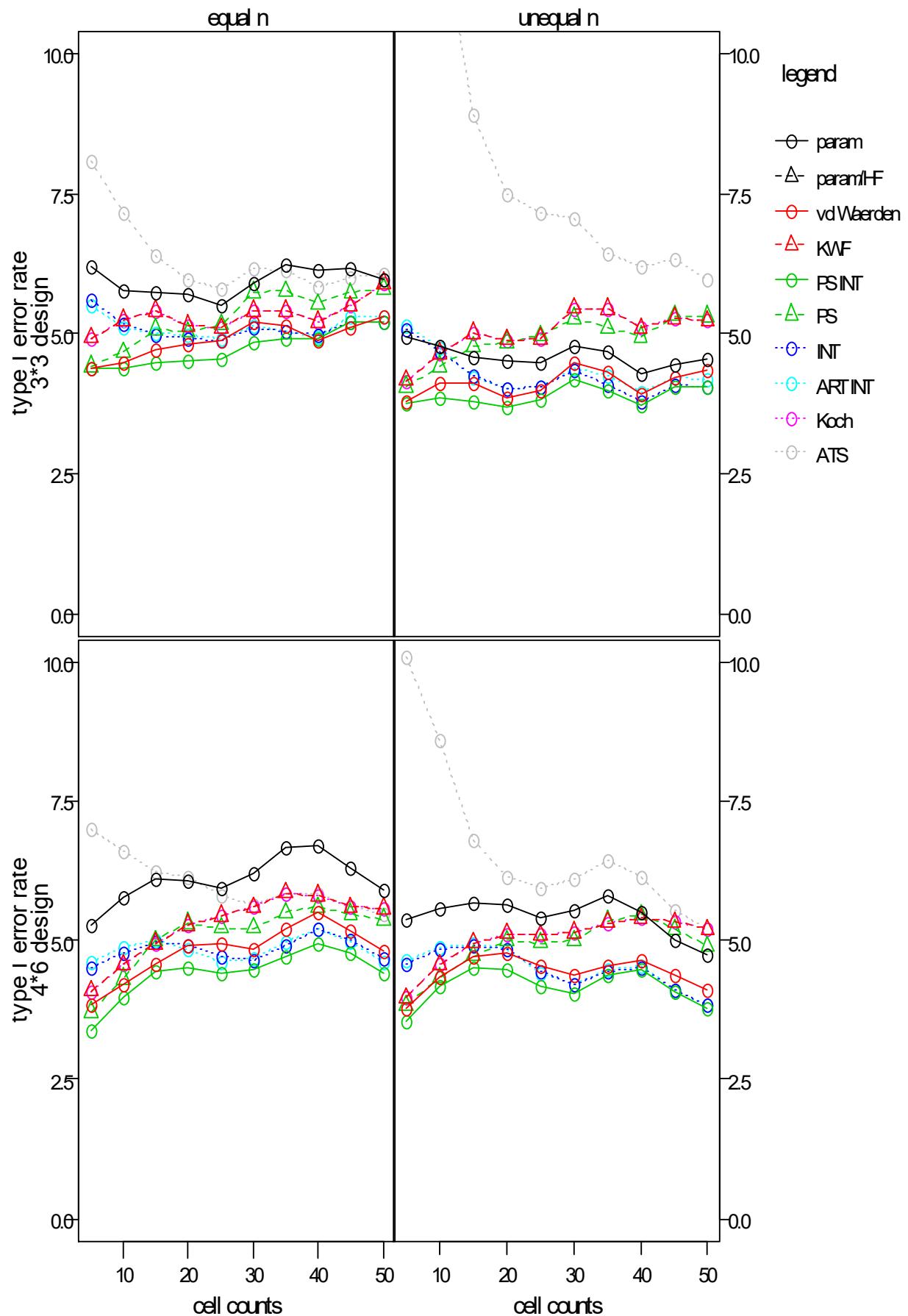
1. 1. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.03	4.80	4.60	5.40	4.96	5.18	5.08	4.79	4.35	4.30	5.22	4.76	4.50
parametric HF-adj														
van der Waerden	4.22	4.24	4.48	4.60	5.31	4.99	4.83	4.11	4.34	4.46	4.41	5.16	4.67	4.75
KWF	4.37	4.34	4.42	4.58	5.26	4.71	4.98	3.77	3.96	4.35	4.65	5.12	4.65	4.56
Puri & Sen INT	4.00	4.19	4.45	4.42	5.20	4.80	4.95	4.20	4.34	4.25	4.14	5.04	4.75	4.63
Puri & Sen	4.21	4.47	4.55	4.47	5.30	4.80	5.02	4.00	4.14	4.32	4.30	5.11	4.71	4.58
INT	5.22	5.04	4.88	4.65	5.35	4.90	5.05	5.57	5.18	4.70	4.53	5.26	4.89	4.70
ART INT	5.32	5.05	4.90	4.69	5.34	4.94	5.12	5.55	5.19	4.67	4.47	5.24	4.86	4.72
Koch	4.37	4.34	4.42	4.58	5.26	4.71	4.98	3.77	3.96	4.35	4.65	5.12	4.65	4.56
ATS	8.14	7.01	5.90	5.44	6.00	5.15	5.57	15.34	11.66	8.39	7.20	6.96	6.38	5.79
large design (4*6)														
parametric	4.48	4.61	4.80	4.80	4.90	5.16	4.73	4.88	4.92	4.86	4.97	5.19	4.82	4.40
parametric HF-adj														
van der Waerden	3.55	3.95	4.36	4.42	4.71	5.00	4.50	3.65	4.06	4.39	4.74	5.01	4.65	4.55
KWF	3.66	3.99	4.34	4.54	4.66	5.12	4.57	3.48	3.88	4.11	4.60	5.16	4.84	4.60
Puri & Sen INT	3.10	3.67	4.31	4.45	4.61	4.97	4.53	3.38	4.03	4.40	4.54	4.86	4.71	4.53
Puri & Sen	3.38	3.94	4.44	4.41	4.60	5.04	4.90	3.34	3.96	4.39	4.58	5.03	4.80	4.38
INT	4.35	4.59	4.89	4.84	4.90	5.15	4.72	5.13	5.03	4.79	4.84	5.10	4.84	4.63
ART INT	4.50	4.74	4.90	4.78	4.93	5.16	4.60	5.13	5.10	4.84	4.81	5.11	4.89	4.58
Koch	3.66	3.99	4.34	4.54	4.66	5.12	4.57	3.48	3.88	4.11	4.60	5.16	4.84	4.60
ATS	6.69	6.25	5.91	5.60	5.38	5.49	5.20	12.83	10.50	7.90	7.05	6.75	6.03	5.28



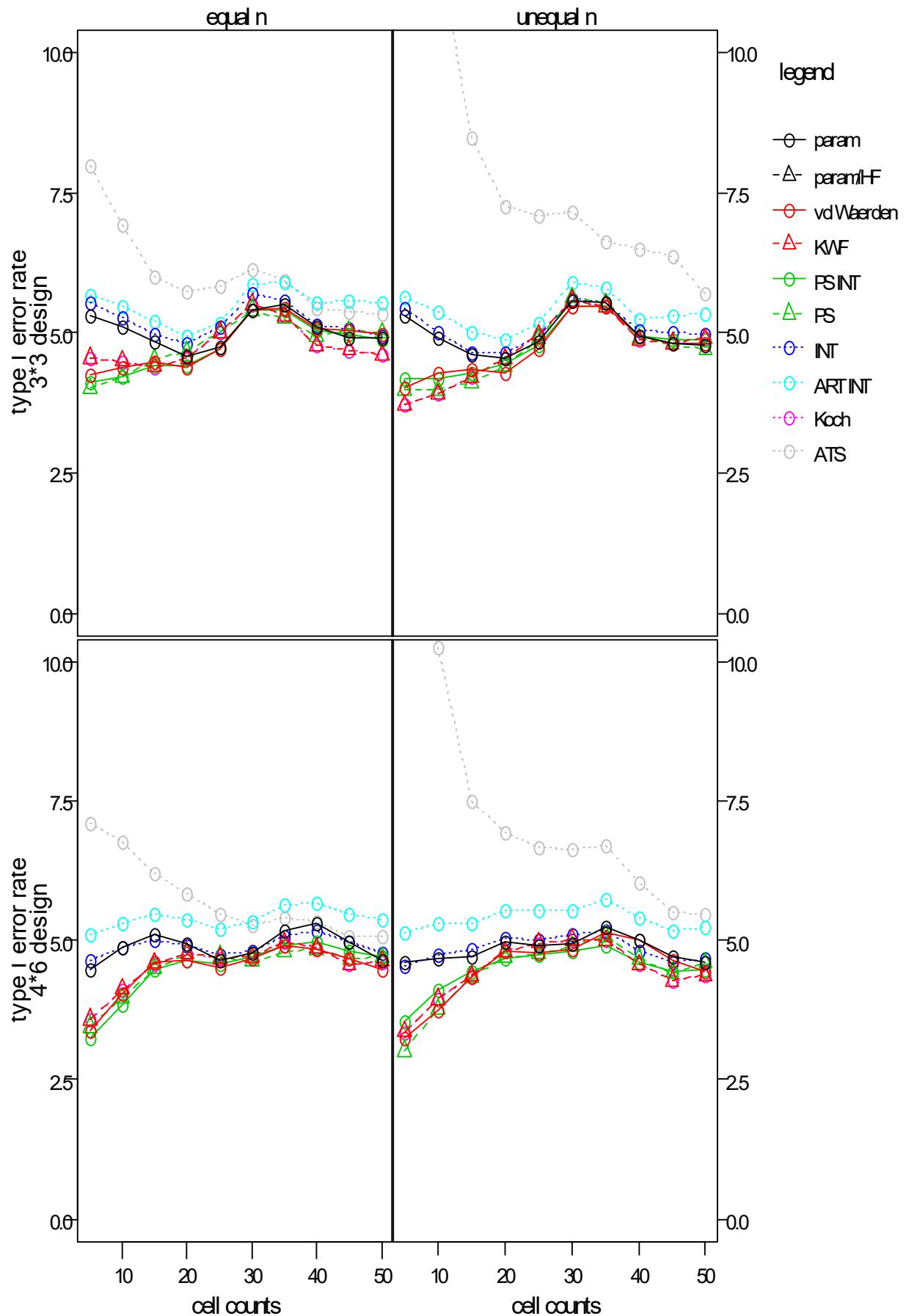
1. 1. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.19	5.77	5.72	5.69	5.91	6.14	5.95	4.95	4.78	4.59	4.51	4.76	4.29	4.55
parametric HF-adj														
van der Waerden	4.38	4.47	4.72	4.80	5.22	4.89	5.32	3.80	4.11	4.11	3.86	4.49	3.91	4.35
KWF	4.92	5.24	5.40	5.14	5.40	5.21	5.90	4.16	4.65	5.01	4.89	5.45	5.10	5.23
Puri & Sen INT	4.38	4.39	4.47	4.50	4.84	4.90	5.20	3.75	3.85	3.80	3.69	4.18	3.73	4.05
Puri & Sen	4.42	4.66	5.08	5.03	5.74	5.53	5.80	4.05	4.42	4.77	4.85	5.28	4.94	5.31
INT	5.59	5.17	4.97	4.90	5.09	4.97	5.20	5.07	4.69	4.24	4.00	4.33	3.77	4.06
ART INT	5.50	5.12	5.01	4.96	5.15	4.95	5.30	5.13	4.73	4.21	4.01	4.39	3.95	4.18
Koch	4.92	5.24	5.40	5.14	5.40	5.21	5.90	4.16	4.65	5.01	4.89	5.45	5.10	5.23
ATS	8.09	7.14	6.40	5.96	6.15	5.84	6.06	16.66	12.60	8.89	7.47	7.04	6.21	5.98
large design (4*6)														
parametric	5.28	5.77	6.10	6.06	6.21	6.70	5.91	5.38	5.56	5.66	5.62	5.54	5.51	4.75
parametric HF-adj														
van der Waerden	3.83	4.21	4.56	4.92	4.84	5.49	4.82	3.78	4.34	4.69	4.76	4.39	4.64	4.10
KWF	4.09	4.56	4.94	5.28	5.59	5.81	5.58	3.96	4.56	4.95	5.12	5.14	5.39	5.20
Puri & Sen INT	3.38	3.96	4.45	4.51	4.46	4.95	4.40	3.53	4.16	4.51	4.48	4.05	4.46	3.77
Puri & Sen	3.71	4.31	4.99	5.31	5.22	5.60	5.37	3.83	4.33	4.72	5.00	4.99	5.46	4.90
INT	4.50	4.76	4.97	4.91	4.64	5.19	4.66	4.58	4.83	4.92	4.84	4.20	4.50	3.83
ART INT	4.60	4.88	5.01	4.85	4.66	5.20	4.60	4.63	4.86	4.95	4.85	4.21	4.53	3.83
Koch	4.09	4.56	4.94	5.28	5.59	5.81	5.58	3.96	4.56	4.95	5.12	5.14	5.39	5.20
ATS	7.00	6.60	6.22	6.12	5.65	5.83	5.47	10.09	8.60	6.80	6.14	6.10	6.14	5.22



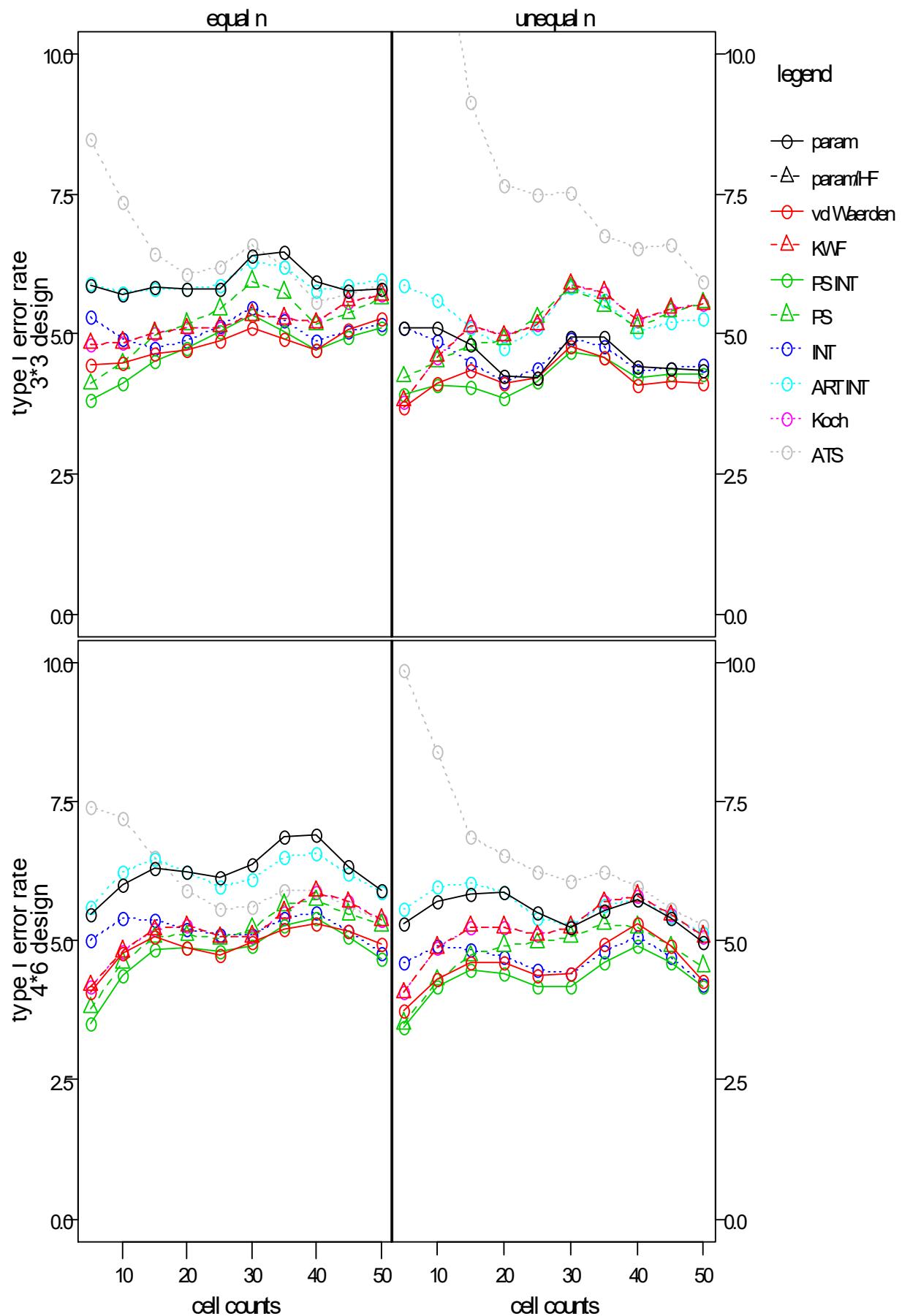
1. 1. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.32	5.12	4.85	4.58	5.39	5.09	4.92	5.32	4.92	4.62	4.55	5.56	4.95	4.76
parametric HF-adj														
van der Waerden	4.25	4.39	4.49	4.39	5.41	5.07	4.96	4.03	4.28	4.34	4.29	5.47	4.95	4.82
KWF	4.55	4.49	4.39	4.53	5.51	4.76	4.60	3.71	3.91	4.21	4.54	5.57	4.86	4.90
Puri & Sen INT	4.10	4.21	4.41	4.41	5.41	5.03	4.86	4.18	4.19	4.29	4.45	5.46	4.95	4.88
Puri & Sen	4.00	4.21	4.51	4.66	5.40	4.95	5.00	3.97	3.97	4.11	4.40	5.62	4.90	4.70
INT	5.54	5.28	4.96	4.80	5.69	5.14	4.93	5.45	5.00	4.65	4.64	5.61	5.03	4.96
ART INT	5.67	5.46	5.21	4.94	5.86	5.53	5.53	5.62	5.36	5.01	4.86	5.89	5.24	5.35
Koch	4.55	4.49	4.39	4.53	5.51	4.76	4.60	3.71	3.91	4.21	4.54	5.57	4.86	4.90
ATS	7.97	6.92	6.01	5.74	6.12	5.43	5.35	15.83	11.88	8.47	7.25	7.14	6.49	5.71
large design (4*6)														
parametric	4.46	4.86	5.12	4.94	4.78	5.31	4.63	4.60	4.67	4.70	4.96	4.94	5.00	4.60
parametric HF-adj														
van der Waerden	3.38	4.05	4.62	4.65	4.67	4.85	4.47	3.23	3.75	4.34	4.81	4.83	4.99	4.45
KWF	3.58	4.12	4.59	4.78	4.70	4.86	4.62	3.36	3.94	4.36	4.79	5.01	4.56	4.37
Puri & Sen INT	3.26	3.84	4.47	4.64	4.70	4.96	4.70	3.54	4.11	4.43	4.67	4.81	4.60	4.47
Puri & Sen	3.45	3.96	4.49	4.75	4.62	4.84	4.70	3.01	3.77	4.34	4.70	4.89	4.67	4.60
INT	4.63	4.86	5.00	4.89	4.81	5.16	4.78	4.55	4.75	4.85	5.04	5.09	4.79	4.68
ART INT	5.12	5.31	5.46	5.38	5.33	5.67	5.37	5.15	5.30	5.31	5.55	5.55	5.41	5.23
Koch	3.58	4.12	4.59	4.78	4.70	4.86	4.62	3.36	3.94	4.36	4.79	5.01	4.56	4.37
ATS	7.10	6.76	6.20	5.85	5.26	5.33	5.07	13.15	10.25	7.49	6.92	6.64	6.03	5.48



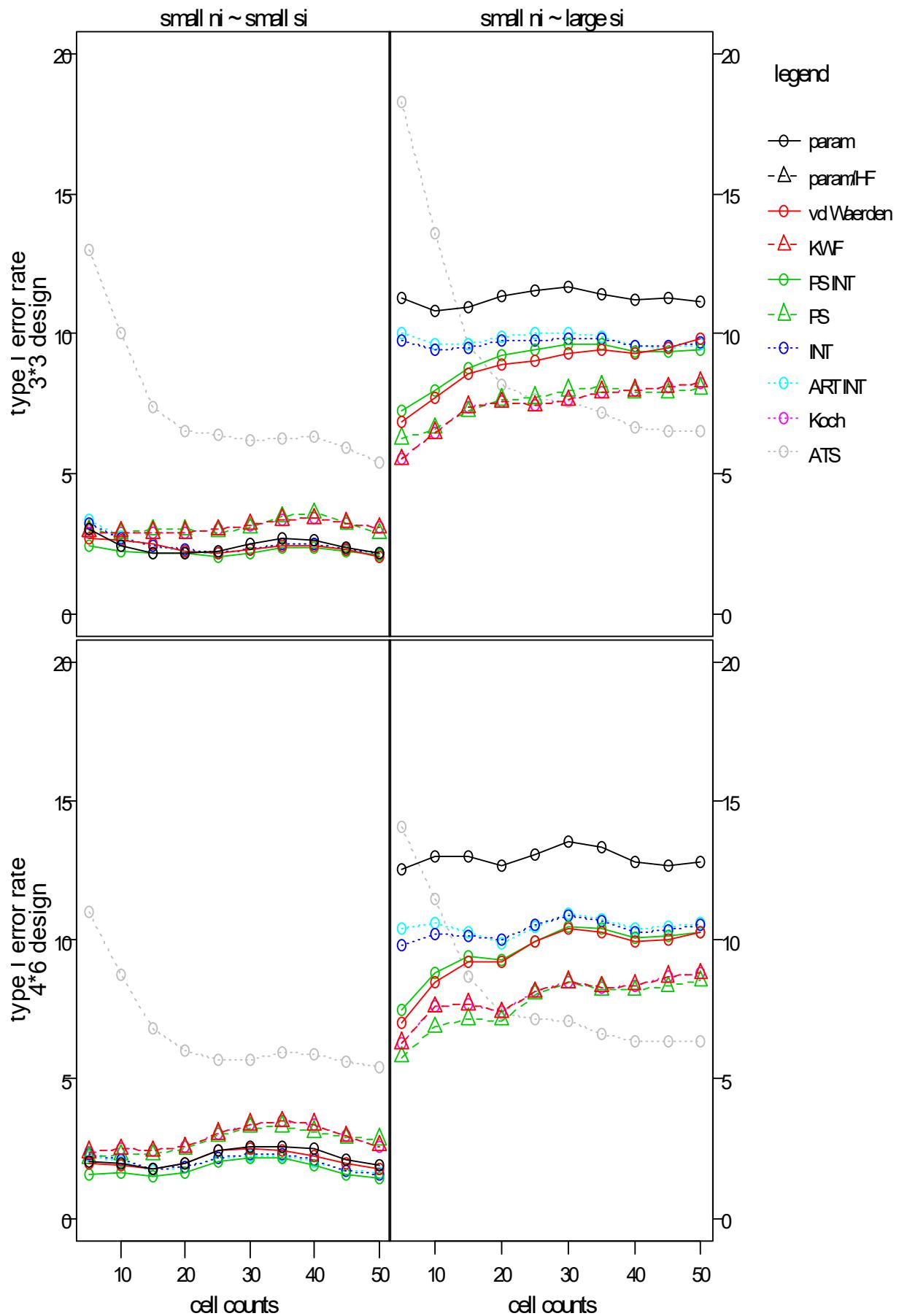
1. 1. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.85	5.71	5.83	5.79	6.39	5.93	5.80	5.10	5.09	4.80	4.25	4.93	4.40	4.33
parametric HF-adj														
van der Waerden	4.45	4.49	4.64	4.71	5.11	4.70	5.28	3.68	4.11	4.33	4.10	4.76	4.08	4.13
KWF	4.82	4.85	5.01	5.10	5.34	5.19	5.71	3.80	4.59	5.14	4.97	5.88	5.24	5.53
Puri & Sen INT	3.82	4.12	4.50	4.74	5.34	4.70	5.12	3.92	4.08	4.05	3.86	4.69	4.21	4.28
Puri & Sen	4.10	4.47	4.99	5.17	5.94	5.16	5.63	4.23	4.51	4.80	4.89	5.82	5.11	5.55
INT	5.30	4.92	4.75	4.88	5.46	4.88	5.18	5.10	4.86	4.49	4.16	4.92	4.34	4.43
ART INT	5.90	5.72	5.80	5.79	6.30	5.78	5.98	5.87	5.59	5.11	4.75	5.84	5.05	5.26
Koch	4.82	4.85	5.01	5.10	5.34	5.19	5.71	3.80	4.59	5.14	4.97	5.88	5.24	5.53
ATS	8.46	7.36	6.43	6.06	6.58	5.57	5.85	16.81	12.79	9.14	7.66	7.51	6.54	5.94
large design (4*6)														
parametric	5.46	6.01	6.29	6.24	6.36	6.89	5.90	5.29	5.71	5.85	5.88	5.25	5.73	4.98
parametric HF-adj														
van der Waerden	4.08	4.78	5.06	4.88	4.96	5.30	4.93	3.74	4.32	4.61	4.60	4.40	5.30	4.26
KWF	4.19	4.81	5.19	5.26	5.08	5.88	5.37	4.06	4.88	5.25	5.24	5.24	5.81	5.08
Puri & Sen INT	3.51	4.39	4.84	4.86	4.91	5.39	4.68	3.44	4.19	4.47	4.40	4.16	4.91	4.16
Puri & Sen	3.79	4.61	5.06	5.10	5.22	5.72	5.28	3.51	4.29	4.73	4.91	5.08	5.24	4.55
INT	4.99	5.42	5.38	5.22	5.12	5.51	4.76	4.61	4.91	4.84	4.71	4.42	5.06	4.21
ART INT	5.61	6.22	6.47	6.24	6.10	6.57	5.87	5.56	5.97	6.05	5.86	5.28	5.74	5.13
Koch	4.19	4.81	5.19	5.26	5.08	5.88	5.37	4.06	4.88	5.25	5.24	5.24	5.81	5.08
ATS	7.40	7.19	6.49	5.91	5.61	5.90	5.38	9.87	8.41	6.85	6.53	6.08	5.96	5.28



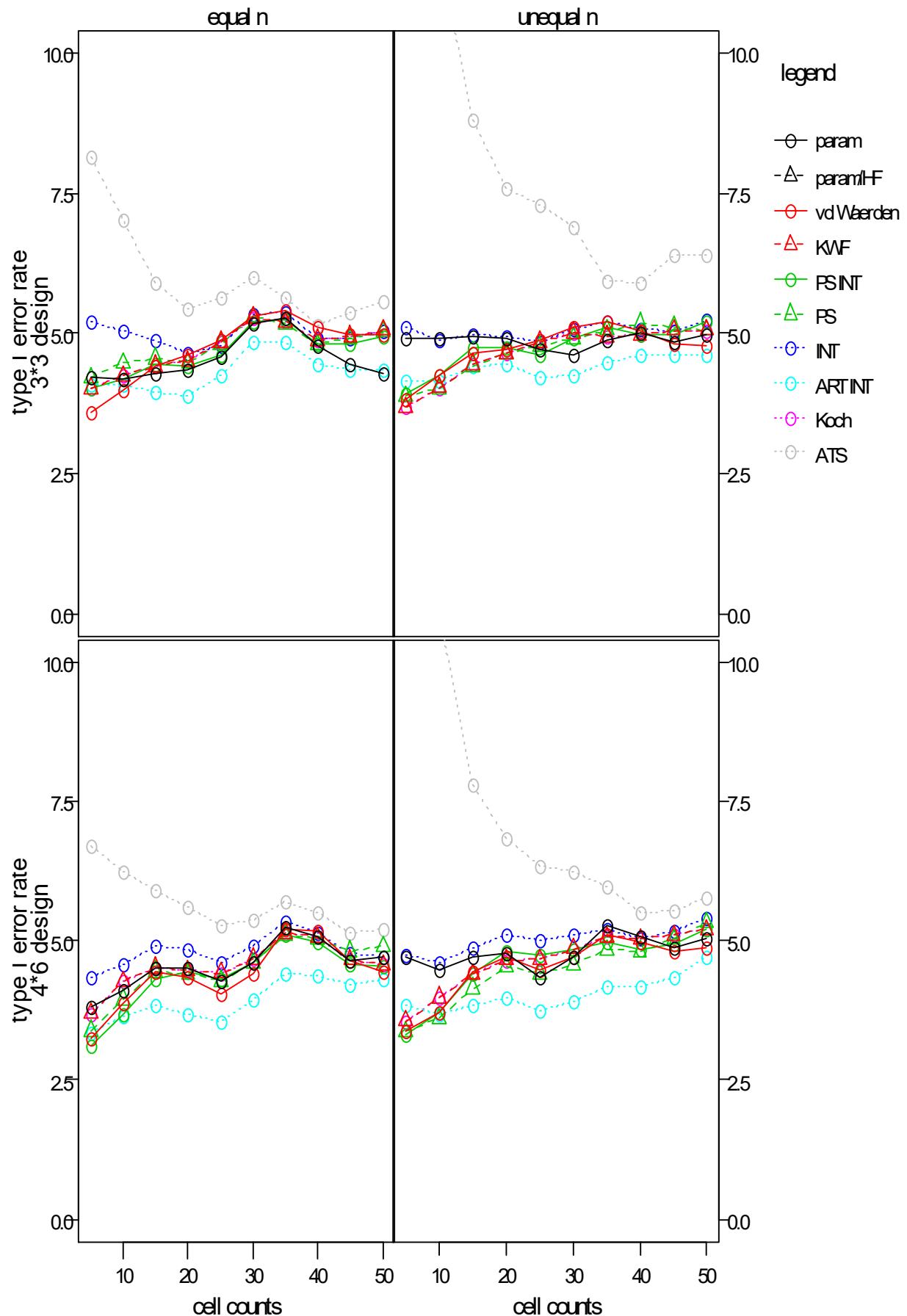
1. 1. 2. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.99	2.44	2.16	2.16	2.49	2.59	2.17	11.26	10.81	10.95	11.32	11.65	11.21	11.16
parametric HF-adj														
van der Waerden	2.68	2.61	2.45	2.21	2.28	2.42	2.01	6.86	7.71	8.55	8.89	9.28	9.30	9.80
KWF	2.90	2.91	2.88	2.88	3.17	3.40	3.05	5.49	6.45	7.38	7.54	7.62	7.97	8.25
Puri & Sen INT	2.40	2.21	2.16	2.12	2.15	2.38	2.06	7.24	7.99	8.79	9.22	9.59	9.38	9.42
Puri & Sen	2.94	2.85	3.00	3.00	3.07	3.59	2.85	6.26	6.60	7.21	7.64	7.96	7.91	8.05
INT	3.22	2.68	2.40	2.30	2.26	2.46	2.12	9.77	9.41	9.47	9.75	9.81	9.53	9.70
ART INT	3.32	2.75	2.40	2.24	2.26	2.45	2.08	10.00	9.64	9.60	9.89	10.00	9.55	9.64
Koch	2.90	2.91	2.88	2.88	3.17	3.40	3.05	5.49	6.45	7.38	7.54	7.62	7.97	8.25
ATS	12.99	10.03	7.36	6.49	6.21	6.33	5.41	18.27	13.61	9.64	8.16	7.56	6.62	6.53
large design (4*6)														
parametric	2.05	1.95	1.77	2.00	2.54	2.51	1.92	12.53	13.02	13.03	12.67	13.51	12.78	12.82
parametric HF-adj														
van der Waerden	1.95	1.89	1.74	1.96	2.50	2.25	1.77	7.01	8.50	9.19	9.24	10.44	9.95	10.30
KWF	2.37	2.48	2.41	2.54	3.38	3.36	2.60	6.30	7.59	7.70	7.39	8.49	8.38	8.80
Puri & Sen INT	1.60	1.64	1.51	1.66	2.14	1.92	1.47	7.47	8.80	9.40	9.27	10.50	10.06	10.28
Puri & Sen	2.17	2.29	2.29	2.50	3.26	3.11	2.85	5.79	6.86	7.15	7.11	8.45	8.19	8.52
INT	2.30	2.09	1.78	1.85	2.27	2.08	1.57	9.78	10.18	10.12	10.03	10.88	10.28	10.57
ART INT	2.23	2.01	1.73	1.84	2.25	2.01	1.62	10.38	10.64	10.29	9.91	10.91	10.41	10.62
Koch	2.37	2.48	2.41	2.54	3.38	3.36	2.60	6.30	7.59	7.70	7.39	8.49	8.38	8.80
ATS	11.00	8.76	6.84	6.05	5.70	5.90	5.43	14.08	11.44	8.69	7.33	7.11	6.34	6.33



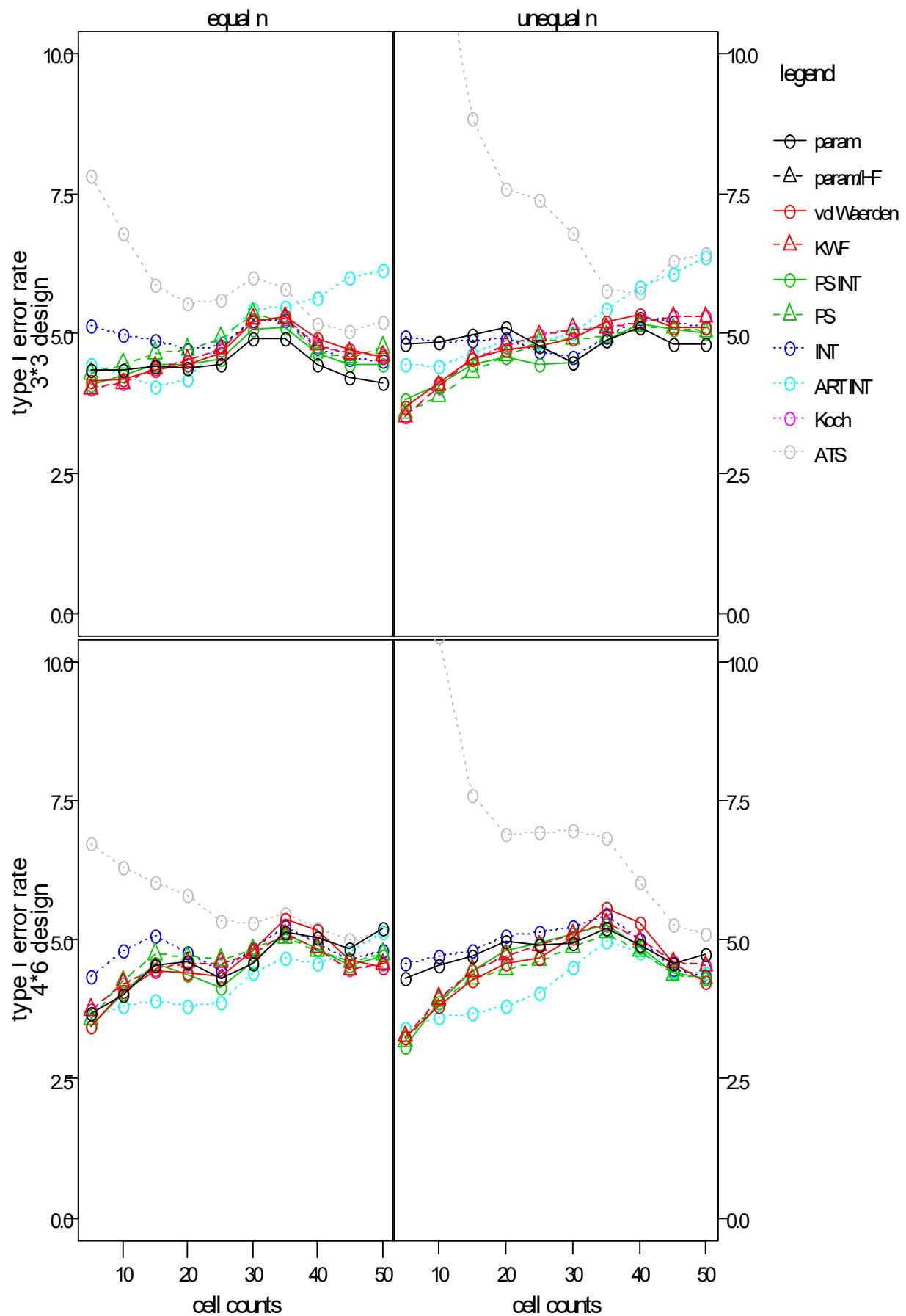
1. 1. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.23	4.17	4.29	4.36	5.16	4.79	4.27	4.90	4.91	4.94	4.91	4.60	5.01	4.99
parametric HF-adj														
van der Waerden	3.60	3.99	4.42	4.62	5.31	5.09	4.98	3.83	4.24	4.64	4.72	5.12	5.05	4.79
KWF	4.02	4.24	4.41	4.50	5.27	4.88	5.05	3.68	4.03	4.45	4.64	5.01	4.97	5.05
Puri & Sen INT	4.00	4.19	4.45	4.42	5.20	4.80	4.95	3.93	4.26	4.74	4.74	4.90	4.99	5.20
Puri & Sen	4.21	4.47	4.55	4.47	5.30	4.80	5.02	3.87	4.01	4.41	4.65	4.91	5.17	5.05
INT	5.22	5.04	4.88	4.65	5.35	4.90	5.05	5.09	4.89	4.96	4.94	5.07	5.06	5.24
ART INT	4.08	4.08	3.95	3.89	4.85	4.43	4.33	4.15	4.15	4.41	4.45	4.26	4.62	4.62
Koch	4.02	4.24	4.41	4.50	5.27	4.88	5.05	3.68	4.03	4.45	4.64	5.01	4.97	5.05
ATS	8.14	7.01	5.90	5.44	6.00	5.15	5.57	14.94	11.81	8.80	7.57	6.88	5.89	6.40
large design (4*6)														
parametric	3.80	4.11	4.50	4.50	4.62	5.08	4.72	4.70	4.49	4.69	4.76	4.72	5.06	5.04
parametric HF-adj														
van der Waerden	3.23	3.89	4.44	4.34	4.41	5.16	4.43	3.37	3.72	4.44	4.71	4.72	4.98	4.87
KWF	3.69	4.26	4.51	4.46	4.67	5.06	4.57	3.56	3.98	4.40	4.65	4.85	5.03	5.20
Puri & Sen INT	3.10	3.67	4.31	4.45	4.61	4.97	4.53	3.30	3.71	4.40	4.81	4.85	4.85	5.19
Puri & Sen	3.38	3.94	4.44	4.41	4.60	5.04	4.90	3.37	3.60	4.14	4.53	4.57	4.81	5.32
INT	4.35	4.59	4.89	4.84	4.90	5.15	4.72	4.74	4.61	4.88	5.10	5.12	5.05	5.42
ART INT	3.35	3.64	3.84	3.69	3.93	4.36	4.30	3.85	3.67	3.85	3.96	3.92	4.16	4.69
Koch	3.69	4.26	4.51	4.46	4.67	5.06	4.57	3.56	3.98	4.40	4.65	4.85	5.03	5.20
ATS	6.69	6.25	5.91	5.60	5.38	5.49	5.20	14.27	10.86	7.80	6.82	6.24	5.50	5.77



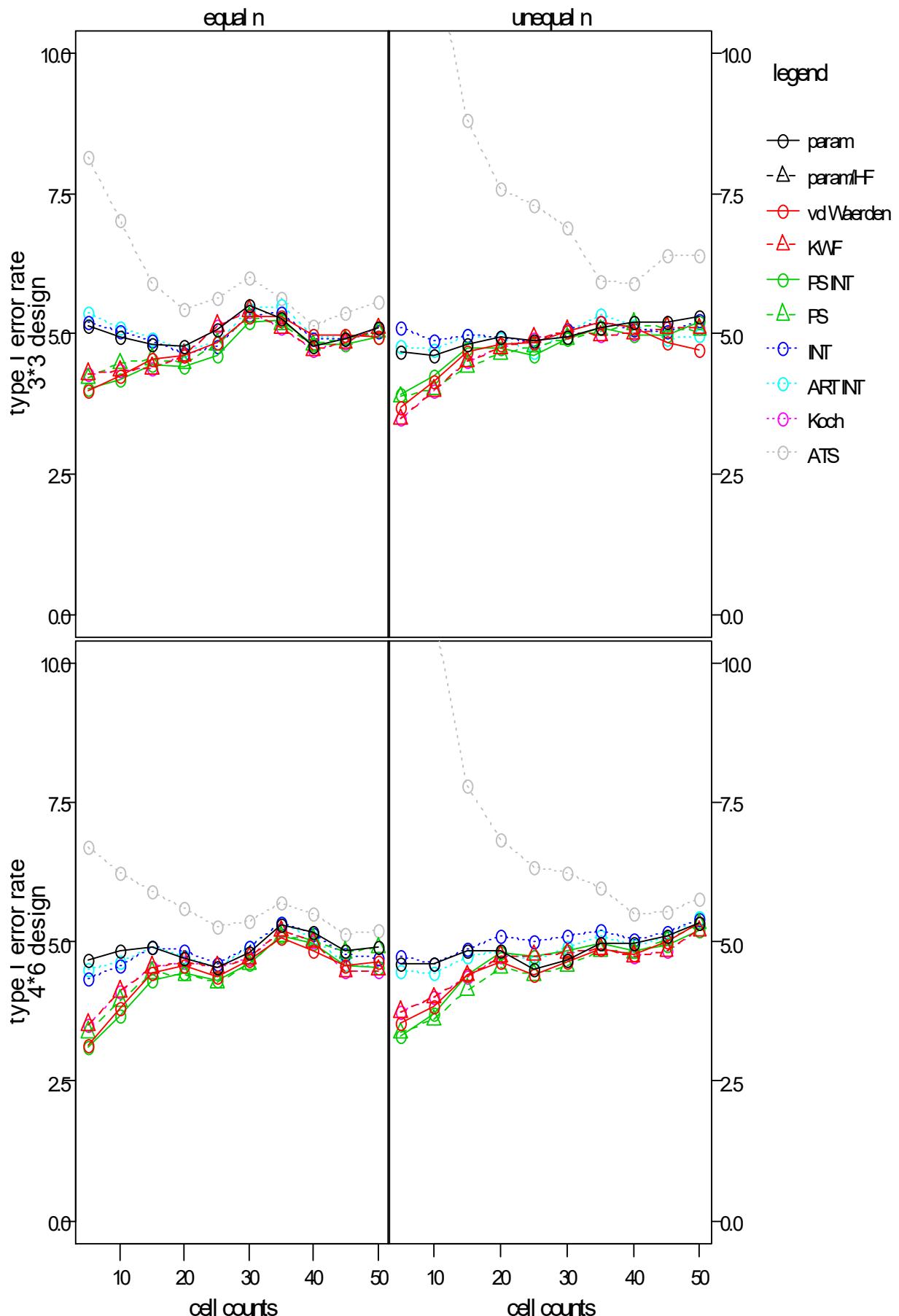
1. 1. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.35	4.33	4.41	4.39	4.90	4.46	4.12	4.80	4.84	4.97	5.10	4.47	5.09	4.82
parametric HF-adj														
van der Waerden	4.15	4.19	4.34	4.45	5.19	4.90	4.58	3.68	4.12	4.56	4.71	4.92	5.34	5.10
KWF	4.00	4.11	4.38	4.52	5.25	4.79	4.60	3.51	4.06	4.55	4.79	5.07	5.20	5.30
Puri & Sen INT	4.08	4.25	4.46	4.44	5.08	4.64	4.45	3.83	4.09	4.45	4.59	4.47	5.17	5.00
Puri & Sen	4.28	4.46	4.65	4.71	5.35	4.66	4.75	3.57	3.88	4.31	4.60	4.91	5.12	5.03
INT	5.15	4.97	4.88	4.70	5.25	4.75	4.52	4.95	4.83	4.88	4.92	4.59	5.28	5.10
ART INT	4.43	4.25	4.06	4.19	5.44	5.64	6.13	4.43	4.40	4.65	4.89	5.00	5.82	6.35
Koch	4.00	4.11	4.38	4.52	5.25	4.79	4.60	3.51	4.06	4.55	4.79	5.07	5.20	5.30
ATS	7.81	6.78	5.88	5.55	5.99	5.16	5.20	15.67	12.29	8.85	7.59	6.80	5.72	6.43
large design (4*6)														
parametric	3.66	4.01	4.54	4.62	4.58	5.04	5.19	4.30	4.54	4.71	4.98	4.94	4.90	4.74
parametric HF-adj														
van der Waerden	3.46	4.06	4.45	4.41	4.80	5.18	4.52	3.26	3.80	4.29	4.58	5.04	5.29	4.23
KWF	3.75	4.21	4.49	4.59	4.75	4.85	4.57	3.26	3.94	4.45	4.72	5.09	5.00	4.53
Puri & Sen INT	3.45	4.04	4.56	4.36	4.61	4.84	4.69	3.08	3.88	4.44	4.80	5.11	4.88	4.32
Puri & Sen	3.58	4.26	4.74	4.70	4.83	4.81	4.74	3.18	3.91	4.30	4.47	4.88	4.80	4.30
INT	4.33	4.79	5.08	4.76	4.84	4.95	4.82	4.58	4.72	4.79	5.06	5.25	5.01	4.35
ART INT	3.62	3.80	3.92	3.80	4.40	4.56	5.15	3.41	3.62	3.69	3.81	4.51	4.76	4.42
Koch	3.75	4.21	4.49	4.59	4.75	4.85	4.57	3.26	3.94	4.45	4.72	5.09	5.00	4.53
ATS	6.74	6.29	6.03	5.79	5.30	5.22	5.14	13.21	10.46	7.60	6.89	6.96	6.05	5.12



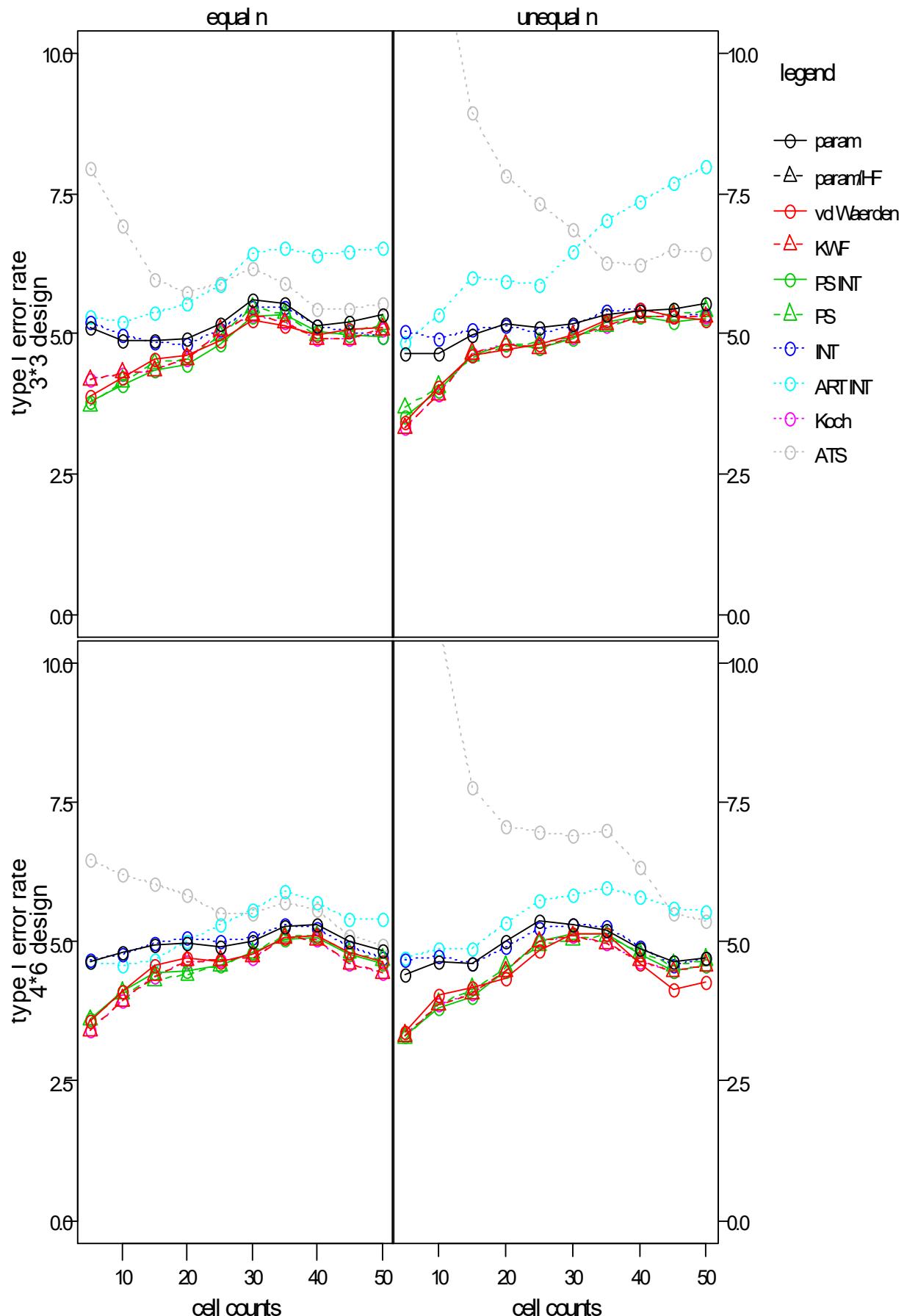
1. 1. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.15	4.95	4.80	4.76	5.50	4.79	5.12	4.67	4.61	4.81	4.94	4.94	5.20	5.30
parametric HF-adj														
van der Waerden	3.98	4.24	4.55	4.61	5.30	4.99	4.95	3.70	4.14	4.67	4.81	5.04	5.12	4.72
KWF	4.28	4.33	4.38	4.61	5.41	4.70	5.10	3.48	3.98	4.50	4.74	5.04	5.00	5.10
Puri & Sen INT	4.00	4.19	4.45	4.42	5.20	4.80	4.95	3.93	4.26	4.74	4.74	4.90	4.99	5.20
Puri & Sen	4.21	4.47	4.55	4.47	5.30	4.80	5.02	3.87	4.01	4.41	4.65	4.91	5.17	5.05
INT	5.22	5.04	4.88	4.65	5.35	4.90	5.05	5.09	4.89	4.96	4.94	5.07	5.06	5.24
ART INT	5.37	5.12	4.92	4.71	5.44	4.99	5.05	4.79	4.70	4.96	4.91	5.04	5.14	4.97
Koch	4.28	4.33	4.38	4.61	5.41	4.70	5.10	3.48	3.98	4.50	4.74	5.04	5.00	5.10
ATS	8.14	7.01	5.90	5.44	6.00	5.15	5.57	14.94	11.81	8.80	7.57	6.88	5.89	6.40
large design (4*6)														
parametric	4.67	4.85	4.92	4.72	4.81	5.17	4.90	4.60	4.62	4.83	4.84	4.67	4.96	5.35
parametric HF-adj														
van der Waerden	3.15	3.80	4.45	4.58	4.66	4.85	4.65	3.55	3.85	4.42	4.64	4.64	4.78	5.33
KWF	3.51	4.11	4.54	4.65	4.71	5.00	4.49	3.75	4.00	4.39	4.74	4.80	4.74	5.20
Puri & Sen INT	3.10	3.67	4.31	4.45	4.61	4.97	4.53	3.30	3.71	4.40	4.81	4.85	4.85	5.19
Puri & Sen	3.38	3.94	4.44	4.41	4.60	5.04	4.90	3.37	3.60	4.14	4.53	4.57	4.81	5.32
INT	4.35	4.59	4.89	4.84	4.90	5.15	4.72	4.74	4.61	4.88	5.10	5.12	5.05	5.42
ART INT	4.50	4.65	4.89	4.74	4.91	5.06	4.55	4.47	4.45	4.75	4.85	4.90	4.95	5.45
Koch	3.51	4.11	4.54	4.65	4.71	5.00	4.49	3.75	4.00	4.39	4.74	4.80	4.74	5.20
ATS	6.69	6.25	5.91	5.60	5.38	5.49	5.20	14.27	10.86	7.80	6.82	6.24	5.50	5.77



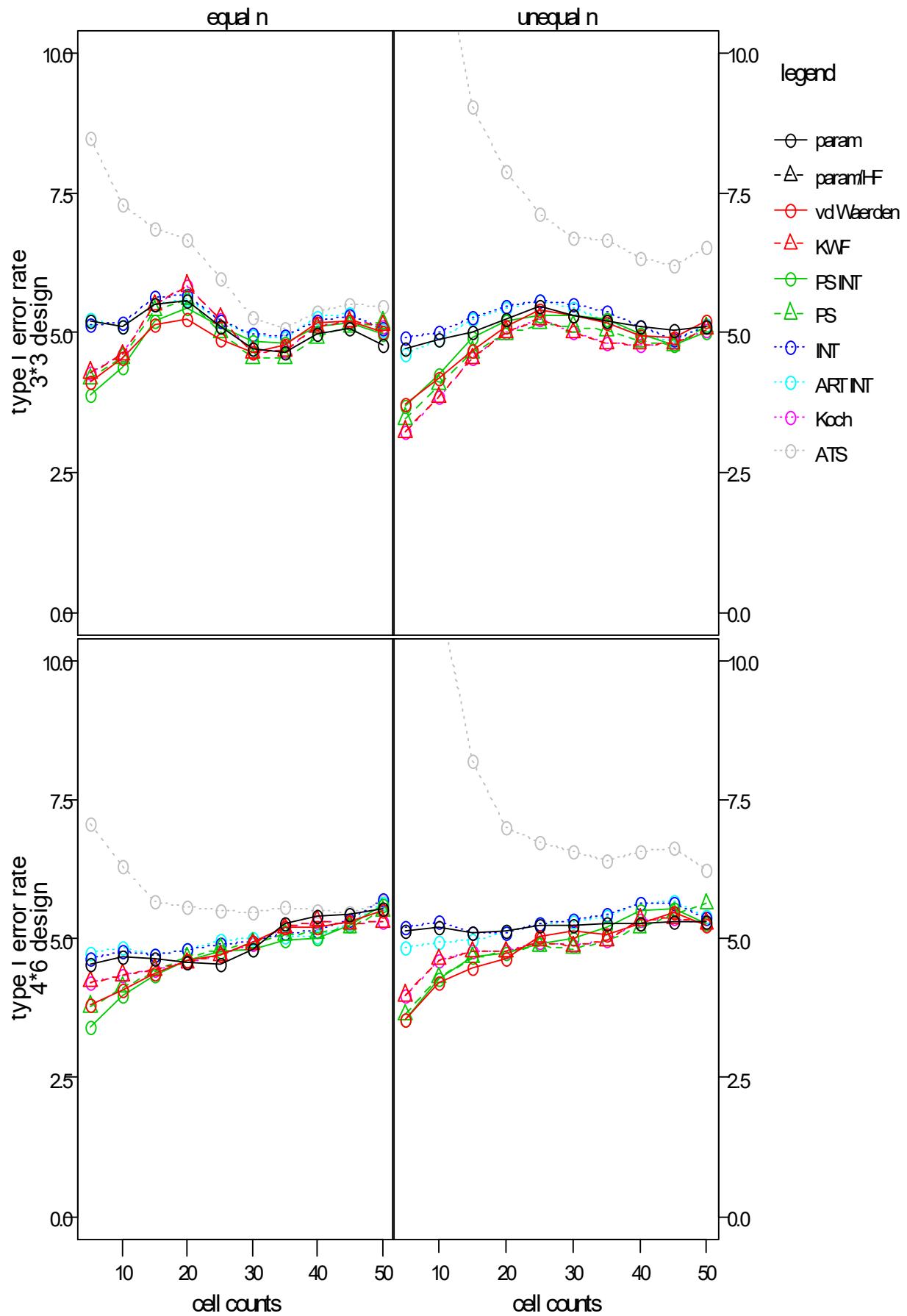
1. 1. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.09	4.89	4.86	4.91	5.59	5.15	5.33	4.63	4.65	4.99	5.16	5.16	5.41	5.52
parametric HF-adj														
van der Waerden	3.88	4.20	4.55	4.60	5.25	4.96	5.12	3.41	4.05	4.62	4.71	4.97	5.43	5.24
KWF	4.17	4.29	4.34	4.55	5.33	4.91	5.07	3.31	3.91	4.65	4.80	4.94	5.29	5.30
Puri & Sen INT	3.77	4.09	4.36	4.46	5.31	5.04	4.93	3.53	3.98	4.61	4.80	4.90	5.30	5.27
Puri & Sen	3.71	4.15	4.47	4.55	5.46	4.97	5.15	3.67	4.05	4.59	4.79	4.94	5.29	5.40
INT	5.22	4.99	4.84	4.82	5.47	5.14	4.95	5.04	4.91	5.08	5.15	5.14	5.44	5.33
ART INT	5.30	5.21	5.38	5.55	6.43	6.39	6.52	4.83	5.33	6.01	5.94	6.46	7.34	7.97
Koch	4.17	4.29	4.34	4.55	5.33	4.91	5.07	3.31	3.91	4.65	4.80	4.94	5.29	5.30
ATS	7.94	6.91	5.96	5.72	6.15	5.44	5.53	15.74	12.12	8.95	7.82	6.84	6.24	6.43
large design (4*6)														
parametric	4.63	4.79	4.94	4.96	5.00	5.30	4.83	4.41	4.64	4.61	5.00	5.31	4.88	4.72
parametric HF-adj														
van der Waerden	3.58	4.12	4.58	4.70	4.76	5.10	4.63	3.39	4.03	4.16	4.35	5.14	4.62	4.27
KWF	3.41	3.94	4.39	4.65	4.72	5.04	4.45	3.31	3.86	4.06	4.46	5.10	4.65	4.58
Puri & Sen INT	3.60	4.12	4.45	4.49	4.79	5.06	4.60	3.31	3.81	4.01	4.46	5.15	4.76	4.59
Puri & Sen	3.60	4.08	4.31	4.40	4.79	5.10	4.67	3.26	3.88	4.15	4.55	5.04	4.80	4.67
INT	4.67	4.78	4.98	5.06	5.08	5.25	4.72	4.68	4.75	4.61	4.91	5.29	4.89	4.70
ART INT	4.63	4.59	4.66	5.01	5.58	5.70	5.42	4.70	4.86	4.86	5.35	5.84	5.81	5.53
Koch	3.41	3.94	4.39	4.65	4.72	5.04	4.45	3.31	3.86	4.06	4.46	5.10	4.65	4.58
ATS	6.47	6.20	6.05	5.83	5.50	5.58	4.93	13.50	10.72	7.76	7.07	6.91	6.33	5.37



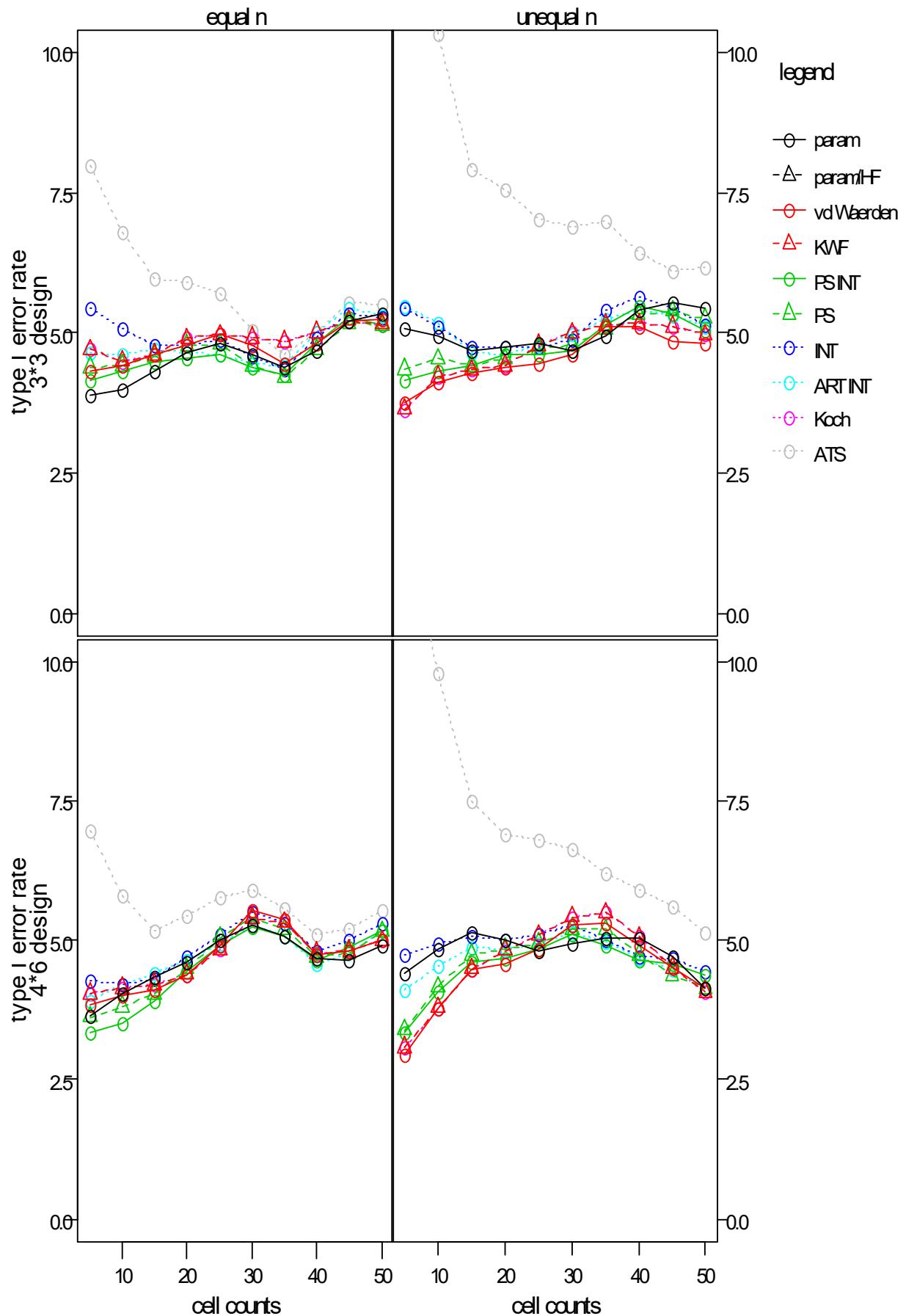
1. 1. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.22	5.11	5.49	5.56	4.70	4.97	4.78	4.70	4.86	5.00	5.25	5.32	5.11	5.12
parametric HF-adj														
van der Waerden	4.10	4.53	5.14	5.24	4.64	5.17	5.02	3.73	4.19	4.66	5.11	5.31	4.95	5.22
KWF	4.28	4.60	5.49	5.83	4.65	5.09	5.12	3.23	3.84	4.53	5.01	5.00	4.79	5.05
Puri & Sen INT	3.88	4.38	5.22	5.42	4.85	5.09	4.98	3.68	4.25	4.91	5.20	5.30	4.99	5.02
Puri & Sen	4.17	4.55	5.39	5.59	4.53	4.91	5.17	3.46	4.06	4.65	4.97	5.11	4.84	5.09
INT	5.14	5.16	5.64	5.66	4.97	5.21	5.08	4.92	5.00	5.26	5.46	5.50	5.09	5.10
ART INT	5.24	5.11	5.50	5.59	4.94	5.26	5.03	4.60	4.88	5.23	5.44	5.44	4.95	5.14
Koch	4.28	4.60	5.49	5.83	4.65	5.09	5.12	3.23	3.84	4.53	5.01	5.00	4.79	5.05
ATS	8.48	7.30	6.84	6.65	5.27	5.36	5.48	16.40	12.34	9.04	7.89	6.69	6.34	6.54
large design (4*6)														
parametric	4.53	4.66	4.64	4.57	4.79	5.42	5.53	5.13	5.19	5.11	5.15	5.25	5.28	5.32
parametric HF-adj														
van der Waerden	3.81	4.06	4.36	4.60	4.94	5.19	5.52	3.56	4.21	4.46	4.65	5.15	5.26	5.23
KWF	4.22	4.34	4.45	4.56	4.90	5.32	5.30	3.98	4.62	4.76	4.76	4.86	5.34	5.28
Puri & Sen INT	3.41	3.96	4.34	4.62	4.81	5.01	5.59	3.54	4.29	4.67	4.75	5.01	5.49	5.28
Puri & Sen	3.78	4.12	4.42	4.66	4.92	5.10	5.49	3.63	4.30	4.65	4.76	4.82	5.20	5.63
INT	4.65	4.76	4.69	4.79	4.95	5.15	5.70	5.20	5.30	5.12	5.10	5.33	5.65	5.38
ART INT	4.73	4.84	4.70	4.79	4.99	5.04	5.65	4.85	4.95	4.96	5.09	5.32	5.62	5.41
Koch	4.22	4.34	4.45	4.56	4.90	5.32	5.30	3.98	4.62	4.76	4.76	4.86	5.34	5.28
ATS	7.07	6.30	5.67	5.58	5.47	5.49	5.67	14.03	11.21	8.19	6.99	6.57	6.56	6.24



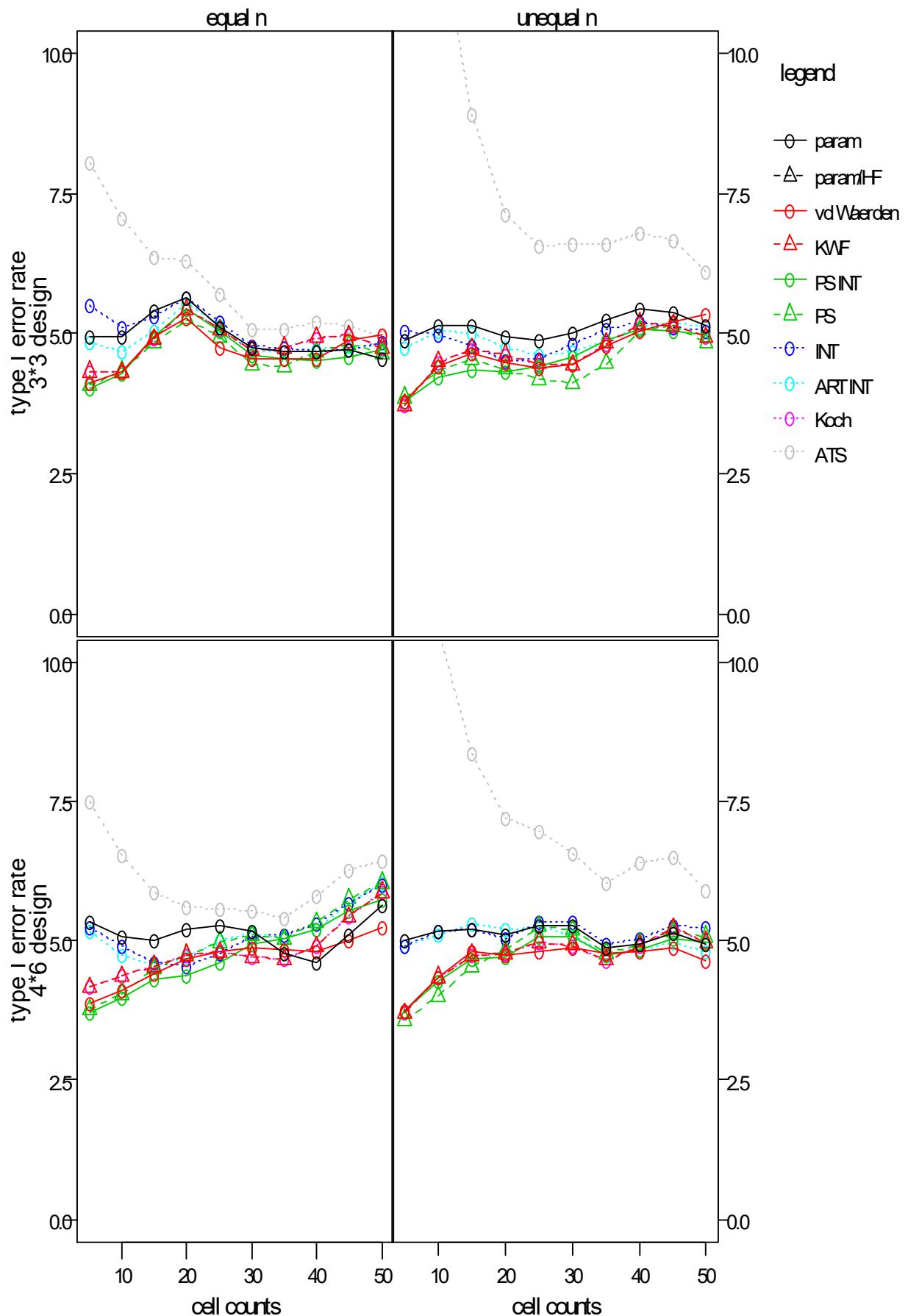
1. 1. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.87	3.99	4.32	4.65	4.62	4.69	5.33	5.08	4.95	4.69	4.75	4.67	5.40	5.45
parametric HF-adj														
van der Waerden	4.32	4.40	4.61	4.76	4.76	4.81	5.23	3.75	4.11	4.28	4.39	4.61	5.11	4.80
KWF	4.70	4.49	4.62	4.90	4.91	5.01	5.15	3.63	4.22	4.34	4.41	5.00	5.16	4.96
Puri & Sen INT	4.15	4.31	4.49	4.54	4.39	4.80	5.13	4.16	4.31	4.41	4.60	4.67	5.47	5.03
Puri & Sen	4.38	4.41	4.58	4.78	4.41	4.69	5.13	4.35	4.54	4.42	4.54	4.78	5.33	5.25
INT	5.44	5.06	4.79	4.78	4.59	4.90	5.26	5.45	5.12	4.74	4.75	4.89	5.64	5.13
ART INT	4.64	4.60	4.70	4.64	4.45	5.00	5.30	5.47	5.16	4.65	4.61	4.96	5.40	5.10
Koch	4.70	4.49	4.62	4.90	4.91	5.01	5.15	3.63	4.22	4.34	4.41	5.00	5.16	4.96
ATS	7.98	6.80	5.98	5.90	5.04	5.00	5.50	13.74	10.31	7.91	7.55	6.88	6.43	6.17
large design (4*6)														
parametric	3.65	4.04	4.35	4.60	5.27	4.68	4.92	4.41	4.84	5.15	4.99	4.94	5.03	4.13
parametric HF-adj														
van der Waerden	3.85	4.01	4.12	4.39	5.53	4.74	5.00	2.93	3.76	4.46	4.59	5.26	4.92	4.13
KWF	4.05	4.14	4.21	4.39	5.41	4.78	5.00	3.08	3.79	4.49	4.82	5.42	5.06	4.08
Puri & Sen INT	3.33	3.51	3.90	4.44	5.25	4.65	5.17	3.36	4.06	4.62	4.66	5.10	4.64	4.36
Puri & Sen	3.62	3.81	4.05	4.49	5.40	4.70	5.15	3.39	4.17	4.74	4.84	5.21	4.74	4.13
INT	4.27	4.20	4.30	4.71	5.50	4.79	5.32	4.73	4.94	5.06	5.00	5.26	4.72	4.43
ART INT	3.91	4.20	4.41	4.64	5.26	4.58	5.17	4.10	4.54	4.88	4.83	5.15	4.67	4.13
Koch	4.05	4.14	4.21	4.39	5.41	4.78	5.00	3.08	3.79	4.49	4.82	5.42	5.06	4.08
ATS	6.98	5.80	5.17	5.44	5.89	5.11	5.55	12.50	9.78	7.50	6.91	6.64	5.90	5.15



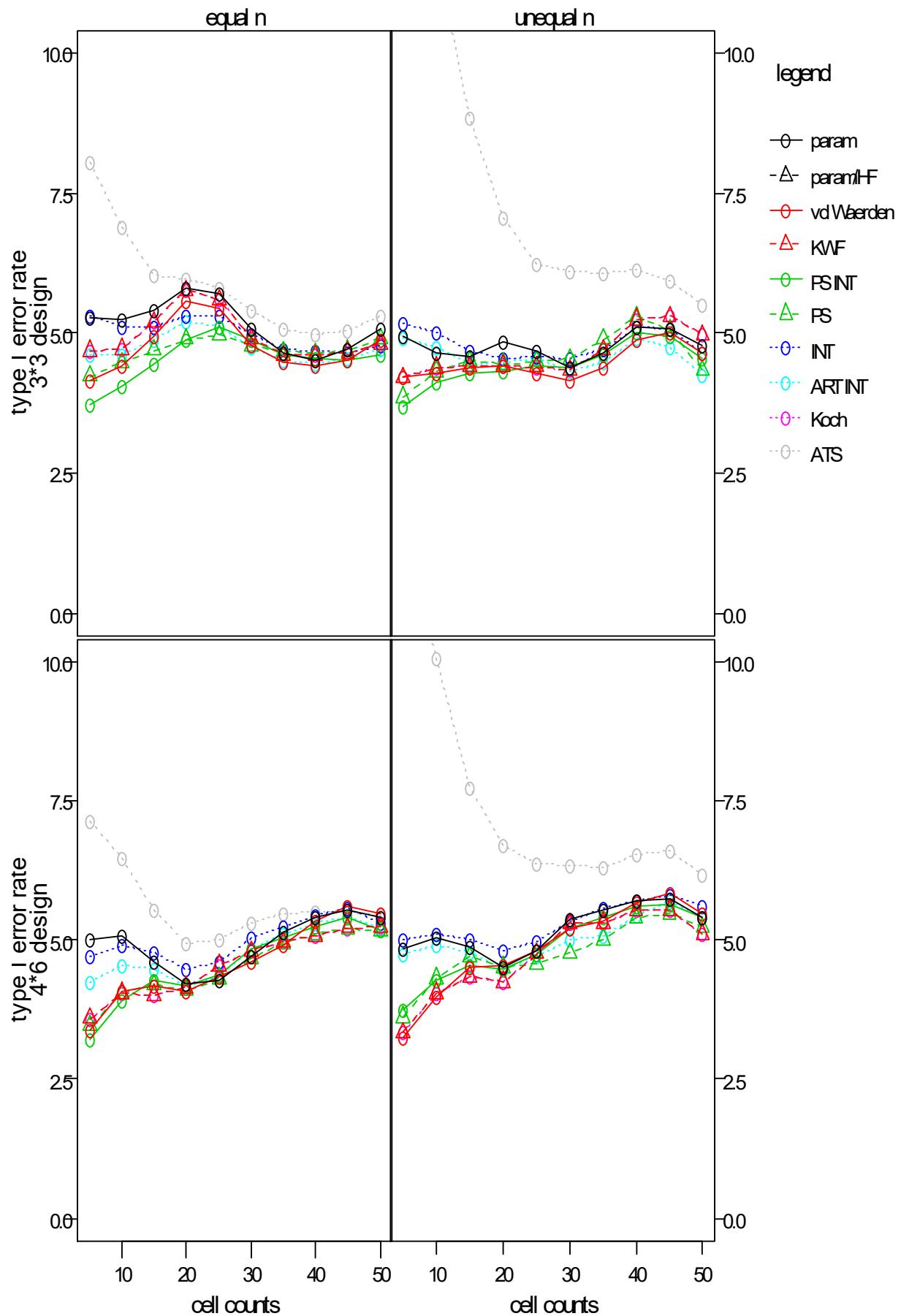
1. 1. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.95	4.95	5.39	5.64	4.73	4.68	4.53	4.86	5.15	5.15	4.95	5.00	5.44	5.13
parametric HF-adj														
van der Waerden	4.10	4.30	4.95	5.26	4.53	4.56	4.98	3.78	4.41	4.65	4.49	4.45	5.03	5.33
KWF	4.32	4.30	4.90	5.42	4.69	4.92	4.75	3.72	4.49	4.72	4.62	4.44	5.17	4.93
Puri & Sen INT	4.03	4.29	4.95	5.45	4.60	4.51	4.70	3.78	4.21	4.35	4.31	4.59	5.06	4.98
Puri & Sen	4.07	4.31	4.84	5.25	4.44	4.66	4.63	3.85	4.36	4.54	4.36	4.10	5.05	4.83
INT	5.49	5.12	5.29	5.64	4.76	4.67	4.83	5.05	4.99	4.76	4.51	4.80	5.20	5.05
ART INT	4.84	4.69	5.05	5.54	4.69	4.71	4.77	4.73	5.03	5.00	4.74	4.67	5.12	5.12
Koch	4.32	4.30	4.90	5.42	4.69	4.92	4.75	3.72	4.49	4.72	4.62	4.44	5.17	4.93
ATS	8.06	7.06	6.36	6.29	5.08	5.19	4.93	15.32	12.21	8.91	7.11	6.59	6.78	6.08
large design (4*6)														
parametric	5.34	5.08	5.01	5.19	5.16	4.62	5.64	5.02	5.17	5.21	5.09	5.26	4.94	4.95
parametric HF-adj														
van der Waerden	3.86	4.12	4.40	4.67	4.88	4.79	5.25	3.73	4.35	4.80	4.75	4.86	4.82	4.65
KWF	4.16	4.36	4.55	4.74	4.71	4.90	5.87	3.70	4.34	4.74	4.76	4.92	4.91	4.98
Puri & Sen INT	3.72	3.96	4.30	4.39	4.95	5.21	5.74	3.75	4.29	4.66	4.71	5.08	4.85	4.96
Puri & Sen	3.77	4.04	4.50	4.75	5.09	5.33	6.04	3.58	4.00	4.55	4.83	5.20	4.95	5.08
INT	5.25	4.90	4.61	4.54	5.08	5.29	6.00	4.90	5.16	5.20	5.04	5.34	5.04	5.23
ART INT	5.17	4.74	4.54	4.72	5.14	5.22	6.02	4.92	5.11	5.30	5.19	5.11	4.85	4.80
Koch	4.16	4.36	4.55	4.74	4.71	4.90	5.87	3.70	4.34	4.74	4.76	4.92	4.91	4.98
ATS	7.51	6.55	5.86	5.60	5.54	5.79	6.45	12.71	10.59	8.36	7.21	6.58	6.39	5.91



1. 1. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.28	5.25	5.41	5.80	5.06	4.51	5.07	4.94	4.64	4.58	4.83	4.38	5.10	4.76
parametric HF-adj														
van der Waerden	4.15	4.40	4.94	5.56	4.78	4.41	4.87	4.20	4.28	4.38	4.41	4.16	4.89	4.63
KWF	4.68	4.71	5.19	5.76	4.90	4.60	4.80	4.21	4.38	4.40	4.41	4.34	5.24	4.96
Puri & Sen INT	3.71	4.04	4.44	4.88	4.89	4.54	4.62	3.68	4.10	4.29	4.32	4.39	5.01	4.55
Puri & Sen	4.23	4.47	4.69	4.89	4.76	4.64	4.90	3.86	4.32	4.50	4.45	4.54	5.30	4.34
INT	5.32	5.11	5.12	5.30	4.97	4.66	4.79	5.17	5.01	4.69	4.55	4.53	5.12	4.65
ART INT	4.60	4.61	4.89	5.20	4.75	4.44	4.72	4.90	4.74	4.45	4.49	4.30	4.91	4.25
Koch	4.68	4.71	5.19	5.76	4.90	4.60	4.80	4.21	4.38	4.40	4.41	4.34	5.24	4.96
ATS	8.06	6.88	6.04	5.95	5.39	4.96	5.30	14.57	11.72	8.85	7.07	6.09	6.14	5.50
large design (4*6)														
parametric	5.00	5.06	4.61	4.22	4.71	5.41	5.40	4.85	5.03	4.88	4.51	5.38	5.71	5.40
parametric HF-adj														
van der Waerden	3.39	4.08	4.18	4.09	4.61	5.35	5.48	3.23	3.98	4.50	4.54	5.20	5.66	5.48
KWF	3.59	4.04	4.01	4.14	4.80	5.08	5.23	3.34	4.05	4.35	4.25	5.29	5.53	5.11
Puri & Sen INT	3.21	3.90	4.26	4.17	4.84	5.25	5.16	3.75	4.29	4.54	4.48	5.19	5.59	5.40
Puri & Sen	3.46	4.03	4.20	4.09	4.66	5.11	5.15	3.61	4.31	4.70	4.51	4.76	5.39	5.23
INT	4.71	4.90	4.78	4.47	5.04	5.44	5.30	5.00	5.10	4.99	4.80	5.35	5.71	5.61
ART INT	4.23	4.55	4.47	4.16	4.83	5.31	5.20	4.73	4.92	4.78	4.49	5.00	5.44	5.41
Koch	3.59	4.04	4.01	4.14	4.80	5.08	5.23	3.34	4.05	4.35	4.25	5.29	5.53	5.11
ATS	7.14	6.47	5.54	4.95	5.30	5.50	5.43	12.57	10.06	7.74	6.69	6.35	6.55	6.16

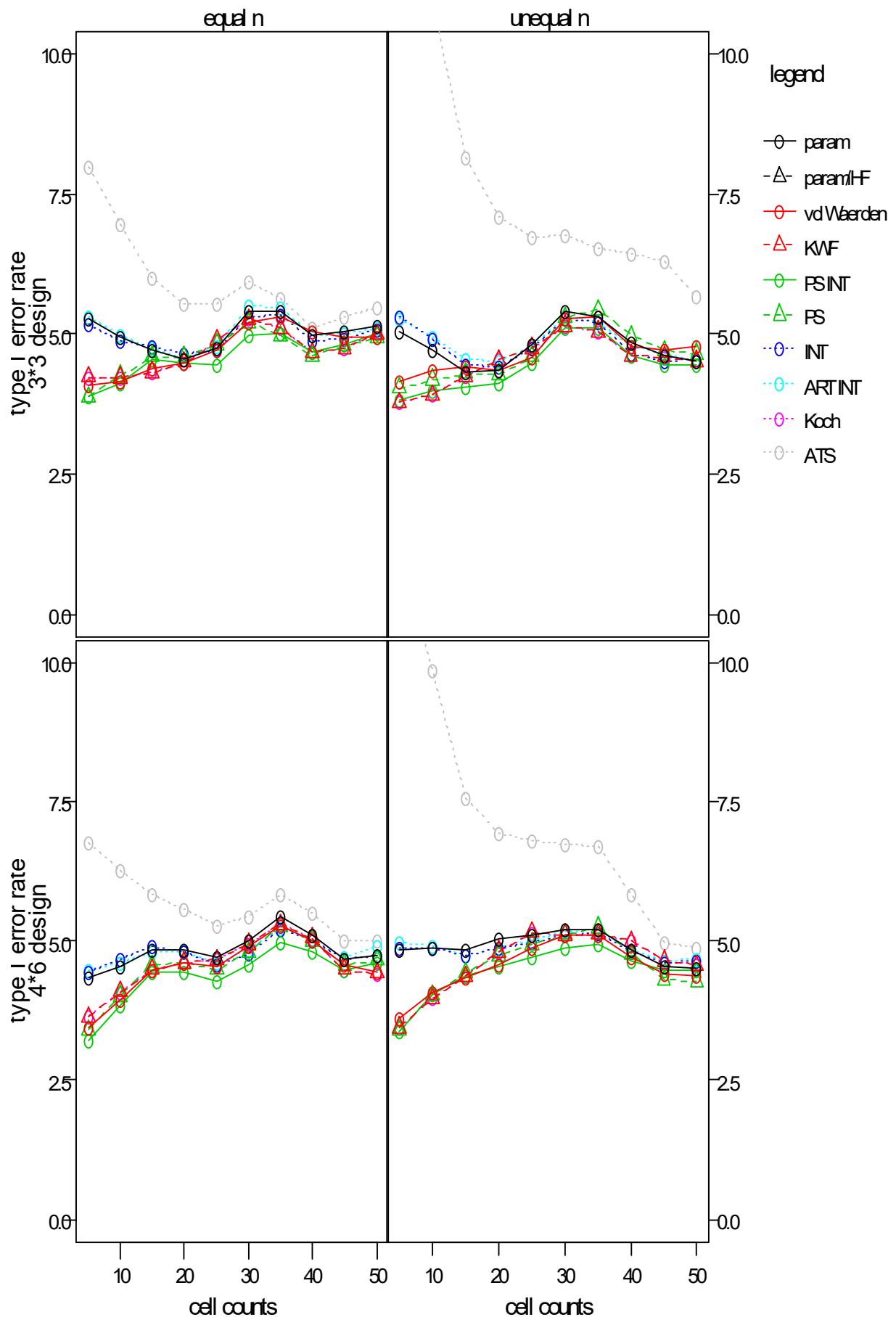


1. 2. Main effect A - B significant (effects $b_j=0.5*s$)

1. 2. 1. equal correlations on B ($r=0.3$)

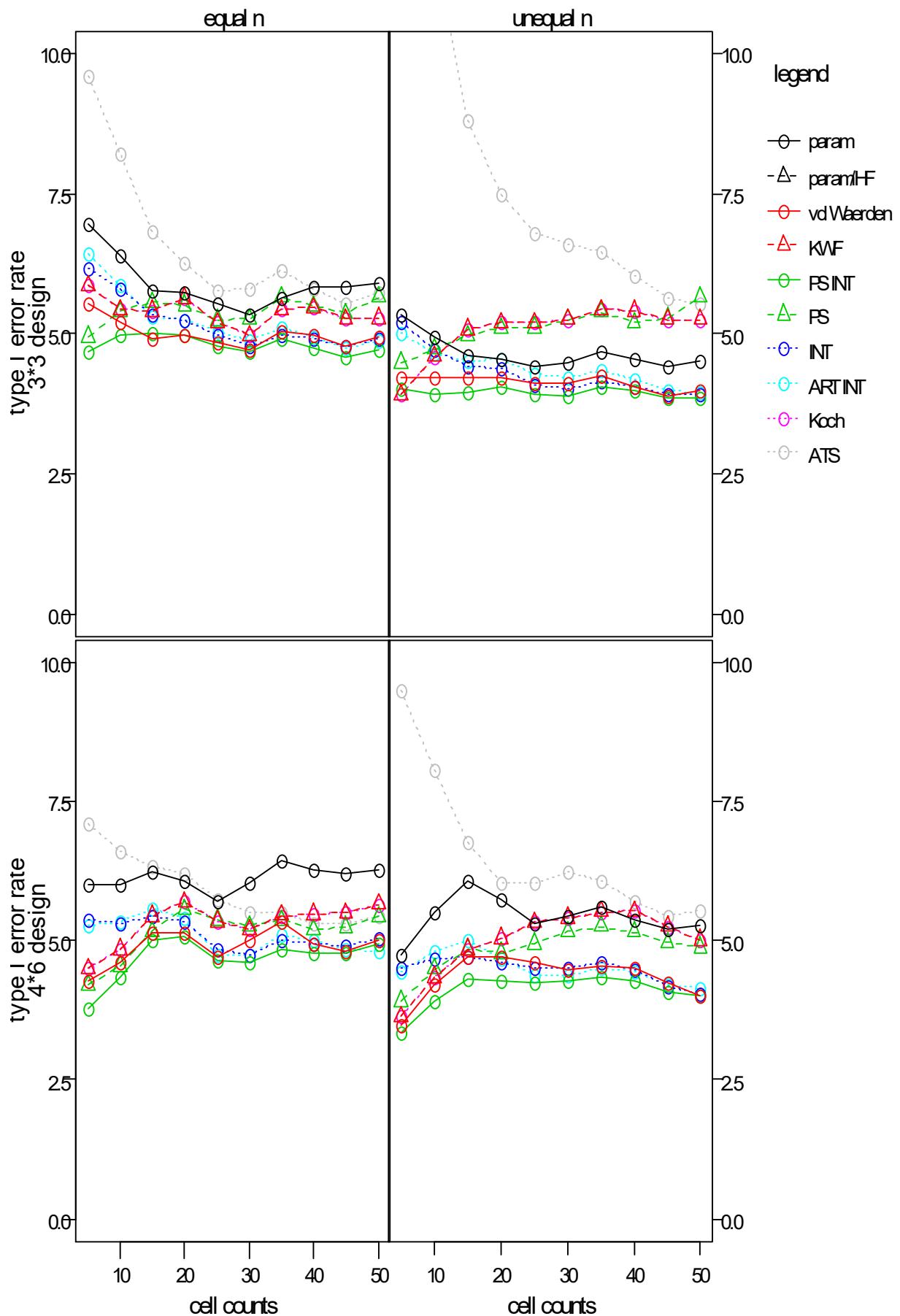
1. 2. 1. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.27	4.95	4.72	4.55	5.41	4.97	5.13	5.03	4.71	4.31	4.34	5.40	4.84	4.52
parametric HF-adj														
van der Waerden	4.08	4.15	4.38	4.47	5.21	5.03	4.93	4.15	4.33	4.41	4.36	5.26	4.78	4.78
KWF	4.23	4.22	4.31	4.49	5.26	4.66	5.00	3.78	3.91	4.24	4.54	5.14	4.62	4.51
Puri & Sen INT	3.87	4.12	4.54	4.49	4.97	4.67	5.00	3.83	3.98	4.05	4.12	5.11	4.60	4.43
Puri & Sen	3.87	4.25	4.59	4.59	5.20	4.60	4.95	4.03	4.18	4.29	4.28	5.29	4.96	4.65
INT	5.17	4.89	4.78	4.64	5.29	4.86	5.08	5.32	4.90	4.44	4.40	5.28	4.65	4.55
ART INT	5.29	4.97	4.74	4.55	5.50	4.96	5.10	5.28	4.94	4.56	4.50	5.29	4.79	4.51
Koch	4.23	4.22	4.31	4.49	5.26	4.66	5.00	3.78	3.91	4.24	4.54	5.14	4.62	4.51
ATS	7.97	6.95	6.01	5.52	5.94	5.10	5.48	14.17	10.91	8.15	7.10	6.77	6.42	5.68
large design (4*6)														
parametric	4.35	4.55	4.84	4.85	5.01	5.11	4.75	4.83	4.86	4.85	5.04	5.19	4.84	4.52
parametric HF-adj														
van der Waerden	3.45	3.94	4.47	4.60	4.91	5.00	4.45	3.60	4.06	4.34	4.59	5.11	4.71	4.37
KWF	3.63	4.09	4.49	4.61	4.94	5.05	4.42	3.45	3.96	4.36	4.81	5.11	5.00	4.57
Puri & Sen INT	3.21	3.84	4.44	4.45	4.56	4.79	4.60	3.38	4.04	4.36	4.54	4.88	4.64	4.48
Puri & Sen	3.40	4.01	4.56	4.61	4.80	5.01	4.65	3.39	4.03	4.43	4.74	5.12	4.76	4.28
INT	4.43	4.67	4.89	4.81	4.76	5.00	4.75	4.88	4.86	4.74	4.86	5.10	4.80	4.63
ART INT	4.47	4.61	4.80	4.79	4.85	5.01	4.89	4.97	4.89	4.74	4.88	5.16	4.84	4.67
Koch	3.63	4.09	4.49	4.61	4.94	5.05	4.42	3.45	3.96	4.36	4.81	5.11	5.00	4.57
ATS	6.75	6.26	5.84	5.58	5.44	5.50	4.99	11.93	9.86	7.55	6.94	6.73	5.84	4.88



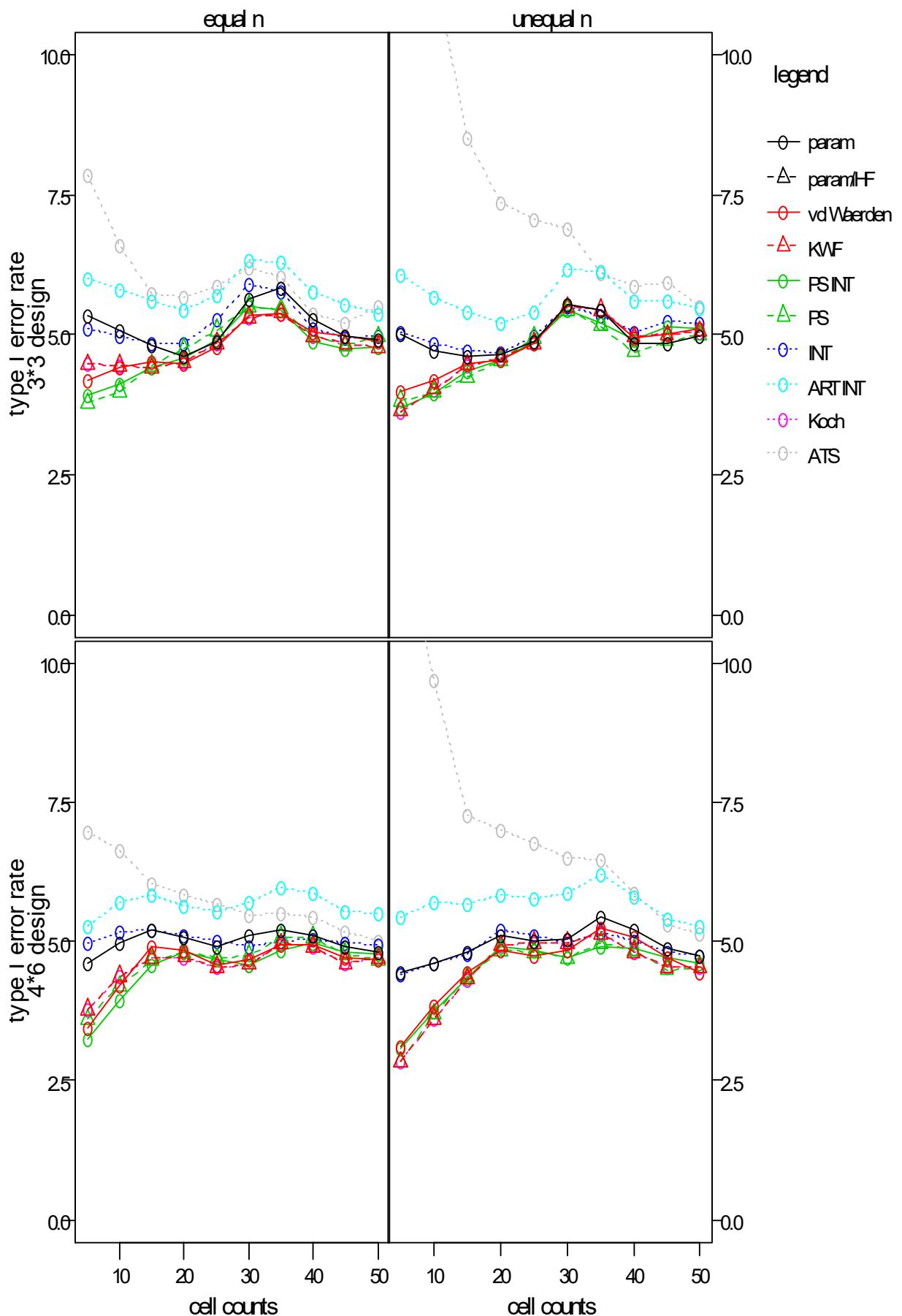
1. 2. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.95	6.38	5.75	5.72	5.34	5.84	5.90	5.34	4.94	4.61	4.54	4.49	4.53	4.50
parametric HF-adj														
van der Waerden	5.53	5.20	4.91	4.99	4.72	4.97	4.94	4.20	4.22	4.20	4.21	4.12	4.06	3.97
KWF	5.85	5.42	5.40	5.64	4.97	5.46	5.28	3.91	4.59	5.08	5.19	5.25	5.41	5.25
Puri & Sen INT	4.66	4.99	5.00	4.99	4.68	4.74	4.72	4.00	3.91	3.95	4.06	3.88	3.98	3.85
Puri & Sen	4.95	5.39	5.56	5.50	5.26	5.49	5.65	4.48	4.72	4.96	5.09	5.25	5.20	5.65
INT	6.17	5.81	5.34	5.25	4.77	4.90	4.92	5.22	4.70	4.41	4.38	4.00	4.05	3.93
ART INT	6.44	5.86	5.29	5.25	4.88	4.94	4.88	5.02	4.64	4.50	4.55	4.20	4.17	3.95
Koch	5.85	5.42	5.40	5.64	4.97	5.46	5.28	3.91	4.59	5.08	5.19	5.25	5.41	5.25
ATS	9.61	8.21	6.82	6.25	5.79	5.81	5.74	15.54	11.96	8.79	7.50	6.59	6.04	5.55
large design (4*6)														
parametric	6.00	6.01	6.22	6.06	6.05	6.27	6.27	4.75	5.50	6.08	5.73	5.43	5.36	5.28
parametric HF-adj														
van der Waerden	4.26	4.61	5.14	5.14	4.99	4.95	5.02	3.48	4.20	4.71	4.71	4.49	4.51	4.00
KWF	4.50	4.84	5.44	5.69	5.19	5.47	5.65	3.63	4.34	4.84	5.04	5.41	5.53	5.01
Puri & Sen INT	3.76	4.34	5.01	5.06	4.61	4.78	4.93	3.33	3.92	4.32	4.29	4.26	4.26	4.00
Puri & Sen	4.20	4.55	5.16	5.56	5.26	5.19	5.43	3.91	4.49	4.84	4.78	5.16	5.15	4.87
INT	5.38	5.30	5.44	5.35	4.75	4.94	5.05	4.50	4.68	4.72	4.60	4.50	4.46	4.05
ART INT	5.27	5.34	5.56	5.39	4.74	4.99	4.82	4.43	4.80	5.00	4.66	4.38	4.44	4.13
Koch	4.50	4.84	5.44	5.69	5.19	5.47	5.65	3.63	4.34	4.84	5.04	5.41	5.53	5.01
ATS	7.10	6.60	6.34	6.20	5.50	5.30	5.45	9.50	8.06	6.78	6.03	6.24	5.70	5.54



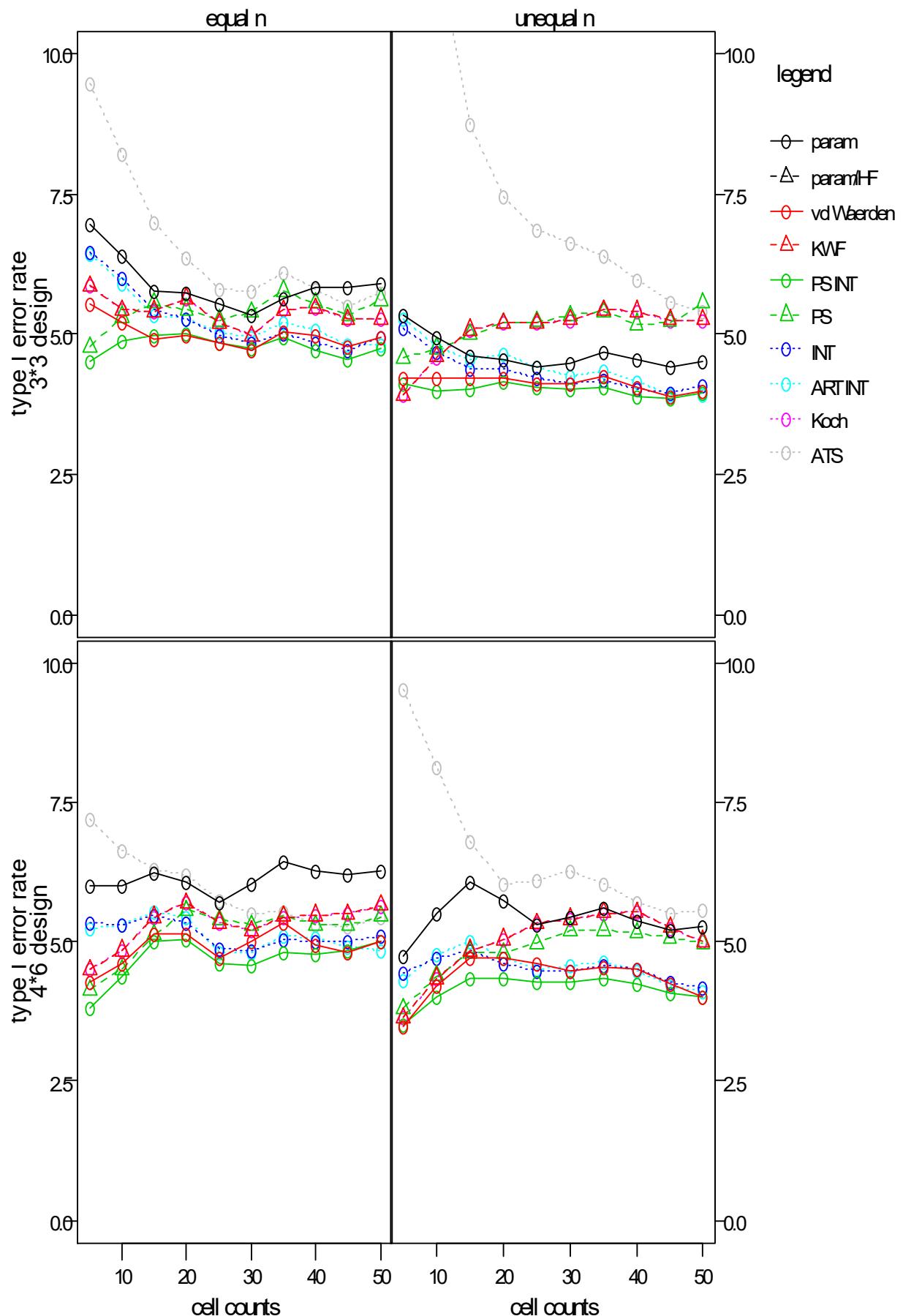
1. 2. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.06	4.80	4.62	5.64	5.28	4.92	5.02	4.71	4.61	4.64	5.53	4.84	4.97
parametric HF-adj														
van der Waerden	4.18	4.40	4.51	4.49	5.34	5.04	4.86	3.97	4.19	4.49	4.54	5.54	4.94	5.10
KWF	4.47	4.45	4.40	4.51	5.31	4.97	4.78	3.63	4.03	4.46	4.59	5.49	4.96	5.05
Puri & Sen INT	3.92	4.11	4.41	4.59	5.49	4.88	4.77	3.67	3.94	4.35	4.53	5.42	4.90	5.11
Puri & Sen	3.77	3.99	4.45	4.75	5.50	4.96	4.97	3.82	3.96	4.24	4.54	5.44	4.69	5.00
INT	5.12	4.98	4.83	4.85	5.89	5.10	4.98	5.05	4.83	4.71	4.69	5.50	5.05	5.20
ART INT	5.99	5.80	5.61	5.43	6.34	5.78	5.38	6.07	5.68	5.39	5.21	6.16	5.61	5.46
Koch	4.47	4.45	4.40	4.51	5.31	4.97	4.78	3.63	4.03	4.46	4.59	5.49	4.96	5.05
ATS	7.86	6.60	5.73	5.66	6.20	5.38	5.49	15.39	11.57	8.50	7.35	6.89	5.85	5.51
large design (4*6)														
parametric	4.61	4.96	5.20	5.06	5.09	5.12	4.80	4.45	4.62	4.79	5.11	5.04	5.22	4.73
parametric HF-adj														
van der Waerden	3.44	4.22	4.89	4.85	4.67	4.93	4.67	3.11	3.85	4.44	4.84	4.84	5.07	4.45
KWF	3.78	4.38	4.71	4.72	4.59	4.91	4.70	2.84	3.61	4.32	4.93	4.97	4.81	4.53
Puri & Sen INT	3.23	3.94	4.59	4.79	4.58	4.96	4.77	3.09	3.73	4.34	4.90	4.69	4.86	4.62
Puri & Sen	3.60	4.20	4.65	4.79	4.74	5.07	4.67	2.83	3.69	4.36	4.84	4.69	4.84	4.54
INT	4.98	5.18	5.19	5.12	4.89	5.05	4.95	4.40	4.61	4.78	5.19	4.96	5.01	4.75
ART INT	5.28	5.69	5.83	5.65	5.71	5.86	5.49	5.45	5.69	5.66	5.84	5.88	5.80	5.28
Koch	3.78	4.38	4.71	4.72	4.59	4.91	4.70	2.84	3.61	4.32	4.93	4.97	4.81	4.53
ATS	6.97	6.64	6.05	5.85	5.46	5.45	5.00	12.41	9.69	7.28	7.00	6.50	5.86	5.15



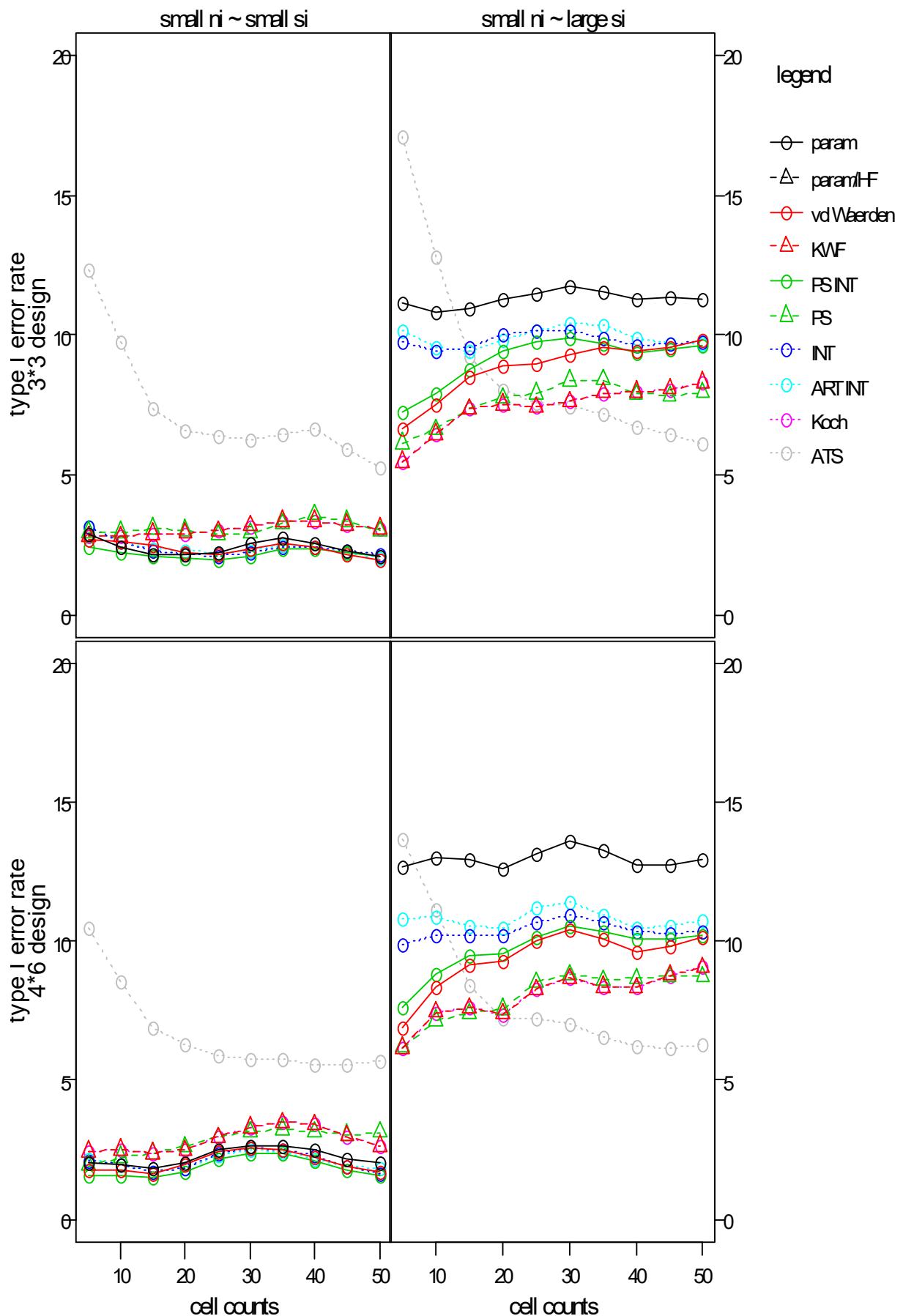
1. 2. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.95	6.38	5.75	5.72	5.34	5.84	5.90	5.34	4.94	4.61	4.54	4.49	4.53	4.50
parametric HF-adj														
van der Waerden	5.53	5.20	4.91	4.99	4.72	4.97	4.94	4.20	4.22	4.20	4.21	4.12	4.06	3.97
KWF	5.85	5.42	5.40	5.64	4.97	5.46	5.28	3.91	4.59	5.08	5.19	5.25	5.41	5.25
Puri & Sen INT	4.51	4.88	4.99	5.00	4.75	4.71	4.75	4.12	3.99	4.01	4.14	4.03	3.89	3.95
Puri & Sen	4.76	5.31	5.55	5.44	5.39	5.55	5.60	4.57	4.74	4.99	5.19	5.33	5.17	5.55
INT	6.47	6.00	5.44	5.28	4.83	4.84	4.95	5.12	4.67	4.39	4.38	4.12	4.02	4.07
ART INT	6.43	5.91	5.35	5.26	4.94	5.07	4.82	5.27	4.76	4.54	4.65	4.25	4.16	3.93
Koch	5.85	5.42	5.40	5.64	4.97	5.46	5.28	3.91	4.59	5.08	5.19	5.25	5.41	5.25
ATS	9.46	8.20	7.00	6.36	5.76	5.80	5.72	15.46	11.94	8.74	7.44	6.64	5.95	5.40
large design (4*6)														
parametric	6.00	6.01	6.22	6.06	6.05	6.27	6.27	4.75	5.50	6.08	5.73	5.43	5.36	5.28
parametric HF-adj														
van der Waerden	4.26	4.61	5.14	5.14	4.99	4.95	5.02	3.48	4.20	4.71	4.71	4.49	4.51	4.00
KWF	4.50	4.84	5.44	5.69	5.19	5.47	5.65	3.63	4.34	4.84	5.04	5.41	5.53	5.01
Puri & Sen INT	3.80	4.38	5.00	5.03	4.59	4.78	5.00	3.50	4.01	4.35	4.33	4.29	4.25	4.02
Puri & Sen	4.13	4.50	5.12	5.56	5.30	5.29	5.45	3.80	4.39	4.81	4.79	5.19	5.15	4.98
INT	5.33	5.29	5.46	5.35	4.85	4.99	5.12	4.45	4.70	4.83	4.62	4.49	4.51	4.18
ART INT	5.25	5.30	5.55	5.44	4.79	5.08	4.85	4.30	4.77	5.00	4.69	4.56	4.46	4.10
Koch	4.50	4.84	5.44	5.69	5.19	5.47	5.65	3.63	4.34	4.84	5.04	5.41	5.53	5.01
ATS	7.21	6.62	6.31	6.19	5.51	5.30	5.43	9.54	8.14	6.79	6.05	6.28	5.70	5.57



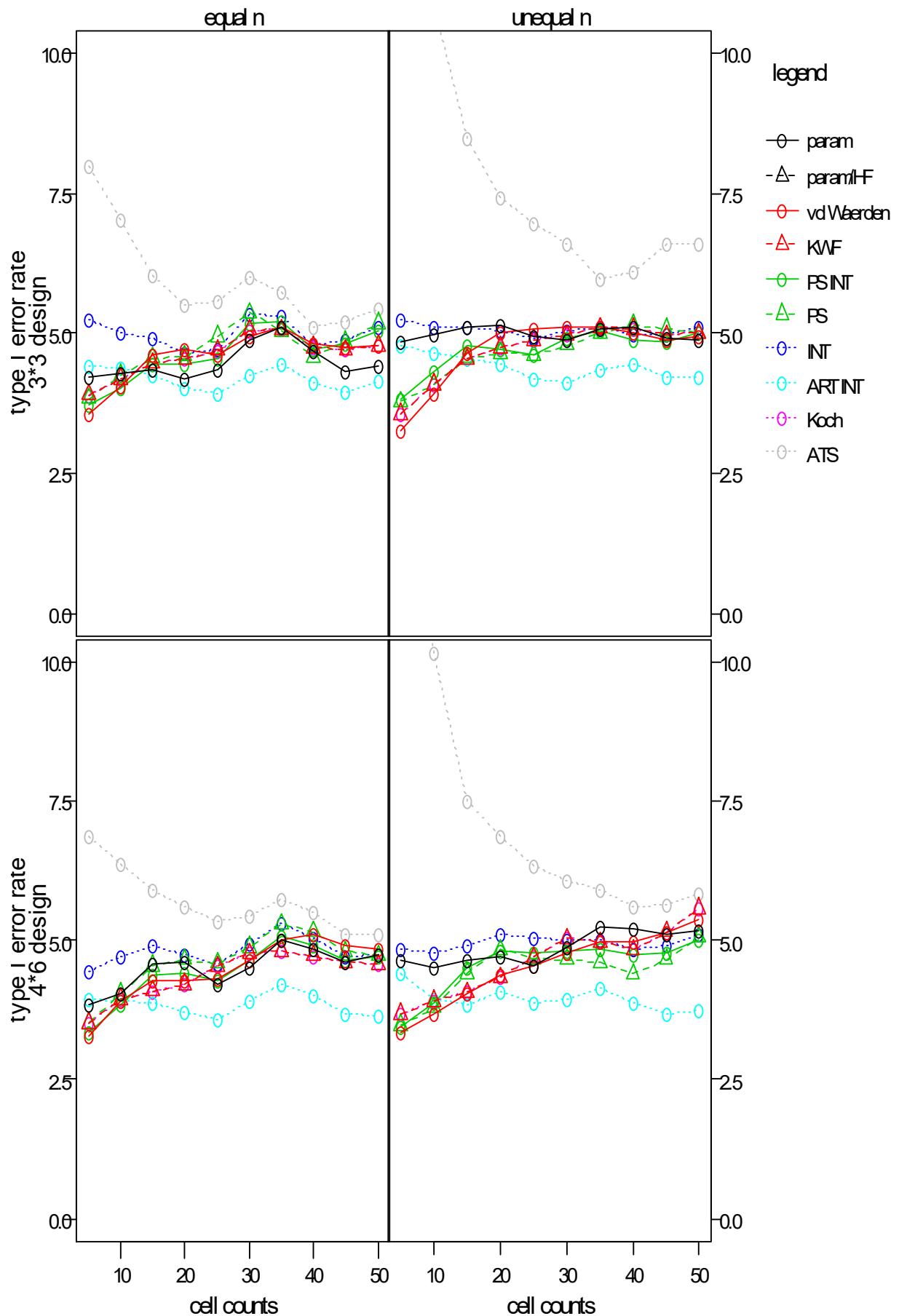
1. 2. 1. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.89	2.40	2.16	2.15	2.54	2.55	2.06	11.12	10.80	10.94	11.26	11.70	11.29	11.27
parametric HF-adj														
van der Waerden	2.70	2.64	2.50	2.24	2.38	2.40	1.97	6.64	7.53	8.50	8.90	9.31	9.43	9.79
KWF	2.80	2.80	2.88	2.91	3.17	3.35	3.08	5.46	6.46	7.35	7.51	7.62	7.96	8.29
Puri & Sen INT	2.42	2.25	2.10	1.99	2.11	2.33	2.10	7.23	7.88	8.78	9.45	9.90	9.35	9.62
Puri & Sen	2.94	2.94	3.09	3.01	2.91	3.56	3.00	6.13	6.62	7.34	7.74	8.38	7.89	7.92
INT	3.14	2.64	2.31	2.17	2.19	2.44	2.15	9.77	9.40	9.53	10.00	10.17	9.61	9.78
ART INT	3.12	2.62	2.34	2.27	2.31	2.42	2.02	10.12	9.54	9.44	9.80	10.43	9.88	9.70
Koch	2.80	2.80	2.88	2.91	3.17	3.35	3.08	5.46	6.46	7.35	7.51	7.62	7.96	8.29
ATS	12.32	9.72	7.36	6.55	6.24	6.62	5.26	17.11	12.79	9.22	8.06	7.44	6.72	6.13
large design (4*6)														
parametric	2.03	1.96	1.81	2.04	2.64	2.47	2.02	12.65	13.02	12.93	12.61	13.60	12.72	12.93
parametric HF-adj														
van der Waerden	1.80	1.75	1.66	1.98	2.59	2.26	1.68	6.86	8.38	9.15	9.28	10.40	9.64	10.17
KWF	2.43	2.50	2.38	2.49	3.31	3.40	2.65	6.17	7.45	7.60	7.38	8.65	8.34	9.07
Puri & Sen INT	1.57	1.60	1.51	1.73	2.40	2.12	1.55	7.59	8.84	9.51	9.56	10.53	10.06	10.22
Puri & Sen	1.93	2.23	2.38	2.62	3.14	3.14	3.13	6.19	7.15	7.40	7.56	8.80	8.66	8.72
INT	2.10	1.96	1.70	1.84	2.56	2.29	1.63	9.90	10.21	10.24	10.21	10.91	10.35	10.37
ART INT	2.15	1.96	1.71	1.86	2.48	2.20	1.83	10.82	10.88	10.52	10.47	11.41	10.50	10.73
Koch	2.43	2.50	2.38	2.49	3.31	3.40	2.65	6.17	7.45	7.60	7.38	8.65	8.34	9.07
ATS	10.48	8.53	6.89	6.30	5.76	5.55	5.67	13.68	11.15	8.44	7.25	7.05	6.22	6.27



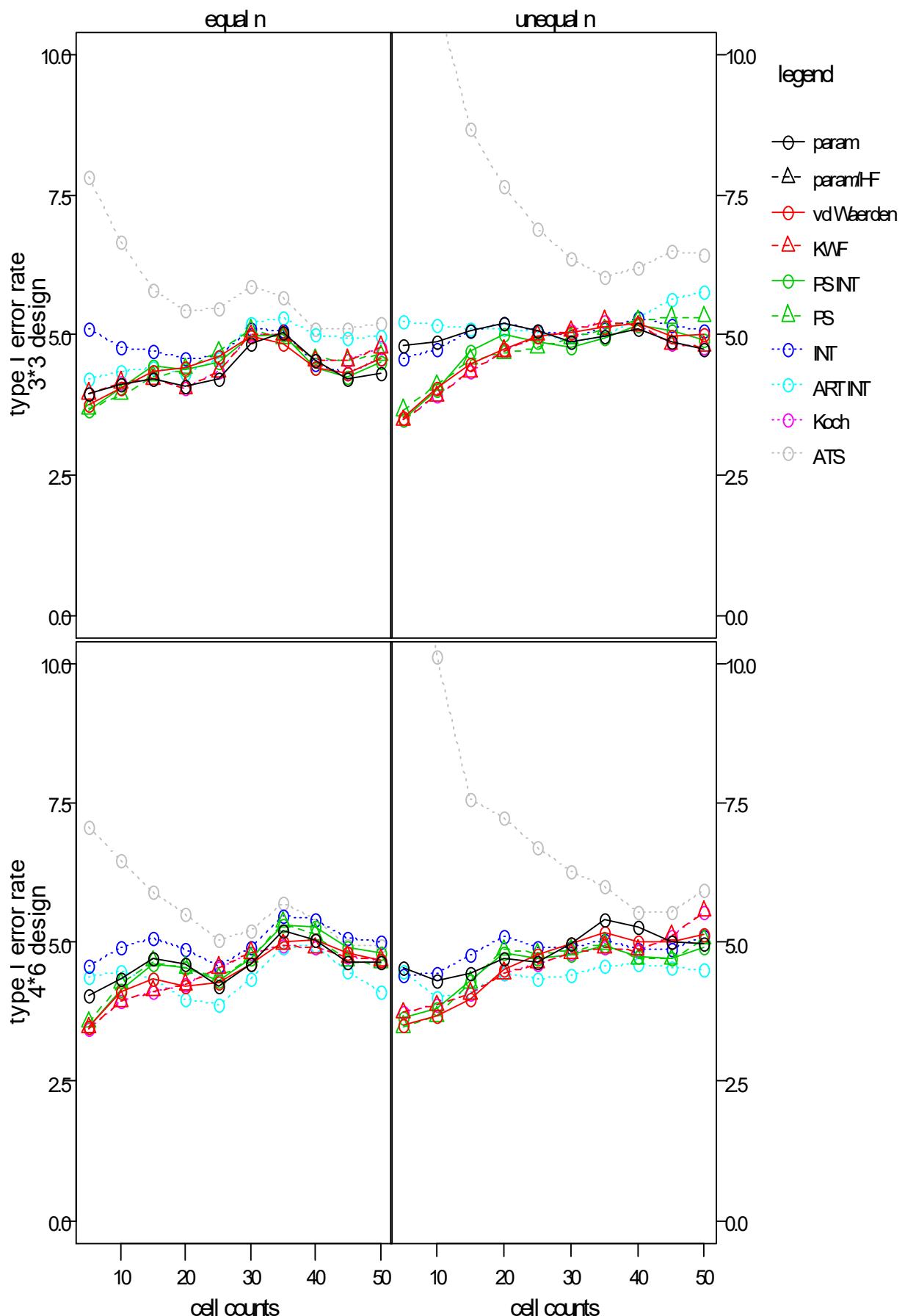
1. 2. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.20	4.29	4.33	4.18	4.88	4.66	4.40	4.85	4.96	5.12	5.15	4.88	5.12	4.87
parametric HF-adj														
van der Waerden	3.56	4.05	4.62	4.70	4.95	4.82	4.78	3.26	3.91	4.64	5.00	5.09	5.02	4.95
KWF	3.90	4.19	4.46	4.53	5.05	4.74	4.78	3.56	4.08	4.54	4.75	4.97	5.08	5.00
Puri & Sen INT	3.72	4.03	4.45	4.45	5.17	4.71	5.03	3.81	4.30	4.76	4.70	4.91	4.86	5.02
Puri & Sen	3.83	4.25	4.56	4.59	5.36	4.57	5.17	3.77	4.09	4.56	4.65	4.79	5.15	5.00
INT	5.25	5.01	4.90	4.65	5.35	4.78	5.10	5.24	5.10	5.11	5.03	5.04	4.97	5.12
ART INT	4.40	4.38	4.24	4.00	4.24	4.10	4.15	4.78	4.64	4.56	4.44	4.11	4.43	4.22
Koch	3.90	4.19	4.46	4.53	5.05	4.74	4.78	3.56	4.08	4.54	4.75	4.97	5.08	5.00
ATS	7.97	7.01	6.04	5.49	6.01	5.11	5.42	13.47	10.85	8.49	7.41	6.60	6.09	6.60
large design (4*6)														
parametric	3.83	4.05	4.59	4.62	4.51	4.84	4.74	4.65	4.51	4.64	4.71	4.88	5.19	5.17
parametric HF-adj														
van der Waerden	3.29	3.91	4.29	4.26	4.64	5.09	4.83	3.35	3.66	4.05	4.39	4.78	4.96	5.37
KWF	3.51	3.95	4.09	4.21	4.76	4.72	4.57	3.68	3.91	4.06	4.33	5.03	4.83	5.57
Puri & Sen INT	3.35	3.83	4.38	4.42	4.64	4.90	4.72	3.46	3.89	4.50	4.82	4.81	4.74	4.99
Puri & Sen	3.51	4.05	4.55	4.65	4.88	5.15	4.72	3.48	3.79	4.41	4.83	4.65	4.40	5.05
INT	4.43	4.69	4.91	4.75	4.94	5.04	4.75	4.83	4.76	4.91	5.12	5.01	4.85	5.12
ART INT	3.93	3.90	3.88	3.71	3.90	4.01	3.65	4.40	3.93	3.85	4.06	3.95	3.89	3.73
Koch	3.51	3.95	4.09	4.21	4.76	4.72	4.57	3.68	3.91	4.06	4.33	5.03	4.83	5.57
ATS	6.85	6.38	5.90	5.59	5.45	5.49	5.12	13.39	10.15	7.51	6.86	6.08	5.61	5.83



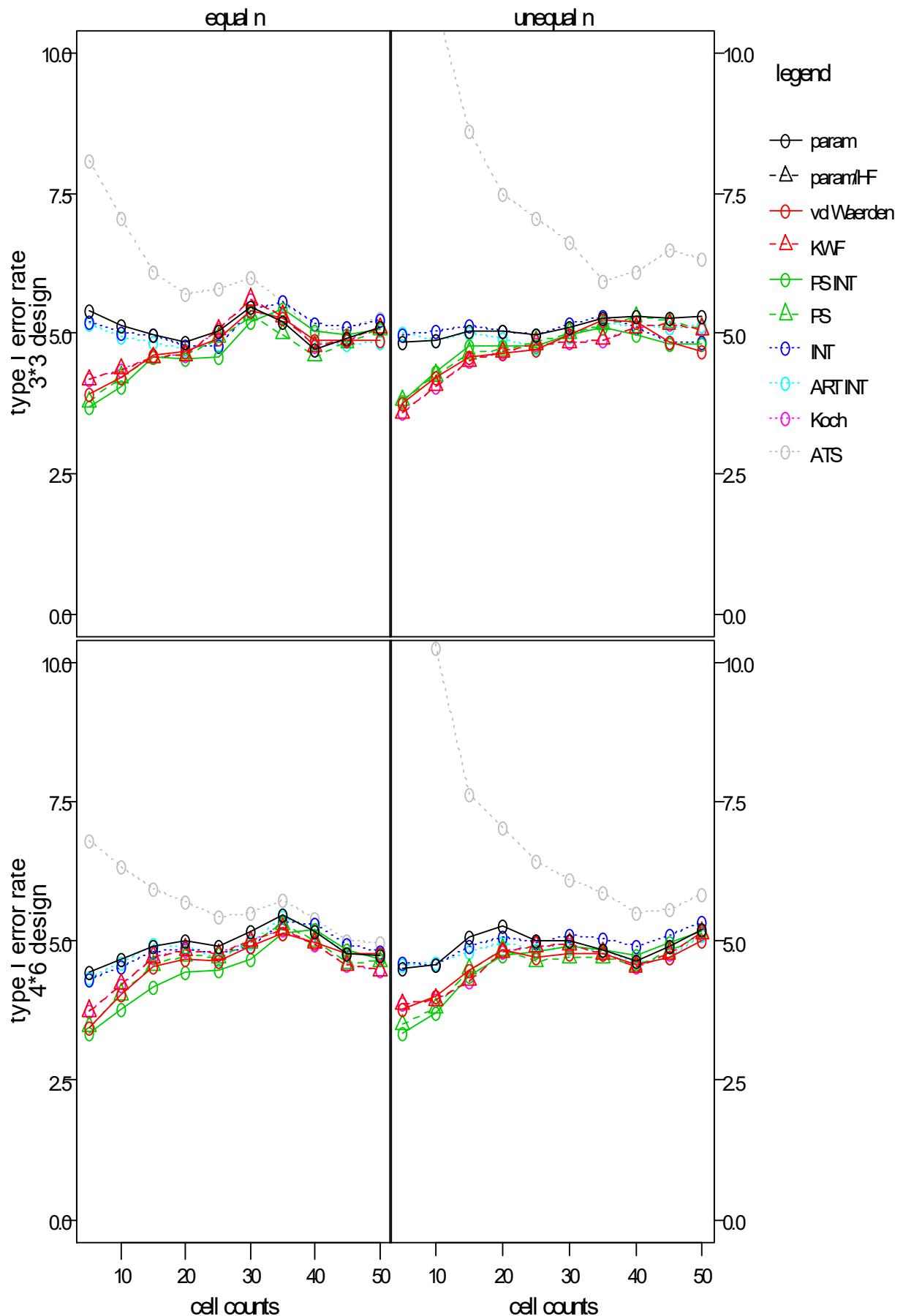
1. 2. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.95	4.10	4.23	4.08	4.85	4.53	4.32	4.82	4.89	5.08	5.21	4.88	5.11	4.73
parametric HF-adj														
van der Waerden	3.75	4.06	4.36	4.41	4.96	4.40	4.59	3.51	4.04	4.49	4.75	5.05	5.19	5.00
KWF	3.95	4.15	4.20	4.05	5.00	4.54	4.78	3.48	3.91	4.33	4.71	5.06	5.16	4.79
Puri & Sen INT	3.65	4.06	4.44	4.39	4.99	4.42	4.50	3.50	4.03	4.72	5.01	4.76	5.17	4.92
Puri & Sen	3.67	3.93	4.26	4.39	5.08	4.57	4.63	3.65	4.11	4.56	4.67	4.94	5.26	5.32
INT	5.12	4.78	4.70	4.57	5.09	4.47	4.57	4.58	4.75	5.08	5.21	4.96	5.30	5.08
ART INT	4.22	4.34	4.41	4.30	5.20	5.02	4.98	5.25	5.17	5.09	5.11	4.88	5.31	5.75
Koch	3.95	4.15	4.20	4.05	5.00	4.54	4.78	3.48	3.91	4.33	4.71	5.06	5.16	4.79
ATS	7.81	6.66	5.80	5.42	5.88	5.12	5.20	13.70	11.06	8.68	7.65	6.36	6.20	6.43
large design (4*6)														
parametric	4.05	4.33	4.71	4.61	4.61	5.04	4.65	4.53	4.31	4.43	4.69	4.97	5.26	4.97
parametric HF-adj														
van der Waerden	3.49	4.11	4.34	4.22	4.61	5.03	4.67	3.51	3.66	3.96	4.50	4.97	5.00	5.15
KWF	3.46	3.94	4.12	4.25	4.81	4.90	4.68	3.73	3.86	4.08	4.45	4.80	4.85	5.55
Puri & Sen INT	3.48	4.15	4.62	4.54	4.69	5.28	4.82	3.63	3.80	4.30	4.79	4.76	4.75	4.90
Puri & Sen	3.56	4.26	4.65	4.55	4.72	5.14	4.62	3.48	3.67	4.28	4.86	4.85	4.69	5.05
INT	4.56	4.90	5.08	4.88	4.91	5.40	5.00	4.42	4.44	4.78	5.10	4.89	4.86	5.12
ART INT	4.36	4.47	4.33	3.96	4.35	4.94	4.12	4.49	4.01	4.12	4.44	4.41	4.61	4.52
Koch	3.46	3.94	4.12	4.25	4.81	4.90	4.68	3.73	3.86	4.08	4.45	4.80	4.85	5.55
ATS	7.05	6.46	5.90	5.49	5.21	5.41	4.93	13.77	10.12	7.55	7.22	6.28	5.54	5.95



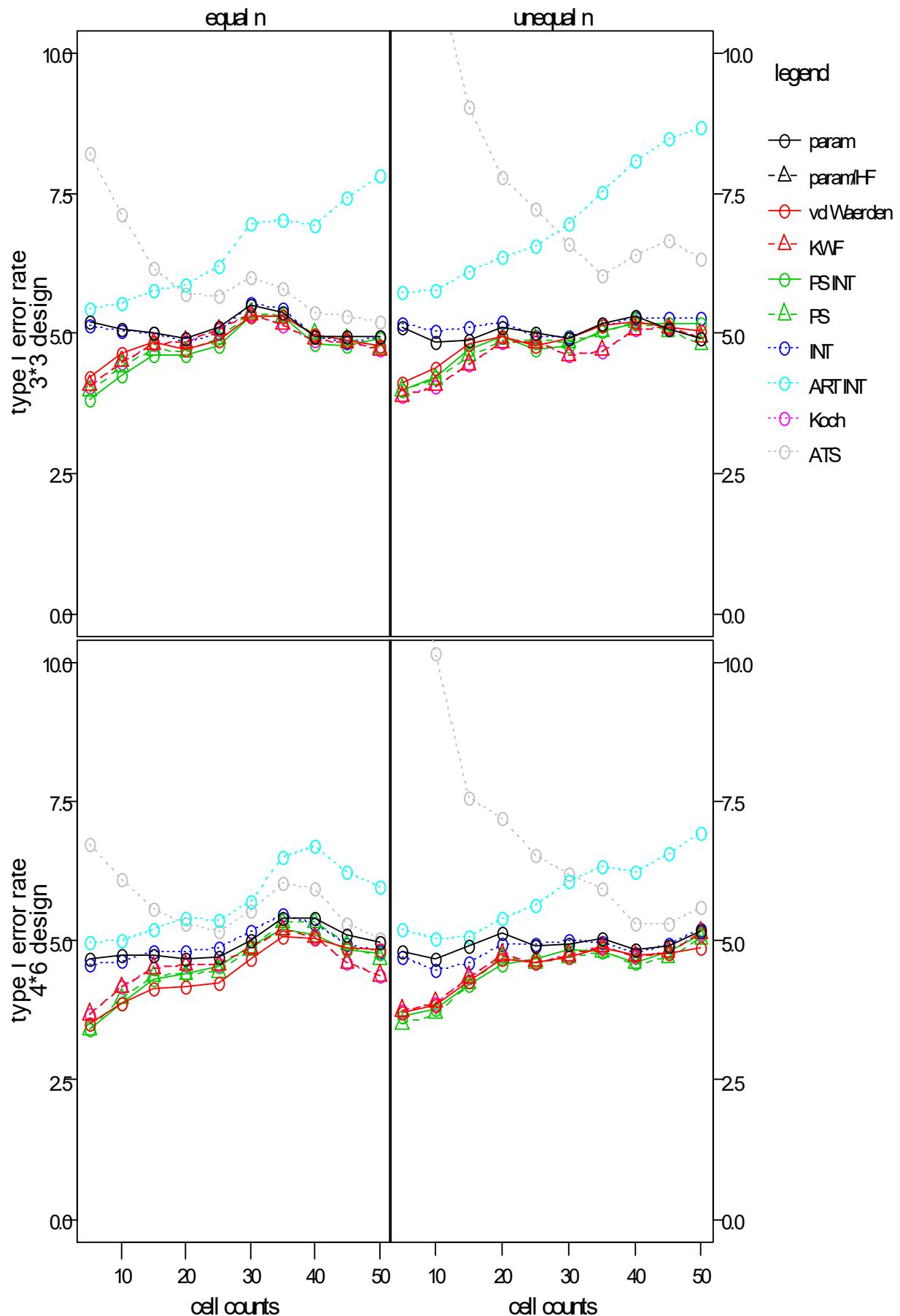
1. 2. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.39	5.14	4.97	4.84	5.47	4.71	5.10	4.85	4.86	5.05	5.03	5.12	5.29	5.30
parametric HF-adj														
van der Waerden	3.92	4.21	4.61	4.69	5.40	4.89	4.87	3.76	4.20	4.57	4.65	4.96	5.19	4.67
KWF	4.17	4.36	4.57	4.61	5.60	4.77	5.10	3.58	4.06	4.50	4.66	4.85	5.10	5.07
Puri & Sen INT	3.67	4.06	4.58	4.56	5.22	5.03	5.08	3.80	4.32	4.76	4.79	4.96	4.98	4.82
Puri & Sen	3.78	4.22	4.57	4.60	5.32	4.59	5.07	3.81	4.25	4.65	4.70	5.01	5.30	5.08
INT	5.19	5.01	4.96	4.78	5.39	5.16	5.25	4.97	5.04	5.14	5.05	5.16	5.11	4.83
ART INT	5.17	4.94	4.85	4.70	5.36	4.84	4.83	5.00	4.89	5.01	4.92	4.95	5.15	5.13
Koch	4.17	4.36	4.57	4.61	5.60	4.77	5.10	3.58	4.06	4.50	4.66	4.85	5.10	5.07
ATS	8.09	7.05	6.11	5.71	6.00	5.00	5.27	13.27	10.90	8.61	7.48	6.61	6.09	6.33
large design (4*6)														
parametric	4.43	4.67	4.92	4.99	5.16	5.17	4.75	4.50	4.59	5.06	5.26	4.99	4.65	5.20
parametric HF-adj														
van der Waerden	3.45	4.03	4.55	4.67	4.90	4.96	4.78	3.78	4.00	4.49	4.83	4.76	4.57	5.00
KWF	3.75	4.22	4.71	4.84	4.99	4.95	4.47	3.87	3.95	4.29	4.79	4.94	4.55	5.14
Puri & Sen INT	3.35	3.76	4.17	4.45	4.67	5.19	4.67	3.35	3.71	4.36	4.74	4.91	4.75	5.18
Puri & Sen	3.46	4.05	4.57	4.73	4.97	5.01	4.63	3.50	3.80	4.49	4.84	4.70	4.56	5.13
INT	4.32	4.53	4.79	4.86	4.92	5.31	4.80	4.62	4.59	4.91	5.08	5.10	4.89	5.35
ART INT	4.33	4.61	4.95	4.91	4.97	5.19	4.75	4.58	4.60	4.80	4.96	4.88	4.61	5.09
Koch	3.75	4.22	4.71	4.84	4.99	4.95	4.47	3.87	3.95	4.29	4.79	4.94	4.55	5.14
ATS	6.80	6.35	5.93	5.71	5.50	5.41	4.98	13.64	10.26	7.64	7.03	6.10	5.50	5.82



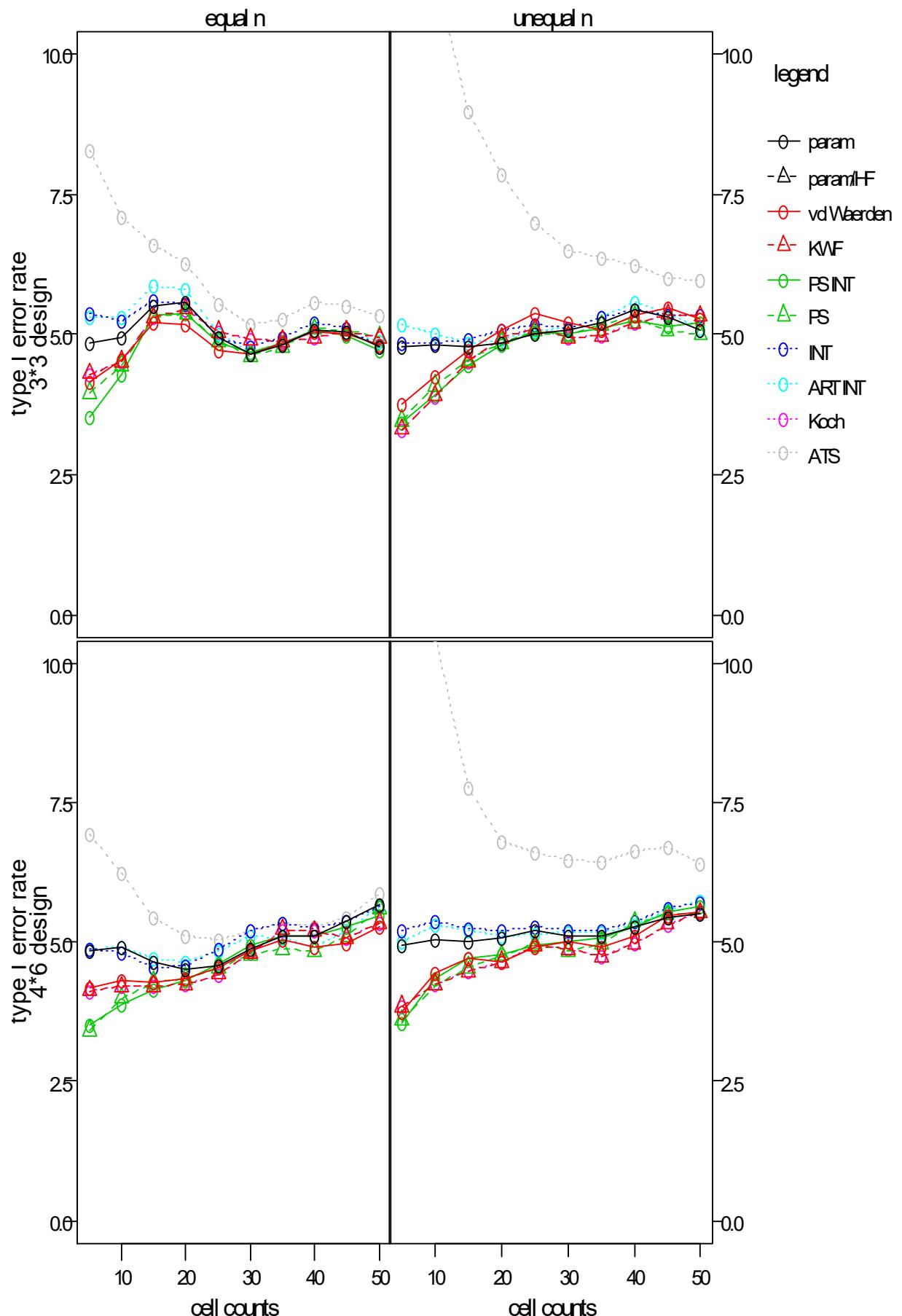
1. 2. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.20	5.08	5.00	4.91	5.51	4.95	4.95	5.10	4.84	4.89	5.12	4.92	5.31	4.90
parametric HF-adj														
van der Waerden	4.21	4.65	4.84	4.70	5.32	4.99	4.78	4.10	4.39	4.81	4.93	4.91	5.19	5.03
KWF	4.06	4.49	4.81	4.84	5.33	4.89	4.70	3.87	4.06	4.45	4.84	4.60	5.08	4.92
Puri & Sen INT	3.83	4.26	4.62	4.60	5.32	4.80	4.92	3.98	4.22	4.72	4.94	4.76	5.17	5.18
Puri & Sen	3.96	4.41	4.71	4.66	5.36	4.99	4.73	3.98	4.19	4.59	4.89	4.84	5.21	4.80
INT	5.13	5.05	5.00	4.83	5.54	4.94	4.93	5.18	5.03	5.12	5.20	4.95	5.28	5.27
ART INT	5.45	5.53	5.78	5.85	6.95	6.91	7.80	5.72	5.75	6.10	6.36	6.95	8.07	8.68
Koch	4.06	4.49	4.81	4.84	5.33	4.89	4.70	3.87	4.06	4.45	4.84	4.60	5.08	4.92
ATS	8.22	7.12	6.16	5.70	6.01	5.36	5.20	13.92	11.50	9.05	7.79	6.59	6.39	6.33
large design (4*6)														
parametric	4.67	4.75	4.75	4.67	5.02	5.40	4.98	4.80	4.66	4.91	5.14	4.95	4.83	5.18
parametric HF-adj														
van der Waerden	3.51	3.89	4.14	4.17	4.68	5.04	4.85	3.70	3.83	4.29	4.68	4.72	4.74	4.87
KWF	3.68	4.16	4.51	4.56	4.86	5.06	4.38	3.75	3.89	4.35	4.74	4.74	4.72	5.14
Puri & Sen INT	3.41	3.88	4.30	4.42	4.89	5.11	4.77	3.65	3.79	4.20	4.59	4.83	4.60	5.12
Puri & Sen	3.41	3.97	4.36	4.40	4.83	5.33	4.68	3.50	3.69	4.22	4.70	4.69	4.59	5.04
INT	4.57	4.64	4.79	4.82	5.17	5.31	4.82	4.70	4.49	4.62	4.94	5.01	4.78	5.20
ART INT	4.97	4.99	5.20	5.39	5.70	6.71	5.98	5.20	5.03	5.08	5.41	6.06	6.24	6.93
Koch	3.68	4.16	4.51	4.56	4.86	5.06	4.38	3.75	3.89	4.35	4.74	4.74	4.72	5.14
ATS	6.72	6.11	5.58	5.30	5.53	5.92	5.05	13.72	10.15	7.57	7.19	6.20	5.31	5.60



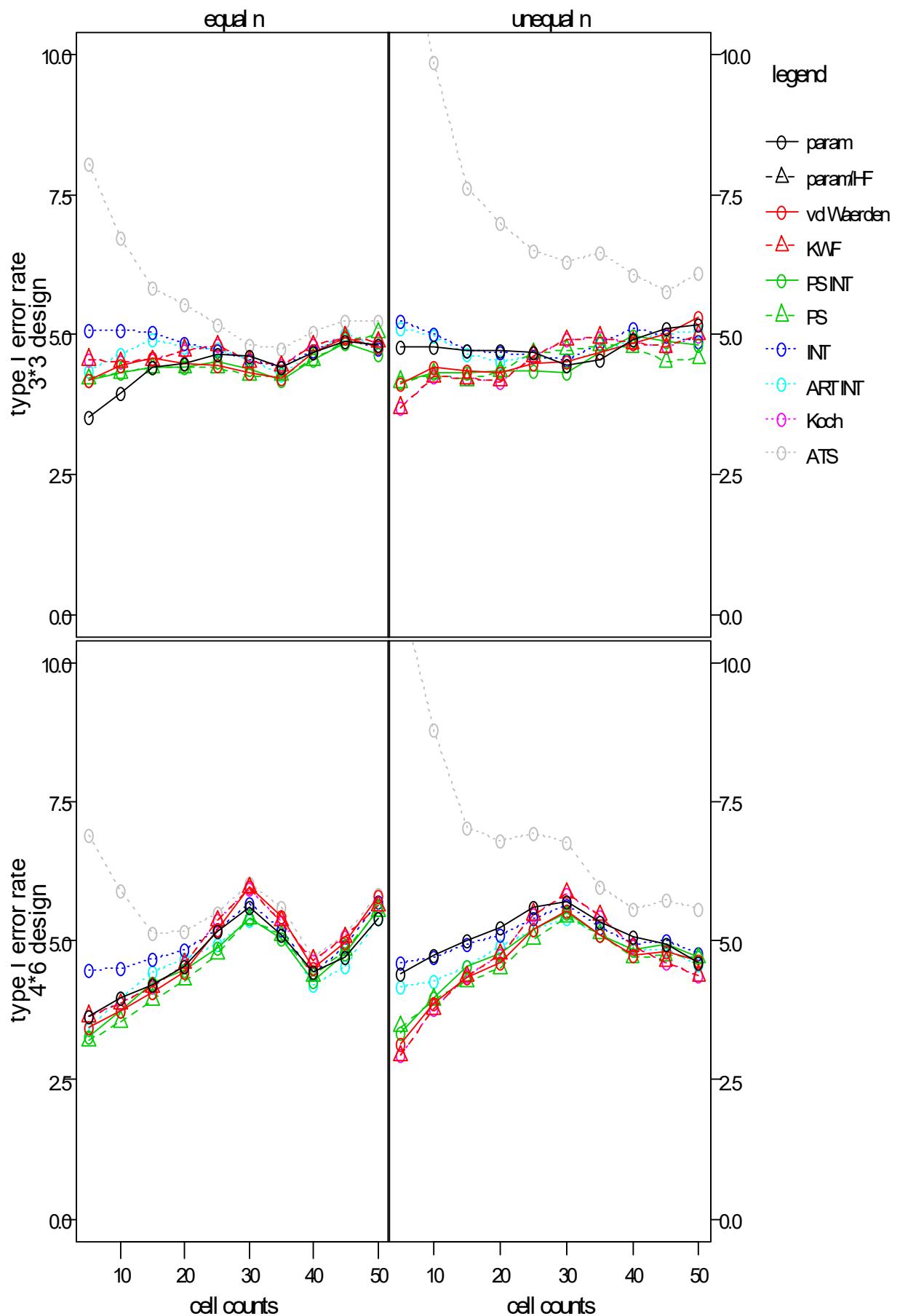
1. 2. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.84	4.93	5.50	5.56	4.65	5.08	4.76	4.78	4.80	4.79	4.85	5.06	5.44	5.08
parametric HF-adj														
van der Waerden	4.15	4.54	5.22	5.17	4.65	5.04	4.80	3.76	4.26	4.70	5.08	5.20	5.35	5.28
KWF	4.29	4.51	5.29	5.45	4.91	4.95	4.93	3.30	3.90	4.50	4.93	4.94	5.21	5.33
Puri & Sen INT	3.53	4.28	5.33	5.38	4.69	5.06	4.72	3.43	3.92	4.45	4.80	5.01	5.25	5.20
Puri & Sen	3.95	4.45	5.29	5.36	4.60	5.10	4.95	3.46	4.09	4.54	4.85	4.96	5.31	5.00
INT	5.37	5.24	5.61	5.53	4.76	5.21	4.78	4.85	4.84	4.91	5.07	5.11	5.45	5.34
ART INT	5.30	5.29	5.85	5.79	4.66	5.06	4.87	5.18	5.00	4.84	4.91	5.09	5.56	5.12
Koch	4.29	4.51	5.29	5.45	4.91	4.95	4.93	3.30	3.90	4.50	4.93	4.94	5.21	5.33
ATS	8.28	7.09	6.59	6.25	5.16	5.57	5.35	14.30	11.43	8.97	7.84	6.49	6.24	5.95
large design (4*6)														
parametric	4.85	4.89	4.64	4.50	4.86	5.12	5.67	4.95	5.05	4.99	5.07	5.12	5.26	5.52
parametric HF-adj														
van der Waerden	4.18	4.30	4.29	4.34	4.85	4.91	5.27	3.73	4.45	4.70	4.65	5.01	5.09	5.55
KWF	4.12	4.20	4.21	4.25	4.81	5.19	5.34	3.85	4.25	4.46	4.64	4.86	4.97	5.53
Puri & Sen INT	3.50	3.89	4.14	4.32	4.95	5.11	5.47	3.56	4.35	4.69	4.76	4.99	5.28	5.63
Puri & Sen	3.41	3.99	4.28	4.34	4.78	4.83	5.60	3.59	4.22	4.54	4.75	4.83	5.35	5.52
INT	4.88	4.80	4.55	4.59	5.19	5.25	5.62	5.21	5.38	5.25	5.22	5.20	5.38	5.70
ART INT	4.88	4.89	4.71	4.65	5.09	4.92	5.65	5.01	5.30	5.21	5.09	5.17	5.30	5.75
Koch	4.12	4.20	4.21	4.25	4.81	5.19	5.34	3.85	4.25	4.46	4.64	4.86	4.97	5.53
ATS	6.94	6.22	5.45	5.11	5.22	5.26	5.87	13.11	10.51	7.76	6.79	6.46	6.64	6.41



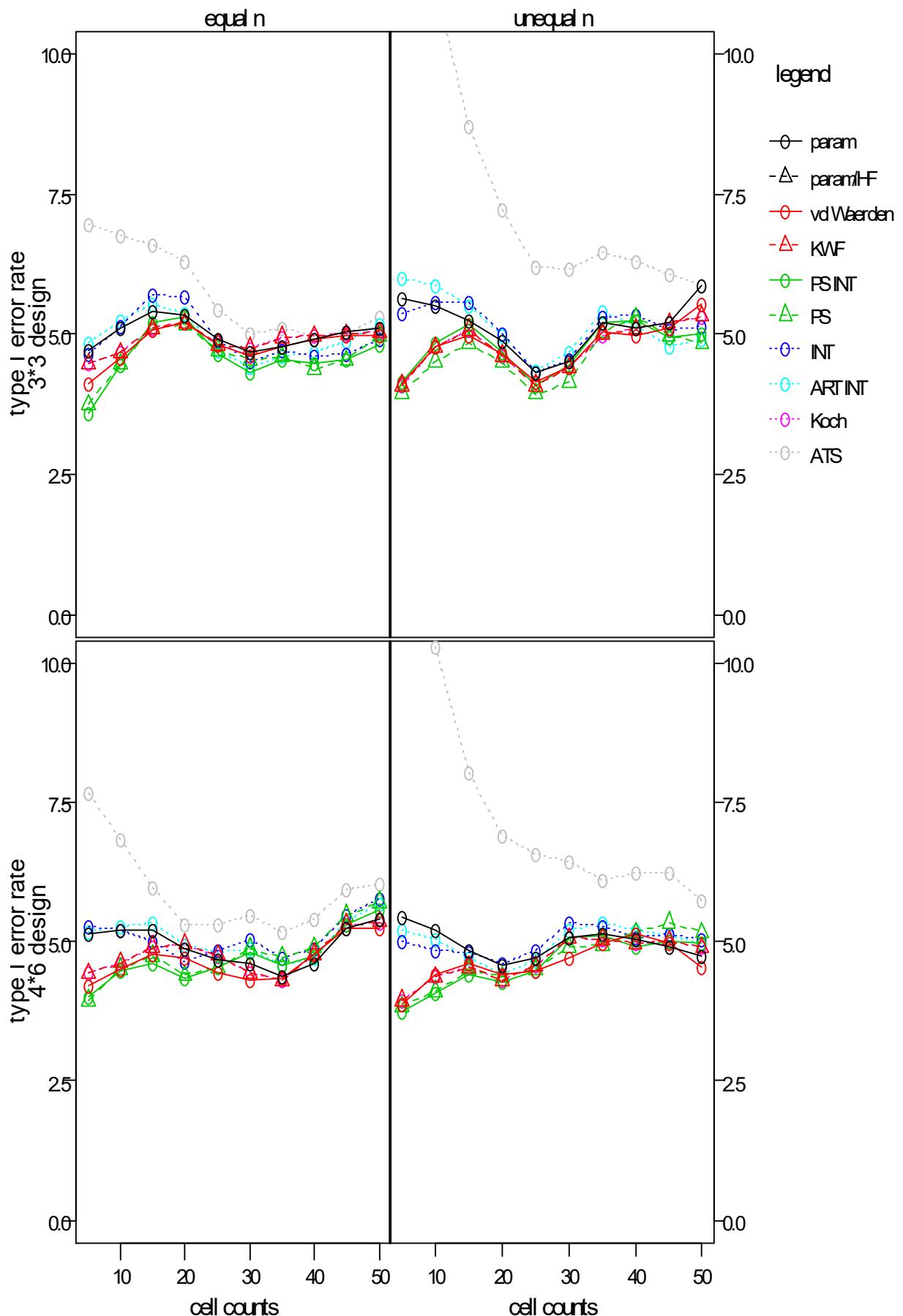
1. 2. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.53	3.96	4.41	4.47	4.61	4.67	4.80	4.77	4.79	4.71	4.70	4.45	4.90	5.18
parametric HF-adj														
van der Waerden	4.18	4.44	4.58	4.47	4.31	4.66	4.76	4.13	4.41	4.35	4.31	4.51	4.85	5.30
KWF	4.55	4.50	4.53	4.71	4.51	4.80	4.87	3.69	4.24	4.20	4.16	4.90	4.85	4.99
Puri & Sen INT	4.17	4.30	4.40	4.40	4.39	4.54	4.65	4.16	4.32	4.30	4.34	4.31	4.99	4.80
Puri & Sen	4.20	4.31	4.40	4.42	4.26	4.55	5.02	4.15	4.29	4.17	4.34	4.72	4.76	4.57
INT	5.07	5.06	5.03	4.83	4.55	4.72	4.73	5.25	5.00	4.70	4.68	4.53	5.12	4.88
ART INT	4.35	4.65	4.90	4.76	4.55	4.69	4.76	5.12	4.99	4.64	4.52	4.54	4.92	5.07
Koch	4.55	4.50	4.53	4.71	4.51	4.80	4.87	3.69	4.24	4.20	4.16	4.90	4.85	4.99
ATS	8.03	6.71	5.83	5.55	4.80	5.04	5.25	12.63	9.87	7.61	6.99	6.30	6.05	6.10
large design (4*6)														
parametric	3.63	3.97	4.22	4.55	5.60	4.44	5.39	4.40	4.73	5.01	5.25	5.71	5.08	4.60
parametric HF-adj														
van der Waerden	3.43	3.74	4.06	4.44	5.98	4.50	5.80	3.14	3.89	4.35	4.62	5.55	4.74	4.65
KWF	3.65	3.86	4.16	4.59	5.95	4.64	5.62	2.94	3.78	4.36	4.75	5.85	4.90	4.38
Puri & Sen INT	3.28	3.73	4.24	4.47	5.42	4.26	5.57	3.33	3.96	4.53	4.76	5.49	4.85	4.70
Puri & Sen	3.20	3.55	3.95	4.29	5.39	4.36	5.54	3.46	3.95	4.26	4.51	5.44	4.69	4.70
INT	4.48	4.51	4.66	4.84	5.68	4.42	5.70	4.60	4.72	4.95	5.10	5.64	4.94	4.76
ART INT	3.41	3.98	4.44	4.66	5.38	4.22	5.42	4.18	4.29	4.55	4.91	5.39	4.83	4.58
Koch	3.65	3.86	4.16	4.59	5.95	4.64	5.62	2.94	3.78	4.36	4.75	5.85	4.90	4.38
ATS	6.89	5.90	5.15	5.17	6.03	4.69	5.82	11.29	8.79	7.04	6.81	6.78	5.56	5.56



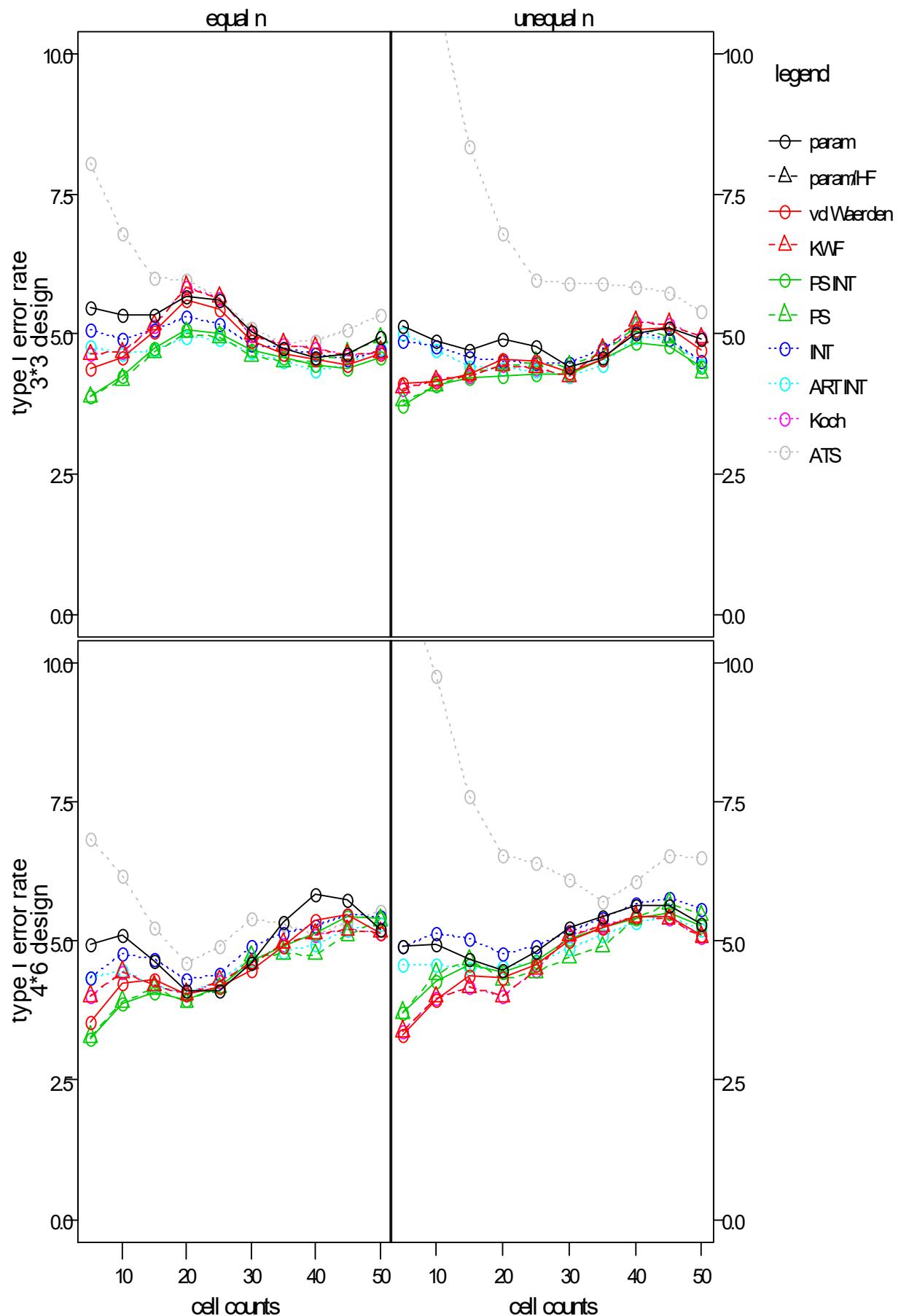
1. 2. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.70	5.10	5.40	5.34	4.68	4.90	5.12	5.63	5.51	5.25	4.88	4.51	5.12	5.86
parametric HF-adj														
van der Waerden	4.10	4.58	5.08	5.20	4.61	4.91	4.97	4.11	4.76	4.99	4.65	4.41	4.97	5.54
KWF	4.47	4.67	5.09	5.20	4.74	4.97	5.03	4.09	4.76	5.07	4.62	4.40	5.10	5.32
Puri & Sen INT	3.58	4.44	5.20	5.30	4.31	4.49	4.80	4.14	4.85	5.17	4.67	4.45	5.23	5.02
Puri & Sen	3.74	4.47	5.11	5.17	4.54	4.38	4.97	3.95	4.51	4.84	4.49	4.15	5.29	4.85
INT	4.65	5.14	5.69	5.67	4.50	4.62	4.90	5.38	5.56	5.56	5.00	4.56	5.33	5.14
ART INT	4.85	5.24	5.53	5.38	4.42	4.67	5.17	6.01	5.87	5.49	4.96	4.66	5.15	4.92
Koch	4.47	4.67	5.09	5.20	4.74	4.97	5.03	4.09	4.76	5.07	4.62	4.40	5.10	5.32
ATS	6.97	6.75	6.58	6.28	5.01	4.96	5.30	14.02	11.30	8.70	7.22	6.15	6.31	5.87
large design (4*6)														
parametric	5.15	5.20	5.19	4.88	4.61	4.60	5.42	5.45	5.22	4.85	4.56	5.06	5.04	4.75
parametric HF-adj														
van der Waerden	4.20	4.51	4.77	4.70	4.30	4.76	5.23	3.88	4.40	4.60	4.41	4.71	5.15	4.53
KWF	4.43	4.62	4.91	4.95	4.44	4.78	5.35	3.95	4.36	4.54	4.31	5.06	4.96	4.90
Puri & Sen INT	4.00	4.46	4.62	4.34	4.79	4.73	5.58	3.75	4.09	4.41	4.28	5.07	4.91	4.98
Puri & Sen	3.95	4.51	4.74	4.40	4.88	4.90	5.70	3.83	4.11	4.49	4.36	4.89	5.16	5.16
INT	5.28	5.22	4.99	4.65	5.03	4.86	5.77	5.02	4.85	4.79	4.61	5.35	5.08	5.05
ART INT	5.17	5.26	5.34	4.95	4.88	4.70	5.68	5.20	5.03	4.70	4.42	5.20	5.21	4.96
Koch	4.43	4.62	4.91	4.95	4.44	4.78	5.35	3.95	4.36	4.54	4.31	5.06	4.96	4.90
ATS	7.66	6.82	5.96	5.31	5.47	5.39	6.05	12.55	10.29	8.04	6.89	6.44	6.22	5.73



1. 2. 1. 13 normal distribution - equal variances - contaminated III

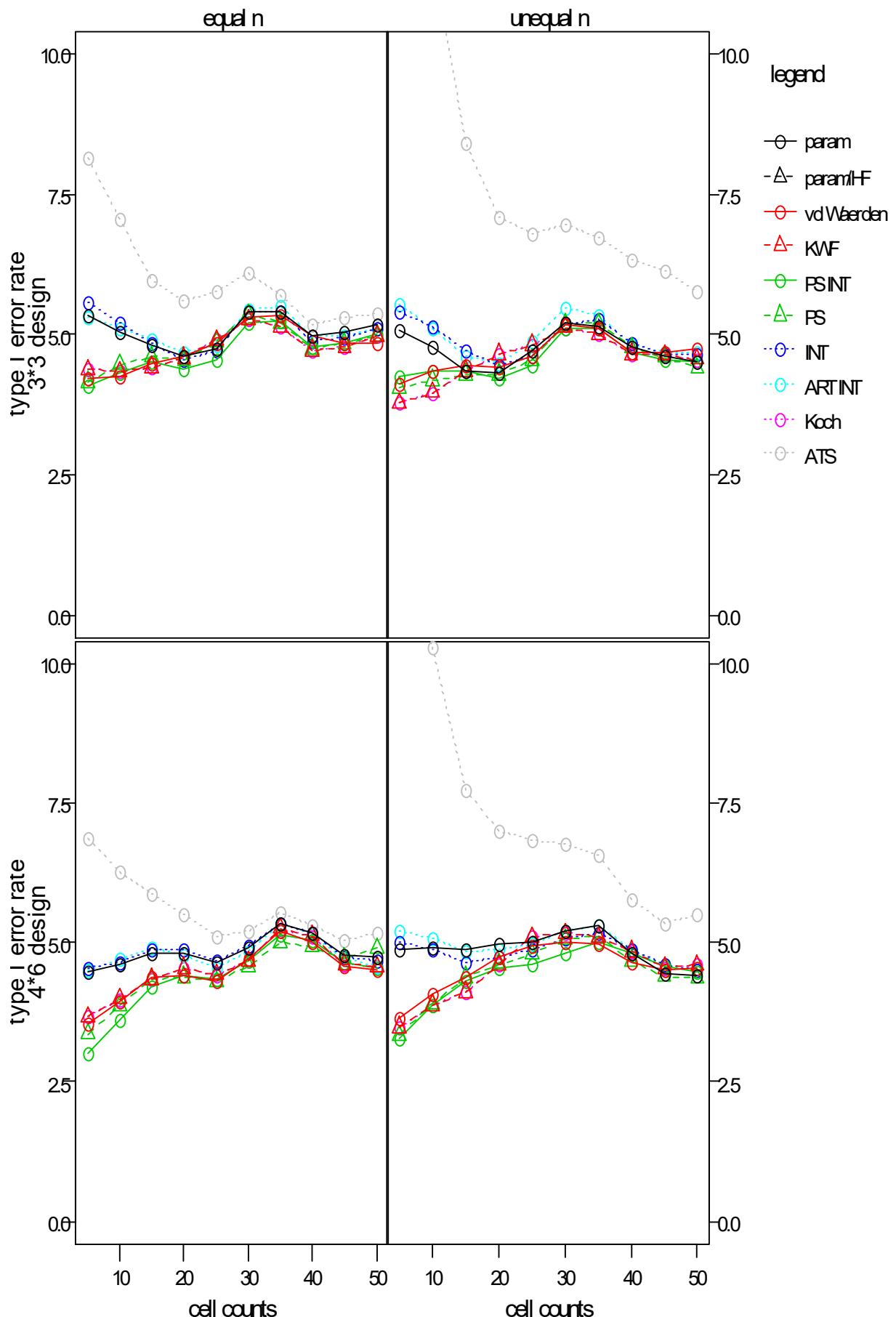
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.48	5.35	5.33	5.67	5.05	4.59	4.94	5.15	4.86	4.71	4.90	4.42	5.01	4.90
parametric HF-adj														
van der Waerden	4.38	4.58	5.05	5.60	4.86	4.55	4.64	4.10	4.15	4.29	4.55	4.31	5.06	4.70
KWF	4.63	4.66	5.15	5.83	4.99	4.74	4.68	4.03	4.17	4.26	4.45	4.24	5.22	4.93
Puri & Sen INT	3.90	4.25	4.75	5.06	4.71	4.46	4.57	3.73	4.08	4.21	4.24	4.29	4.85	4.40
Puri & Sen	3.88	4.19	4.66	5.02	4.62	4.50	4.92	3.80	4.07	4.29	4.46	4.41	5.12	4.31
INT	5.07	4.92	5.06	5.32	4.82	4.64	4.70	4.88	4.76	4.58	4.51	4.49	5.05	4.51
ART INT	4.77	4.65	4.71	4.94	4.68	4.35	4.75	5.02	4.70	4.40	4.38	4.24	4.94	4.46
Koch	4.63	4.66	5.15	5.83	4.99	4.74	4.68	4.03	4.17	4.26	4.45	4.24	5.22	4.93
ATS	8.04	6.78	5.99	5.96	5.10	4.88	5.34	14.24	11.16	8.34	6.79	5.91	5.84	5.40
large design (4*6)														
parametric	4.93	5.09	4.64	4.12	4.60	5.84	5.20	4.90	4.95	4.68	4.49	5.24	5.65	5.30
parametric HF-adj														
van der Waerden	3.56	4.24	4.30	4.05	4.49	5.36	5.13	3.31	3.93	4.36	4.35	5.01	5.45	5.11
KWF	4.01	4.44	4.20	4.04	4.60	5.12	5.15	3.38	3.99	4.17	4.01	5.10	5.44	5.08
Puri & Sen INT	3.26	3.89	4.06	3.95	4.64	5.15	5.41	3.71	4.29	4.58	4.44	5.05	5.41	5.26
Puri & Sen	3.28	3.91	4.15	3.90	4.72	4.75	5.38	3.71	4.41	4.66	4.31	4.69	5.41	5.46
INT	4.35	4.76	4.68	4.30	4.91	5.26	5.45	4.90	5.14	5.05	4.76	5.18	5.68	5.56
ART INT	4.35	4.46	4.21	4.04	4.66	4.94	5.30	4.58	4.56	4.52	4.53	4.88	5.34	5.20
Koch	4.01	4.44	4.20	4.04	4.60	5.12	5.15	3.38	3.99	4.17	4.01	5.10	5.44	5.08
ATS	6.84	6.16	5.24	4.62	5.40	5.12	5.53	11.54	9.75	7.60	6.53	6.10	6.06	6.51



1. 2. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

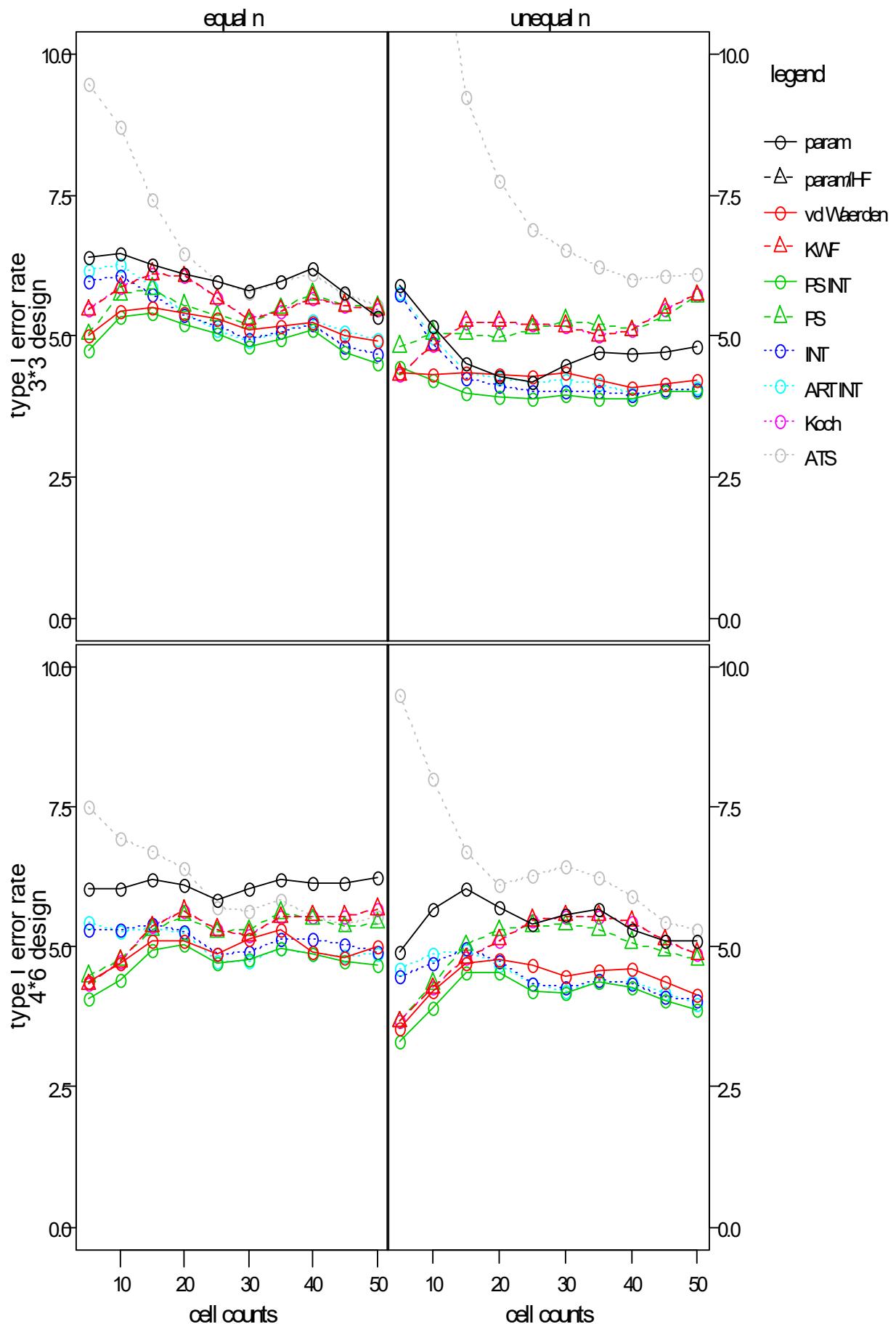
1. 2. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.03	4.80	4.60	5.40	4.96	5.18	5.08	4.79	4.35	4.30	5.22	4.76	4.50
parametric HF-adj														
van der Waerden	4.22	4.24	4.48	4.60	5.31	4.99	4.83	4.11	4.34	4.46	4.41	5.16	4.67	4.75
KWF	4.37	4.34	4.42	4.58	5.26	4.71	4.98	3.77	3.96	4.35	4.65	5.12	4.65	4.56
Puri & Sen INT	4.08	4.30	4.50	4.39	5.20	4.79	5.00	4.25	4.36	4.33	4.22	5.09	4.68	4.52
Puri & Sen	4.15	4.46	4.60	4.54	5.36	4.75	4.97	4.05	4.19	4.28	4.28	5.18	4.76	4.40
INT	5.57	5.20	4.84	4.55	5.40	4.88	5.12	5.40	5.14	4.71	4.46	5.18	4.83	4.63
ART INT	5.30	5.10	4.90	4.68	5.45	4.97	5.12	5.52	5.12	4.61	4.49	5.46	4.80	4.67
Koch	4.37	4.34	4.42	4.58	5.26	4.71	4.98	3.77	3.96	4.35	4.65	5.12	4.65	4.56
ATS	8.14	7.04	5.96	5.59	6.08	5.17	5.38	15.16	11.66	8.42	7.10	6.97	6.34	5.78
large design (4*6)														
parametric	4.48	4.61	4.80	4.80	4.90	5.16	4.73	4.88	4.92	4.86	4.97	5.19	4.82	4.40
parametric HF-adj														
van der Waerden	3.55	3.95	4.36	4.42	4.71	5.00	4.50	3.65	4.06	4.39	4.74	5.01	4.65	4.55
KWF	3.66	3.99	4.34	4.54	4.66	5.12	4.57	3.48	3.88	4.11	4.60	5.16	4.84	4.60
Puri & Sen INT	3.00	3.60	4.21	4.40	4.66	5.04	4.53	3.28	3.86	4.31	4.55	4.81	4.80	4.48
Puri & Sen	3.36	3.86	4.33	4.38	4.58	4.92	4.90	3.33	3.90	4.38	4.62	5.06	4.67	4.37
INT	4.55	4.65	4.88	4.86	4.94	5.16	4.67	5.02	4.86	4.65	4.75	5.08	4.86	4.52
ART INT	4.51	4.72	4.89	4.78	4.85	5.14	4.57	5.20	5.06	4.83	4.88	5.21	4.86	4.55
Koch	3.66	3.99	4.34	4.54	4.66	5.12	4.57	3.48	3.88	4.11	4.60	5.16	4.84	4.60
ATS	6.85	6.26	5.86	5.51	5.20	5.31	5.17	12.66	10.28	7.74	7.00	6.76	5.78	5.49



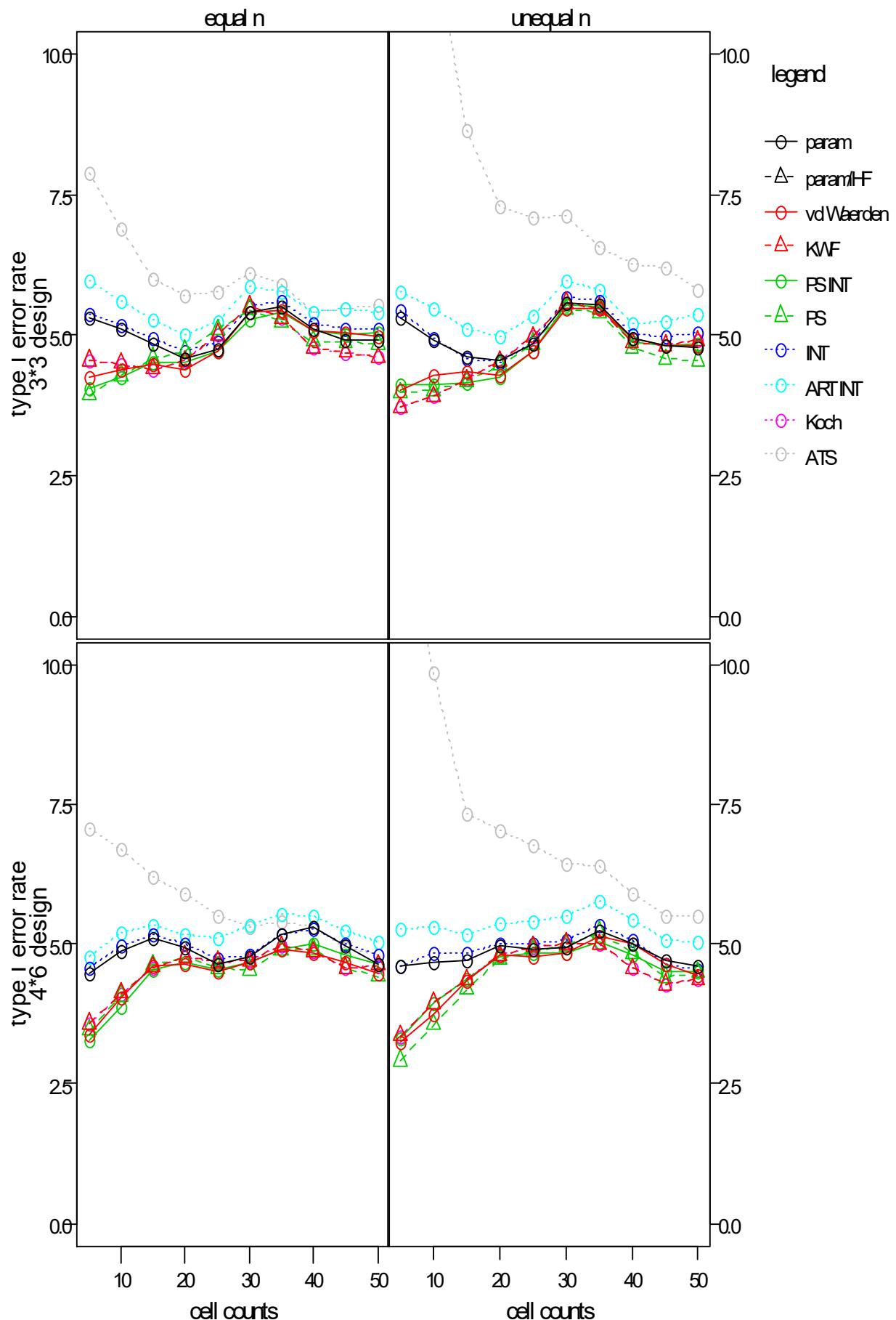
1. 2. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.38	6.46	6.25	6.09	5.79	6.19	5.33	5.90	5.16	4.51	4.28	4.47	4.66	4.80
parametric HF-adj														
van der Waerden	5.01	5.42	5.49	5.39	5.11	5.25	4.92	4.33	4.30	4.33	4.31	4.33	4.09	4.22
KWF	5.46	5.86	6.10	6.06	5.29	5.67	5.47	4.31	4.84	5.25	5.25	5.17	5.09	5.72
Puri & Sen INT	4.73	5.33	5.40	5.20	4.81	5.09	4.52	4.43	4.22	3.99	3.92	3.94	3.89	4.02
Puri & Sen	5.03	5.74	5.83	5.54	5.22	5.74	5.50	4.81	5.04	5.03	4.99	5.28	5.10	5.70
INT	5.95	6.07	5.74	5.38	4.94	5.19	4.67	5.72	4.89	4.24	4.11	4.02	3.96	4.05
ART INT	6.15	6.27	5.88	5.41	4.92	5.27	4.93	5.77	4.99	4.36	4.26	4.22	3.99	4.08
Koch	5.46	5.86	6.10	6.06	5.29	5.67	5.47	4.31	4.84	5.25	5.25	5.17	5.09	5.72
ATS	9.47	8.70	7.41	6.46	5.76	6.09	5.55	17.85	13.12	9.25	7.76	6.54	6.01	6.10
large design (4*6)														
parametric	6.03	6.04	6.21	6.11	6.04	6.12	6.22	4.91	5.66	6.05	5.70	5.56	5.32	5.12
parametric HF-adj														
van der Waerden	4.37	4.69	5.12	5.12	5.15	4.91	5.00	3.55	4.20	4.71	4.78	4.49	4.61	4.13
KWF	4.33	4.74	5.36	5.64	5.21	5.55	5.67	3.66	4.26	4.80	5.12	5.55	5.45	4.87
Puri & Sen INT	4.06	4.42	4.94	5.03	4.76	4.88	4.67	3.31	3.91	4.55	4.53	4.16	4.29	3.88
Puri & Sen	4.48	4.76	5.31	5.55	5.30	5.50	5.42	3.66	4.35	5.03	5.29	5.40	5.08	4.78
INT	5.32	5.29	5.39	5.26	4.91	5.14	4.92	4.47	4.71	4.96	4.74	4.26	4.33	4.03
ART INT	5.43	5.26	5.34	5.24	4.75	4.88	4.87	4.62	4.86	4.95	4.67	4.22	4.38	3.98
Koch	4.33	4.74	5.36	5.64	5.21	5.55	5.67	3.66	4.26	4.80	5.12	5.55	5.45	4.87
ATS	7.49	6.94	6.71	6.40	5.62	5.53	5.55	9.48	8.01	6.69	6.10	6.42	5.89	5.32



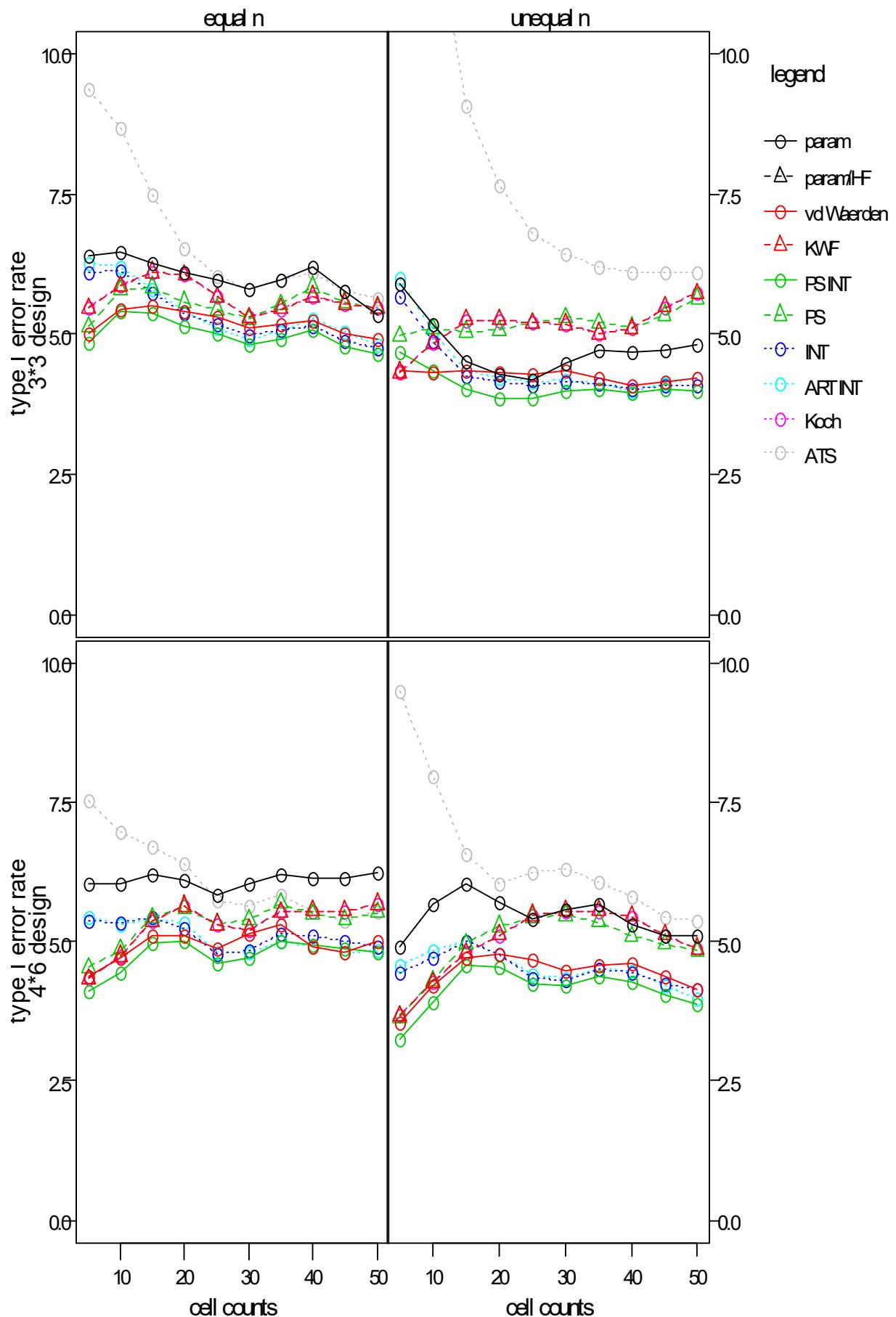
1. 2. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.32	5.12	4.85	4.58	5.39	5.09	4.92	5.32	4.92	4.62	4.55	5.56	4.95	4.76
parametric HF-adj														
van der Waerden	4.25	4.39	4.49	4.39	5.41	5.07	4.96	4.03	4.28	4.34	4.29	5.47	4.95	4.82
KWF	4.55	4.49	4.39	4.53	5.51	4.76	4.60	3.71	3.91	4.21	4.54	5.57	4.86	4.90
Puri & Sen INT	4.05	4.26	4.50	4.51	5.28	5.08	5.05	4.13	4.10	4.14	4.24	5.53	4.88	4.83
Puri & Sen	3.93	4.28	4.58	4.72	5.45	4.89	4.83	3.97	4.00	4.17	4.46	5.46	4.76	4.55
INT	5.38	5.16	4.93	4.71	5.51	5.19	5.12	5.44	4.95	4.57	4.50	5.68	5.00	5.05
ART INT	5.95	5.61	5.26	5.01	5.86	5.40	5.41	5.77	5.47	5.09	4.99	5.98	5.20	5.38
Koch	4.55	4.49	4.39	4.53	5.51	4.76	4.60	3.71	3.91	4.21	4.54	5.57	4.86	4.90
ATS	7.87	6.90	6.01	5.69	6.10	5.40	5.55	15.83	12.06	8.65	7.30	7.13	6.25	5.80
large design (4*6)														
parametric	4.46	4.86	5.12	4.94	4.78	5.31	4.63	4.60	4.67	4.70	4.96	4.94	5.00	4.60
parametric HF-adj														
van der Waerden	3.38	4.05	4.62	4.65	4.67	4.85	4.47	3.23	3.75	4.34	4.81	4.83	4.99	4.45
KWF	3.58	4.12	4.59	4.78	4.70	4.86	4.62	3.36	3.94	4.36	4.79	5.01	4.56	4.37
Puri & Sen INT	3.28	3.86	4.54	4.66	4.66	5.00	4.65	3.31	3.93	4.36	4.78	4.83	4.80	4.52
Puri & Sen	3.46	4.08	4.62	4.78	4.55	4.91	4.42	2.91	3.56	4.19	4.74	4.97	4.84	4.49
INT	4.56	4.97	5.17	4.99	4.81	5.26	4.82	4.60	4.83	4.83	5.00	5.07	5.06	4.53
ART INT	4.78	5.22	5.35	5.16	5.33	5.51	5.05	5.26	5.29	5.16	5.38	5.50	5.43	5.03
Koch	3.58	4.12	4.59	4.78	4.70	4.86	4.62	3.36	3.94	4.36	4.79	5.01	4.56	4.37
ATS	7.05	6.70	6.20	5.90	5.29	5.29	4.80	12.60	9.85	7.33	7.02	6.44	5.90	5.50



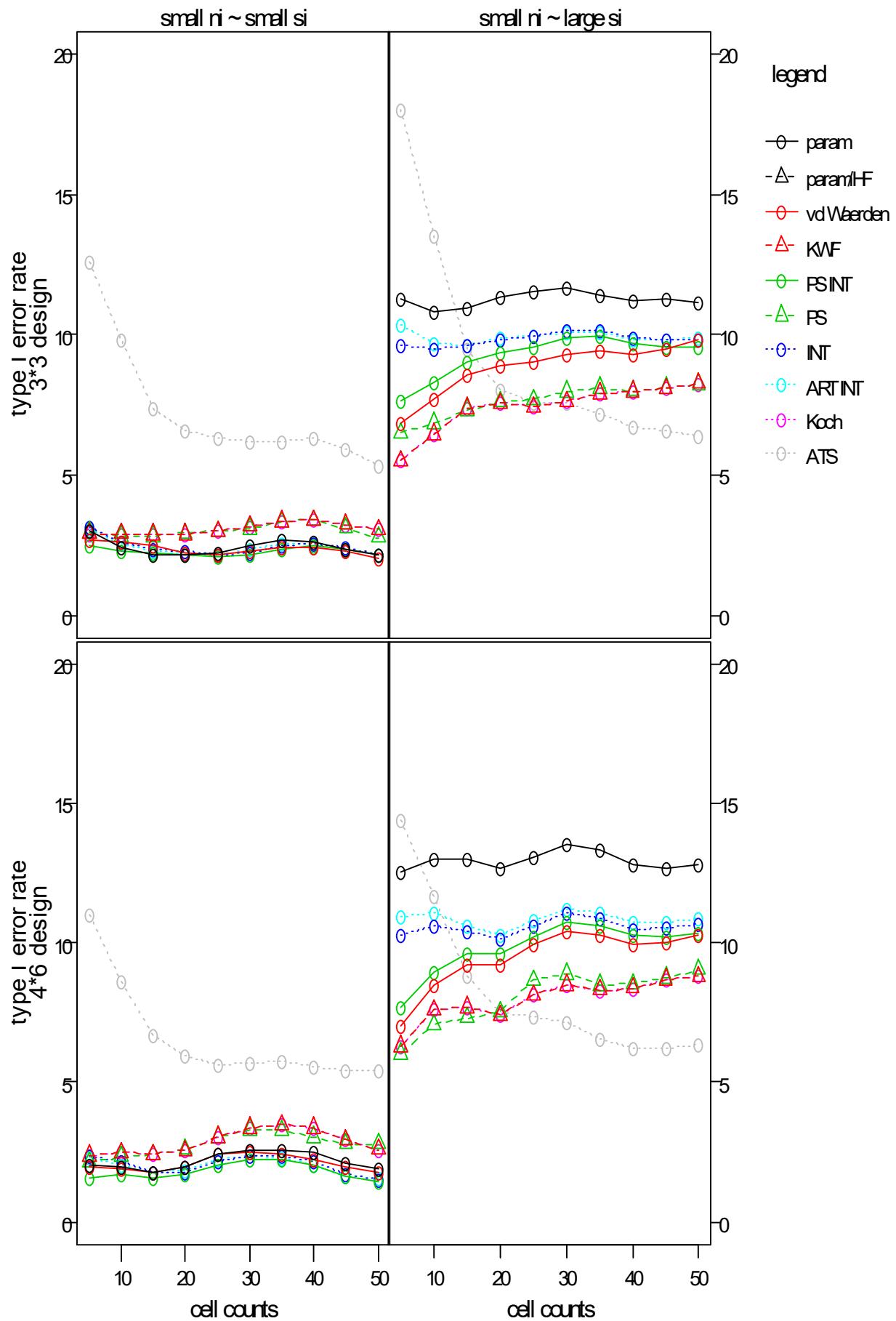
1. 2. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.38	6.46	6.25	6.09	5.79	6.19	5.33	5.90	5.16	4.51	4.28	4.47	4.66	4.80
parametric HF-adj														
van der Waerden	5.01	5.42	5.49	5.39	5.11	5.25	4.92	4.33	4.30	4.33	4.31	4.33	4.09	4.22
KWF	5.46	5.86	6.10	6.06	5.29	5.67	5.47	4.31	4.84	5.25	5.25	5.17	5.09	5.72
Puri & Sen INT	4.84	5.39	5.36	5.14	4.80	5.06	4.63	4.67	4.35	4.00	3.86	3.99	3.96	3.97
Puri & Sen	5.13	5.78	5.83	5.57	5.26	5.83	5.45	4.96	5.09	5.04	5.06	5.29	5.11	5.64
INT	6.11	6.12	5.74	5.37	4.99	5.15	4.74	5.67	4.88	4.26	4.14	4.15	4.03	4.07
ART INT	6.26	6.20	5.80	5.41	4.90	5.26	4.80	5.99	5.05	4.34	4.22	4.19	3.99	4.22
Koch	5.46	5.86	6.10	6.06	5.29	5.67	5.47	4.31	4.84	5.25	5.25	5.17	5.09	5.72
ATS	9.37	8.66	7.47	6.54	5.79	6.10	5.62	17.30	12.81	9.07	7.64	6.42	6.09	6.08
large design (4*6)														
parametric	6.03	6.04	6.21	6.11	6.04	6.12	6.22	4.91	5.66	6.05	5.70	5.56	5.32	5.12
parametric HF-adj														
van der Waerden	4.37	4.69	5.12	5.12	5.15	4.91	5.00	3.55	4.20	4.71	4.78	4.49	4.61	4.13
KWF	4.33	4.74	5.36	5.64	5.21	5.55	5.67	3.66	4.26	4.80	5.12	5.55	5.45	4.87
Puri & Sen INT	4.10	4.45	4.96	5.01	4.71	4.94	4.82	3.26	3.91	4.56	4.54	4.20	4.29	3.88
Puri & Sen	4.53	4.85	5.43	5.61	5.39	5.50	5.52	3.65	4.30	4.96	5.27	5.47	5.10	4.83
INT	5.37	5.35	5.45	5.25	4.85	5.09	4.92	4.45	4.71	5.00	4.76	4.31	4.45	4.13
ART INT	5.43	5.29	5.41	5.34	4.80	4.89	4.85	4.58	4.83	4.99	4.76	4.33	4.46	3.96
Koch	4.33	4.74	5.36	5.64	5.21	5.55	5.67	3.66	4.26	4.80	5.12	5.55	5.45	4.87
ATS	7.54	6.95	6.71	6.40	5.65	5.53	5.53	9.48	7.97	6.58	6.04	6.30	5.80	5.38



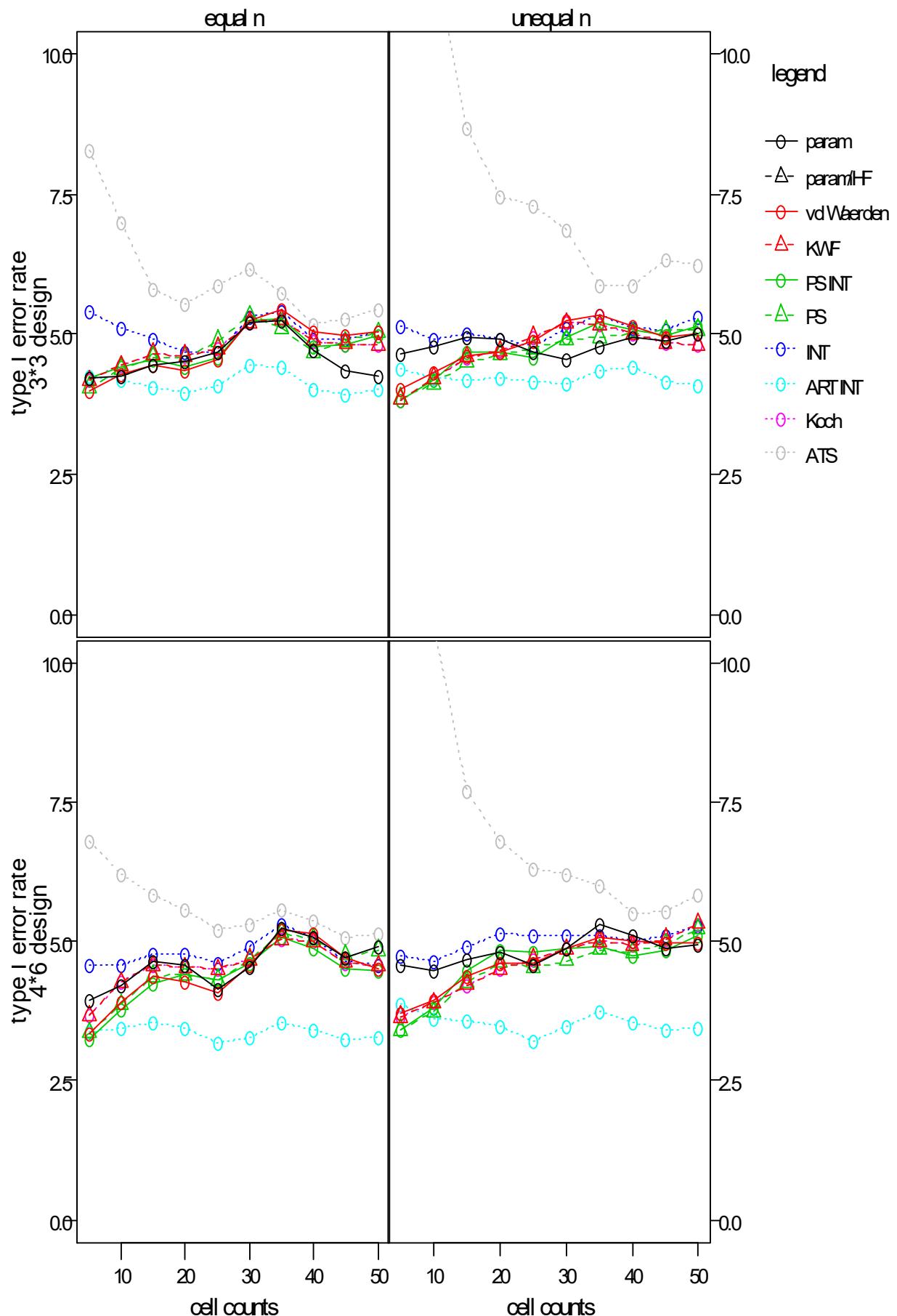
1. 2. 2. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.99	2.44	2.16	2.16	2.49	2.59	2.17	11.26	10.81	10.95	11.32	11.65	11.21	11.16
parametric HF-adj														
van der Waerden	2.68	2.61	2.45	2.21	2.28	2.42	2.01	6.86	7.71	8.55	8.89	9.28	9.30	9.80
KWF	2.90	2.91	2.88	2.88	3.17	3.40	3.05	5.49	6.45	7.38	7.54	7.62	7.97	8.25
Puri & Sen INT	2.49	2.28	2.21	2.16	2.14	2.45	2.15	7.66	8.30	9.01	9.36	9.86	9.68	9.58
Puri & Sen	2.95	2.81	2.83	2.92	3.09	3.40	2.78	6.48	6.85	7.31	7.60	7.96	7.99	8.23
INT	3.14	2.62	2.33	2.26	2.24	2.55	2.16	9.62	9.51	9.64	9.84	10.15	9.91	9.83
ART INT	3.09	2.52	2.29	2.24	2.35	2.54	2.12	10.36	9.71	9.60	9.89	10.10	9.81	9.87
Koch	2.90	2.91	2.88	2.88	3.17	3.40	3.05	5.49	6.45	7.38	7.54	7.62	7.97	8.25
ATS	12.59	9.81	7.39	6.57	6.16	6.29	5.35	17.98	13.51	9.51	8.01	7.56	6.74	6.41
large design (4*6)														
parametric	2.05	1.95	1.77	2.00	2.54	2.51	1.92	12.53	13.02	13.03	12.67	13.51	12.78	12.82
parametric HF-adj														
van der Waerden	1.95	1.89	1.74	1.96	2.50	2.25	1.77	7.01	8.50	9.19	9.24	10.44	9.95	10.30
KWF	2.37	2.48	2.41	2.54	3.38	3.36	2.60	6.30	7.59	7.70	7.39	8.49	8.38	8.80
Puri & Sen INT	1.58	1.70	1.60	1.69	2.21	2.04	1.45	7.66	8.97	9.61	9.59	10.71	10.26	10.33
Puri & Sen	2.15	2.33	2.41	2.60	3.31	3.04	2.80	6.04	7.07	7.31	7.53	8.88	8.52	9.04
INT	2.38	2.15	1.75	1.75	2.34	2.14	1.52	10.26	10.59	10.41	10.12	11.07	10.50	10.67
ART INT	2.27	2.05	1.76	1.86	2.35	2.01	1.58	10.96	11.08	10.59	10.25	11.21	10.74	10.87
Koch	2.37	2.48	2.41	2.54	3.38	3.36	2.60	6.30	7.59	7.70	7.39	8.49	8.38	8.80
ATS	11.02	8.64	6.66	5.95	5.66	5.55	5.45	14.40	11.69	8.84	7.49	7.14	6.24	6.33



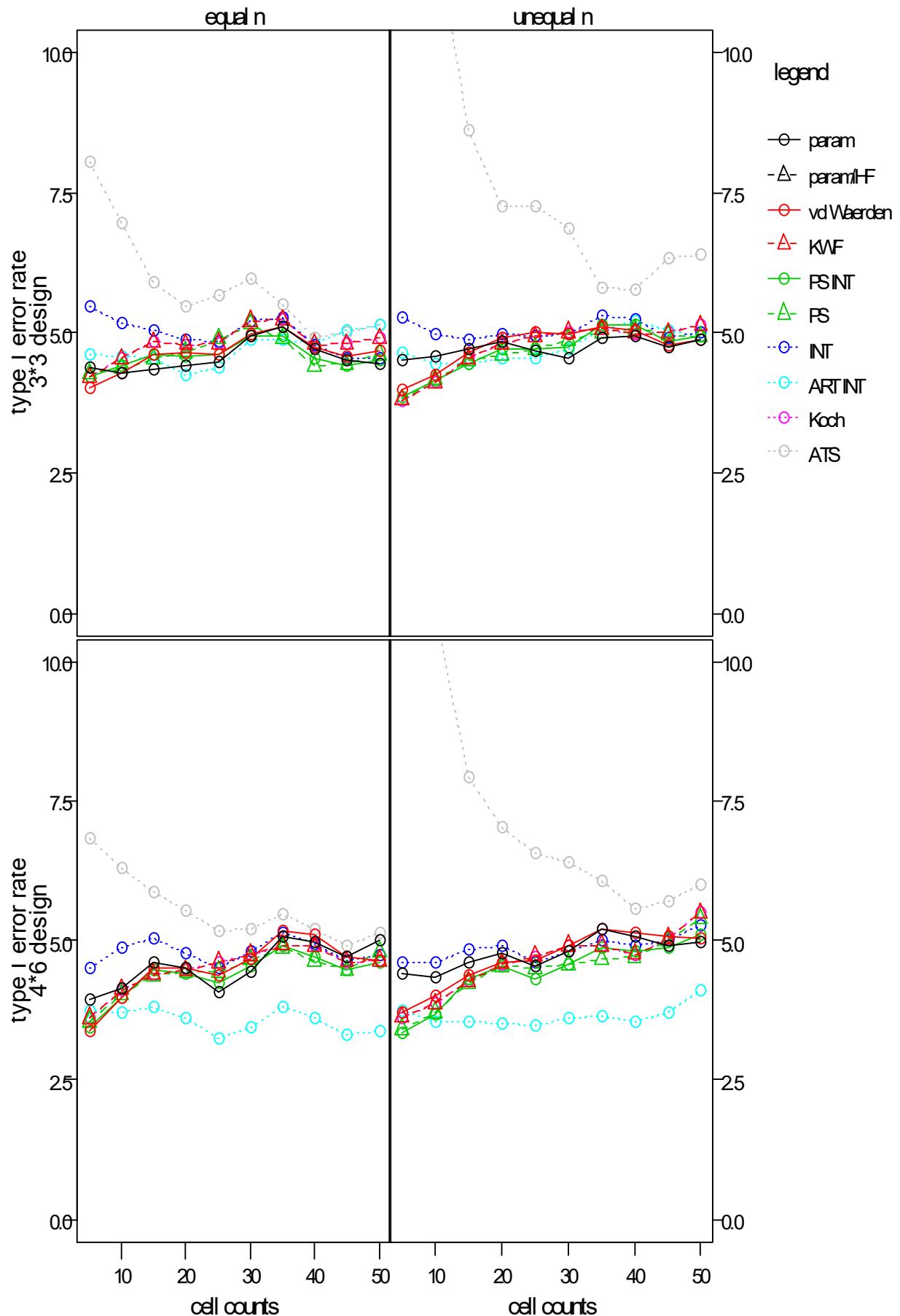
1. 2. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.20	4.26	4.45	4.50	5.19	4.72	4.25	4.63	4.79	4.94	4.91	4.53	4.95	5.02
parametric HF-adj														
van der Waerden	3.98	4.29	4.44	4.34	5.25	5.03	5.05	4.02	4.31	4.60	4.66	5.24	5.14	5.02
KWF	4.17	4.43	4.65	4.61	5.21	4.89	4.80	3.83	4.22	4.59	4.70	5.20	5.00	4.80
Puri & Sen INT	4.23	4.40	4.56	4.42	5.24	4.79	4.97	3.83	4.17	4.69	4.69	4.94	5.06	5.14
Puri & Sen	4.05	4.38	4.59	4.59	5.33	4.67	5.03	3.85	4.10	4.49	4.64	4.90	5.01	5.07
INT	5.39	5.12	4.92	4.67	5.30	4.92	5.03	5.14	4.92	5.00	4.90	5.12	5.12	5.29
ART INT	4.25	4.18	4.05	3.94	4.46	4.03	4.00	4.37	4.20	4.19	4.22	4.11	4.41	4.08
Koch	4.17	4.43	4.65	4.61	5.21	4.89	4.80	3.83	4.22	4.59	4.70	5.20	5.00	4.80
ATS	8.26	7.00	5.80	5.52	6.15	5.18	5.42	14.90	11.75	8.66	7.44	6.85	5.88	6.23
large design (4*6)														
parametric	3.95	4.21	4.64	4.58	4.53	5.06	4.90	4.58	4.46	4.66	4.81	4.88	5.12	4.95
parametric HF-adj														
van der Waerden	3.33	3.90	4.38	4.27	4.56	5.14	4.52	3.72	3.95	4.39	4.62	4.86	5.01	4.97
KWF	3.66	4.26	4.57	4.53	4.67	5.00	4.57	3.65	3.90	4.22	4.51	4.86	4.93	5.32
Puri & Sen INT	3.26	3.76	4.25	4.41	4.60	4.88	4.47	3.40	3.81	4.46	4.84	4.88	4.75	5.09
Puri & Sen	3.36	3.86	4.38	4.41	4.66	5.04	4.84	3.41	3.73	4.28	4.62	4.65	4.81	5.22
INT	4.57	4.59	4.78	4.76	4.91	5.07	4.57	4.73	4.65	4.89	5.15	5.12	5.01	5.27
ART INT	3.37	3.45	3.54	3.46	3.29	3.42	3.28	3.87	3.62	3.59	3.48	3.48	3.55	3.45
Koch	3.66	4.26	4.57	4.53	4.67	5.00	4.57	3.65	3.90	4.22	4.51	4.86	4.93	5.32
ATS	6.79	6.20	5.84	5.56	5.29	5.36	5.15	14.14	10.70	7.70	6.81	6.20	5.50	5.82



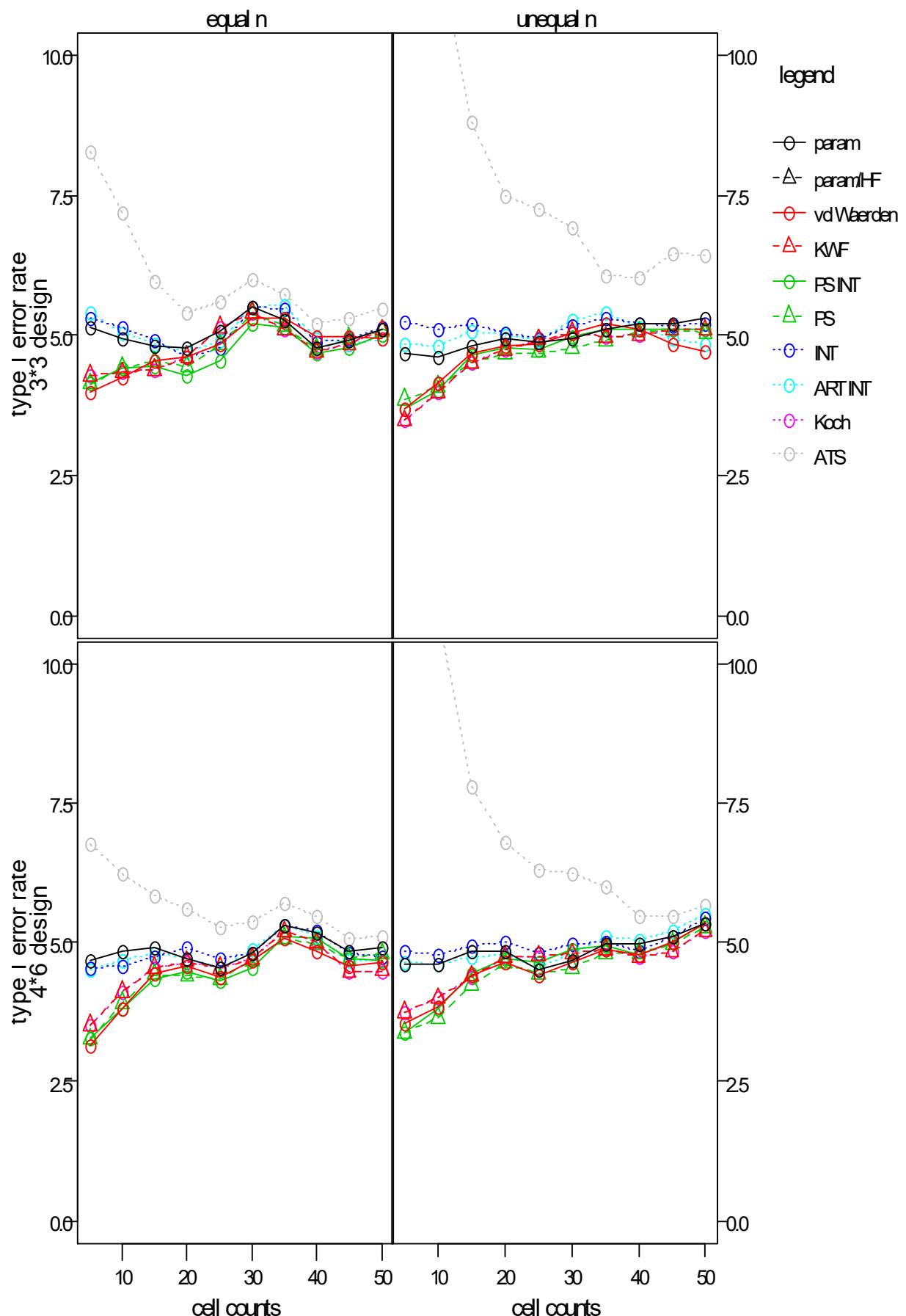
1. 2. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.37	4.28	4.35	4.40	4.95	4.72	4.43	4.50	4.59	4.71	4.84	4.56	4.94	4.87
parametric HF-adj														
van der Waerden	4.02	4.28	4.61	4.64	4.96	4.74	4.68	3.97	4.24	4.65	4.92	4.99	5.03	4.89
KWF	4.20	4.53	4.83	4.79	5.21	4.79	4.90	3.80	4.12	4.53	4.80	5.01	4.99	5.13
Puri & Sen INT	4.22	4.40	4.61	4.58	4.95	4.53	4.50	3.86	4.15	4.46	4.70	4.75	5.15	4.95
Puri & Sen	4.27	4.36	4.54	4.65	5.15	4.40	4.62	3.81	4.16	4.50	4.61	4.88	5.06	4.92
INT	5.47	5.16	5.05	4.88	5.22	4.79	4.55	5.27	4.96	4.86	4.99	4.96	5.25	5.02
ART INT	4.62	4.58	4.55	4.26	4.86	4.81	5.15	4.64	4.44	4.45	4.54	4.70	5.19	4.93
Koch	4.20	4.53	4.83	4.79	5.21	4.79	4.90	3.80	4.12	4.53	4.80	5.01	4.99	5.13
ATS	8.04	6.97	5.91	5.47	5.95	4.92	5.15	15.75	12.26	8.61	7.26	6.84	5.76	6.38
large design (4*6)														
parametric	3.93	4.14	4.60	4.51	4.45	4.96	4.99	4.40	4.34	4.61	4.77	4.81	5.06	4.97
parametric HF-adj														
van der Waerden	3.38	3.99	4.50	4.51	4.67	5.10	4.65	3.70	4.00	4.36	4.60	4.90	5.15	5.05
KWF	3.61	4.12	4.39	4.46	4.74	4.89	4.64	3.62	3.86	4.26	4.59	4.91	4.75	5.50
Puri & Sen INT	3.43	3.96	4.46	4.41	4.55	4.72	4.60	3.33	3.67	4.32	4.54	4.56	4.80	5.10
Puri & Sen	3.55	4.03	4.38	4.44	4.65	4.64	4.79	3.42	3.71	4.24	4.54	4.58	4.71	5.40
INT	4.51	4.88	5.04	4.76	4.79	4.95	4.74	4.62	4.60	4.84	4.90	4.80	4.89	5.27
ART INT	3.75	3.72	3.80	3.60	3.44	3.60	3.39	3.73	3.56	3.53	3.51	3.62	3.54	4.10
Koch	3.61	4.12	4.39	4.46	4.74	4.89	4.64	3.62	3.86	4.26	4.59	4.91	4.75	5.50
ATS	6.82	6.31	5.86	5.54	5.20	5.22	5.15	14.44	10.90	7.92	7.04	6.41	5.58	6.00



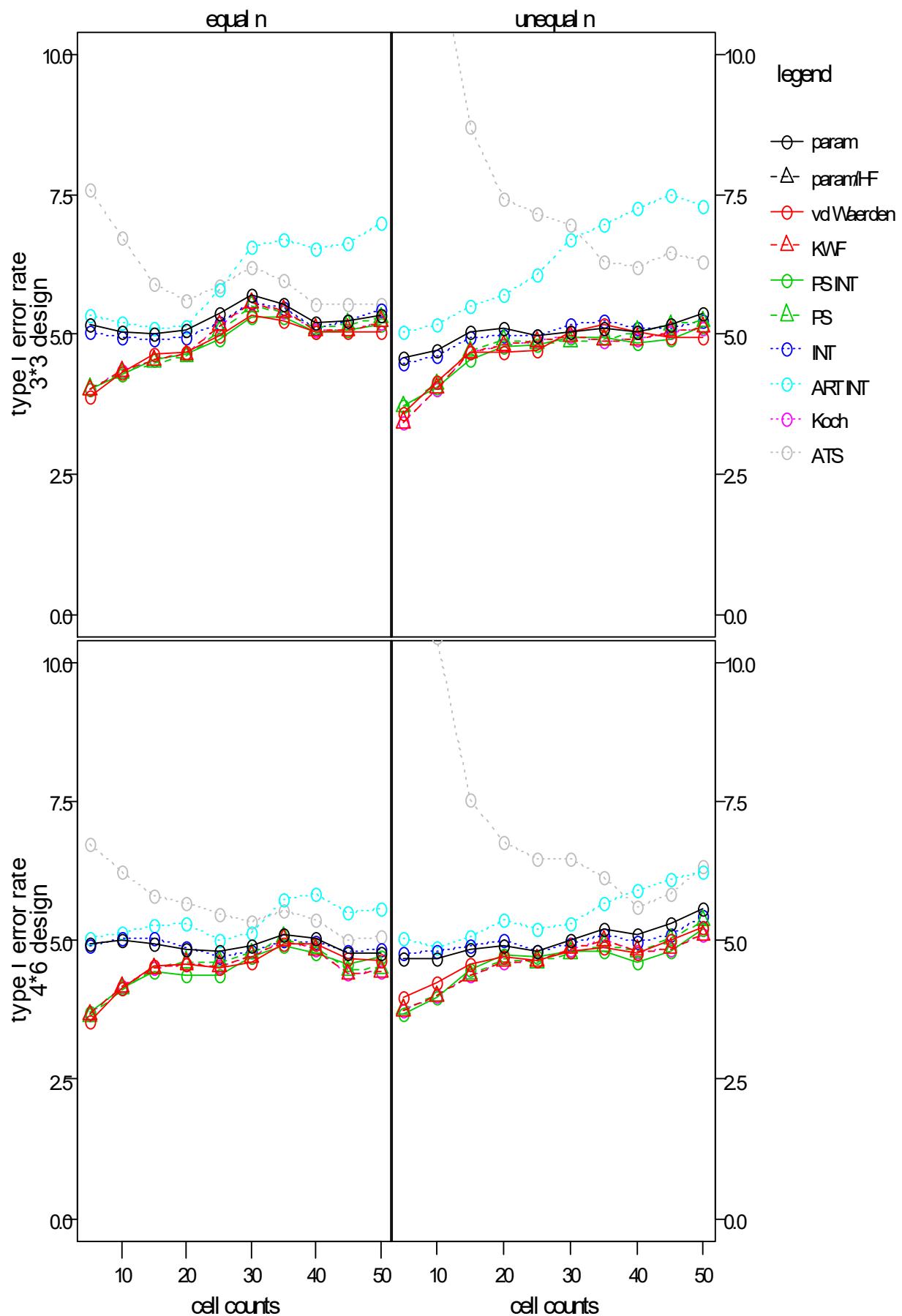
1. 2. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.15	4.95	4.80	4.76	5.50	4.79	5.12	4.67	4.61	4.81	4.94	4.94	5.20	5.30
parametric HF-adj														
van der Waerden	3.98	4.24	4.55	4.61	5.30	4.99	4.95	3.70	4.14	4.67	4.81	5.04	5.12	4.72
KWF	4.28	4.33	4.38	4.61	5.41	4.70	5.10	3.48	3.98	4.50	4.74	5.04	5.00	5.10
Puri & Sen INT	4.16	4.42	4.46	4.28	5.21	4.66	5.02	3.68	4.03	4.65	4.78	4.99	5.10	5.12
Puri & Sen	4.13	4.41	4.54	4.45	5.38	4.75	5.08	3.85	4.09	4.51	4.67	4.76	5.06	5.03
INT	5.32	5.14	4.91	4.61	5.49	4.89	5.13	5.24	5.12	5.21	5.05	5.16	5.22	5.22
ART INT	5.39	5.04	4.84	4.71	5.51	4.95	4.93	4.85	4.82	5.06	5.01	5.28	5.15	4.83
Koch	4.28	4.33	4.38	4.61	5.41	4.70	5.10	3.48	3.98	4.50	4.74	5.04	5.00	5.10
ATS	8.29	7.17	5.96	5.41	6.00	5.22	5.48	15.09	11.95	8.80	7.47	6.92	6.03	6.43
large design (4*6)														
parametric	4.67	4.85	4.92	4.72	4.81	5.17	4.90	4.60	4.62	4.83	4.84	4.67	4.96	5.35
parametric HF-adj														
van der Waerden	3.15	3.80	4.45	4.58	4.66	4.85	4.65	3.55	3.85	4.42	4.64	4.64	4.78	5.33
KWF	3.51	4.11	4.54	4.65	4.71	5.00	4.49	3.75	4.00	4.39	4.74	4.80	4.74	5.20
Puri & Sen INT	3.28	3.81	4.33	4.46	4.55	5.08	4.67	3.38	3.80	4.44	4.70	4.88	4.76	5.34
Puri & Sen	3.26	3.91	4.42	4.40	4.66	4.96	4.80	3.38	3.65	4.24	4.62	4.54	4.81	5.27
INT	4.53	4.57	4.75	4.89	4.81	5.21	4.75	4.85	4.76	4.95	5.01	4.98	4.84	5.43
ART INT	4.52	4.66	4.82	4.69	4.86	5.09	4.67	4.65	4.60	4.75	4.78	4.79	5.03	5.52
Koch	3.51	4.11	4.54	4.65	4.71	5.00	4.49	3.75	4.00	4.39	4.74	4.80	4.74	5.20
ATS	6.75	6.22	5.85	5.59	5.36	5.46	5.12	14.30	10.88	7.80	6.79	6.22	5.46	5.68



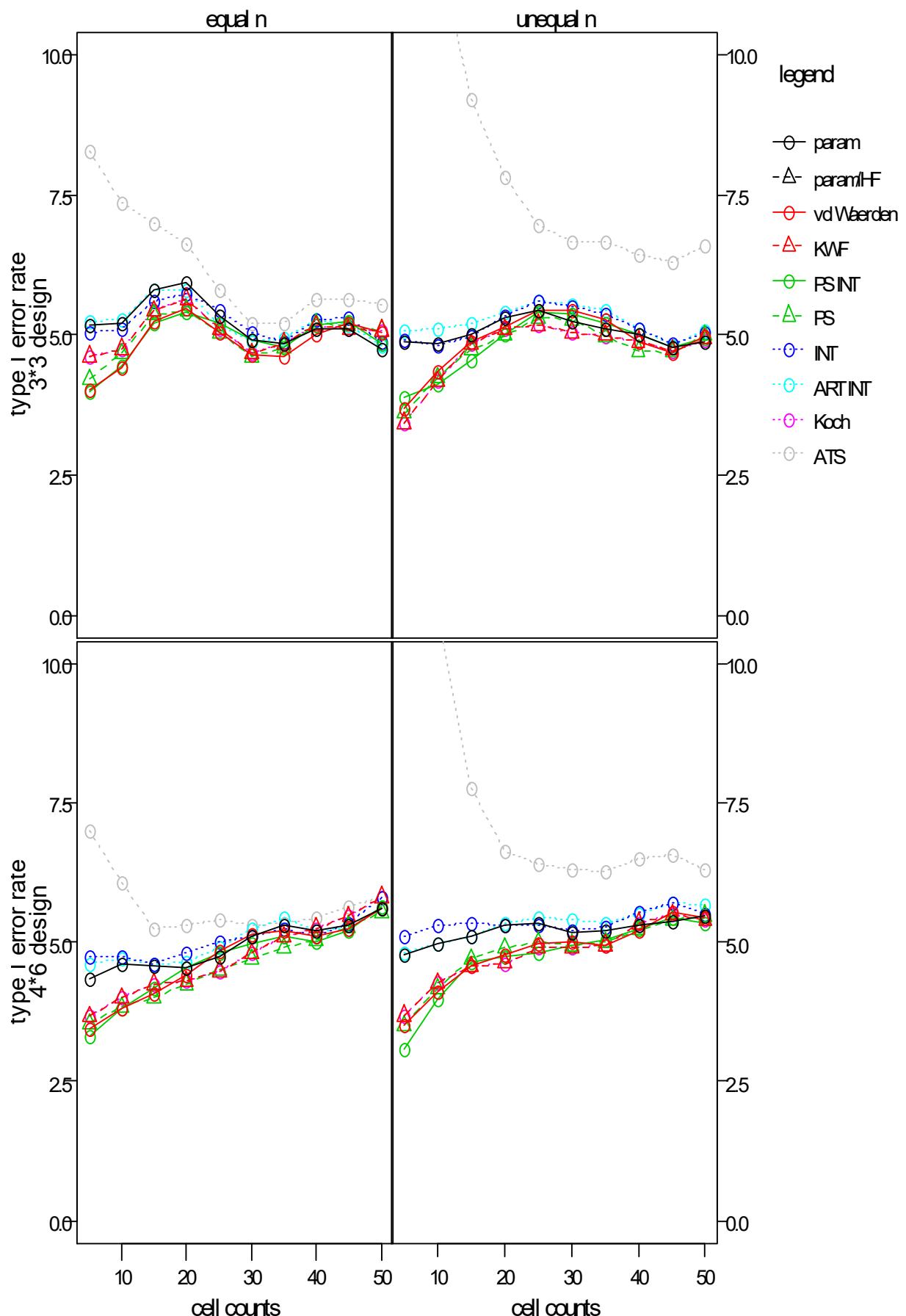
1. 2. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.18	5.05	5.00	5.06	5.69	5.20	5.35	4.58	4.70	5.05	5.11	5.05	5.05	5.37
parametric HF-adj														
van der Waerden	3.88	4.31	4.64	4.68	5.33	5.05	5.03	3.58	4.16	4.66	4.69	5.03	5.05	4.93
KWF	4.00	4.34	4.53	4.64	5.56	5.08	5.22	3.43	4.03	4.66	4.80	4.96	4.91	5.12
Puri & Sen INT	4.00	4.28	4.53	4.64	5.30	5.03	5.17	3.72	4.06	4.56	4.76	4.93	4.84	5.15
Puri & Sen	4.02	4.30	4.49	4.60	5.50	5.09	5.30	3.70	4.11	4.70	4.90	4.86	5.04	5.23
INT	5.05	4.95	4.92	4.95	5.58	5.12	5.43	4.48	4.61	4.95	4.97	5.17	5.12	5.25
ART INT	5.34	5.21	5.10	5.15	6.55	6.53	6.99	5.05	5.16	5.50	5.71	6.69	7.25	7.30
Koch	4.00	4.34	4.53	4.64	5.56	5.08	5.22	3.43	4.03	4.66	4.80	4.96	4.91	5.12
ATS	7.59	6.71	5.90	5.59	6.21	5.55	5.53	15.30	11.95	8.70	7.43	6.94	6.20	6.31
large design (4*6)														
parametric	4.95	5.01	4.95	4.84	4.89	5.05	4.77	4.67	4.67	4.83	4.92	5.00	5.12	5.57
parametric HF-adj														
van der Waerden	3.54	4.14	4.53	4.59	4.61	4.94	4.63	3.96	4.25	4.58	4.71	4.81	4.76	5.25
KWF	3.66	4.16	4.50	4.58	4.71	4.83	4.44	3.75	4.00	4.36	4.62	4.85	4.82	5.10
Puri & Sen INT	3.70	4.14	4.45	4.38	4.69	4.78	4.70	3.66	3.97	4.46	4.74	4.81	4.62	5.19
Puri & Sen	3.63	4.12	4.50	4.61	4.76	4.86	4.50	3.76	4.00	4.39	4.66	4.78	4.81	5.35
INT	4.92	5.04	5.05	4.86	4.81	4.96	4.84	4.78	4.79	4.90	4.99	4.95	4.96	5.45
ART INT	5.05	5.14	5.28	5.29	5.14	5.84	5.57	5.05	4.88	5.08	5.38	5.30	5.90	6.22
Koch	3.66	4.16	4.50	4.58	4.71	4.83	4.44	3.75	4.00	4.36	4.62	4.85	4.82	5.10
ATS	6.74	6.25	5.80	5.67	5.34	5.36	5.07	13.91	10.45	7.53	6.77	6.46	5.59	6.32



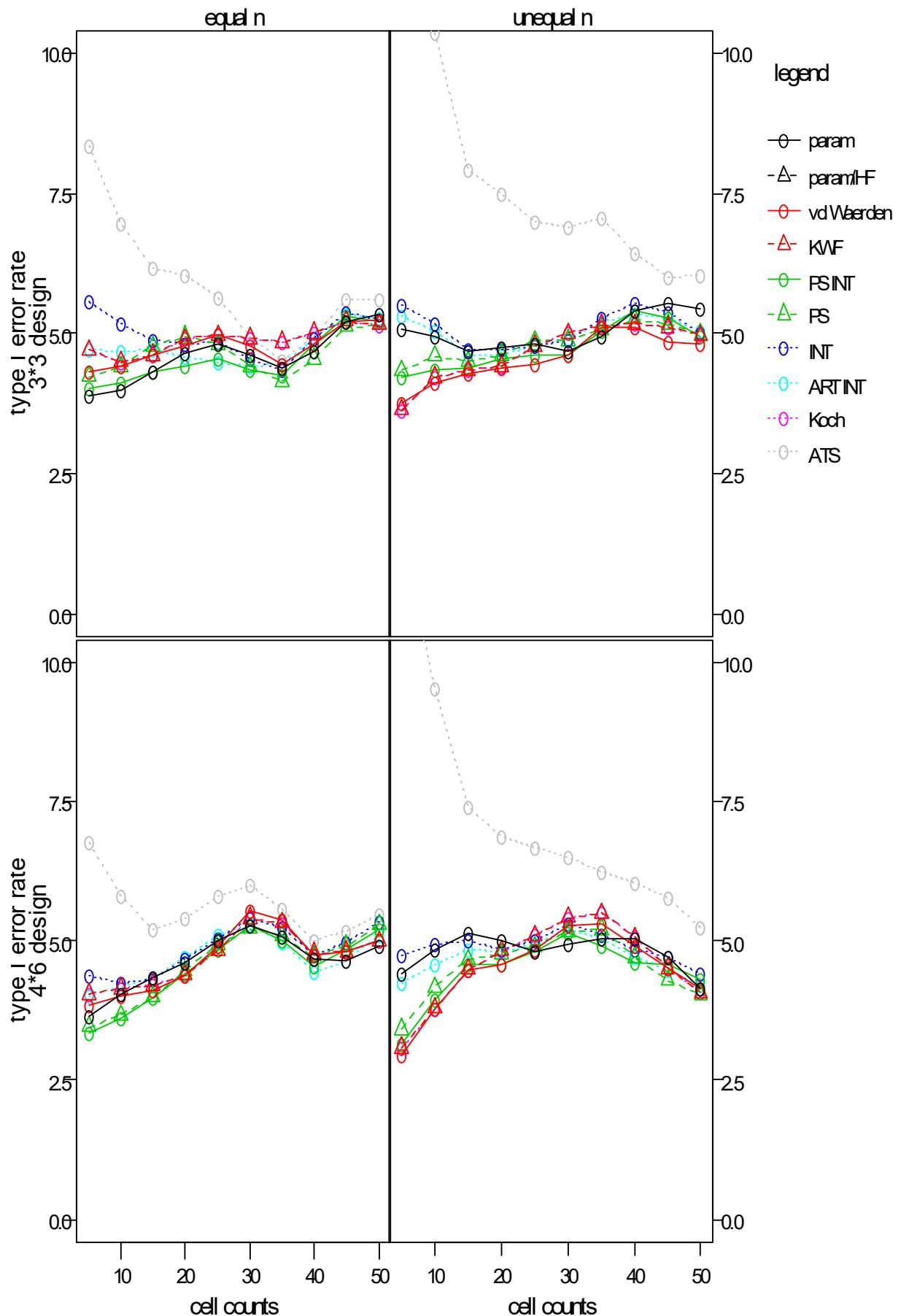
1. 2. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.17	5.19	5.79	5.94	4.90	5.12	4.75	4.87	4.84	5.00	5.31	5.25	5.01	4.87
parametric HF-adj														
van der Waerden	4.03	4.41	5.24	5.48	4.65	5.01	5.05	3.70	4.34	4.88	5.15	5.45	4.88	4.99
KWF	4.62	4.75	5.42	5.64	4.66	5.16	5.07	3.43	4.17	4.83	5.09	5.04	4.88	4.92
Puri & Sen INT	3.98	4.43	5.19	5.41	4.90	5.16	4.83	3.87	4.12	4.54	5.01	5.36	5.00	4.95
Puri & Sen	4.20	4.67	5.35	5.44	4.61	5.20	5.07	3.60	4.24	4.74	4.99	5.28	4.71	5.00
INT	5.05	5.11	5.59	5.73	5.05	5.26	4.88	4.92	4.81	4.97	5.35	5.50	5.11	5.04
ART INT	5.25	5.26	5.80	5.80	4.86	5.28	4.82	5.07	5.10	5.19	5.39	5.55	5.10	5.07
Koch	4.62	4.75	5.42	5.64	4.66	5.16	5.07	3.43	4.17	4.83	5.09	5.04	4.88	4.92
ATS	8.28	7.35	7.00	6.61	5.21	5.62	5.52	14.82	11.91	9.21	7.81	6.66	6.42	6.60
large design (4*6)														
parametric	4.35	4.61	4.59	4.54	5.10	5.20	5.60	4.78	4.97	5.09	5.29	5.17	5.30	5.47
parametric HF-adj														
van der Waerden	3.46	3.81	4.06	4.40	5.15	5.09	5.60	3.51	4.11	4.59	4.78	5.01	5.19	5.45
KWF	3.66	4.00	4.25	4.30	4.79	5.25	5.80	3.68	4.26	4.56	4.62	4.89	5.34	5.40
Puri & Sen INT	3.31	3.81	4.19	4.54	4.97	5.00	5.65	3.09	3.99	4.64	4.75	4.93	5.25	5.33
Puri & Sen	3.53	3.83	4.01	4.25	4.70	5.03	5.54	3.50	4.16	4.70	4.89	4.94	5.22	5.47
INT	4.75	4.74	4.62	4.81	5.12	5.12	5.79	5.10	5.30	5.35	5.32	5.22	5.53	5.50
ART INT	4.60	4.70	4.61	4.64	5.25	5.21	5.64	4.80	4.96	5.12	5.33	5.40	5.49	5.68
Koch	3.66	4.00	4.25	4.30	4.79	5.25	5.80	3.68	4.26	4.56	4.62	4.89	5.34	5.40
ATS	6.99	6.06	5.25	5.30	5.30	5.45	5.80	13.97	10.86	7.76	6.64	6.29	6.51	6.30



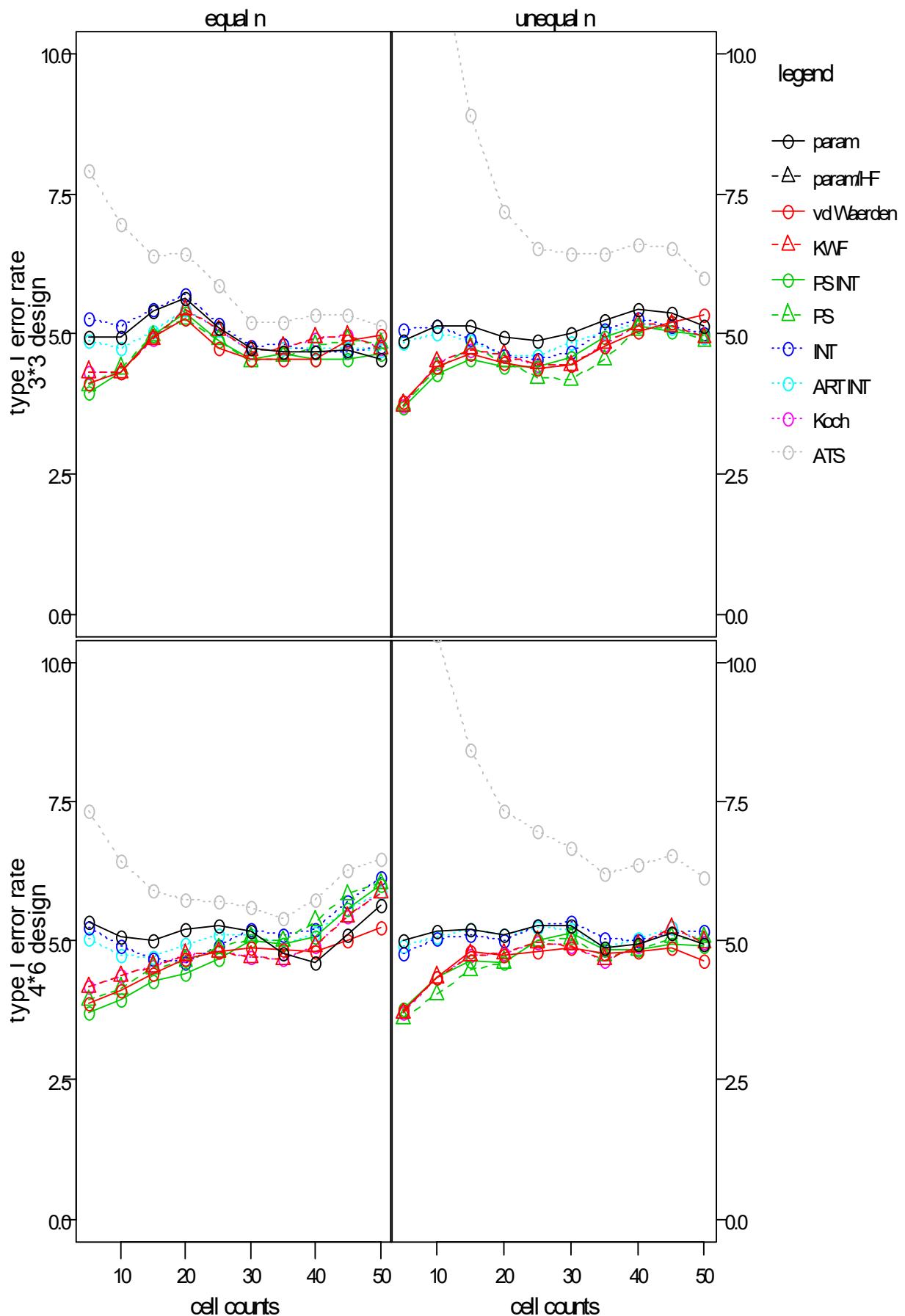
1. 2. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.87	3.99	4.32	4.65	4.62	4.69	5.33	5.08	4.95	4.69	4.75	4.67	5.40	5.45
parametric HF-adj														
van der Waerden	4.32	4.40	4.61	4.76	4.76	4.81	5.23	3.75	4.11	4.28	4.39	4.61	5.11	4.80
KWF	4.70	4.49	4.62	4.90	4.91	5.01	5.15	3.63	4.22	4.34	4.41	5.00	5.16	4.96
Puri & Sen INT	4.00	4.12	4.30	4.40	4.36	4.81	5.21	4.20	4.35	4.39	4.56	4.62	5.41	4.95
Puri & Sen	4.23	4.40	4.76	4.95	4.40	4.55	5.15	4.33	4.59	4.50	4.62	4.88	5.25	4.98
INT	5.57	5.18	4.88	4.80	4.56	4.91	5.25	5.50	5.16	4.71	4.71	4.88	5.55	5.01
ART INT	4.72	4.69	4.72	4.58	4.41	4.91	5.28	5.30	5.05	4.61	4.61	4.91	5.33	5.05
Koch	4.70	4.49	4.62	4.90	4.91	5.01	5.15	3.63	4.22	4.34	4.41	5.00	5.16	4.96
ATS	8.34	6.97	6.15	6.03	4.94	4.95	5.60	13.55	10.35	7.92	7.49	6.90	6.44	6.03
large design (4*6)														
parametric	3.65	4.04	4.35	4.60	5.27	4.68	4.92	4.41	4.84	5.15	4.99	4.94	5.03	4.13
parametric HF-adj														
van der Waerden	3.85	4.01	4.12	4.39	5.53	4.74	5.00	2.93	3.76	4.46	4.59	5.26	4.92	4.13
KWF	4.05	4.14	4.21	4.39	5.41	4.78	5.00	3.08	3.79	4.49	4.82	5.42	5.06	4.08
Puri & Sen INT	3.33	3.60	3.96	4.41	5.26	4.53	5.22	3.16	3.95	4.56	4.59	5.14	4.62	4.30
Puri & Sen	3.46	3.67	3.99	4.47	5.22	4.72	5.30	3.41	4.16	4.66	4.76	5.18	4.71	4.03
INT	4.37	4.25	4.30	4.67	5.42	4.74	5.33	4.75	4.95	4.99	4.85	5.31	4.83	4.41
ART INT	4.00	4.18	4.34	4.69	5.31	4.45	5.10	4.25	4.58	4.83	4.81	5.19	4.71	4.20
Koch	4.05	4.14	4.21	4.39	5.41	4.78	5.00	3.08	3.79	4.49	4.82	5.42	5.06	4.08
ATS	6.77	5.80	5.20	5.42	6.00	5.00	5.48	12.24	9.51	7.41	6.86	6.51	6.05	5.24



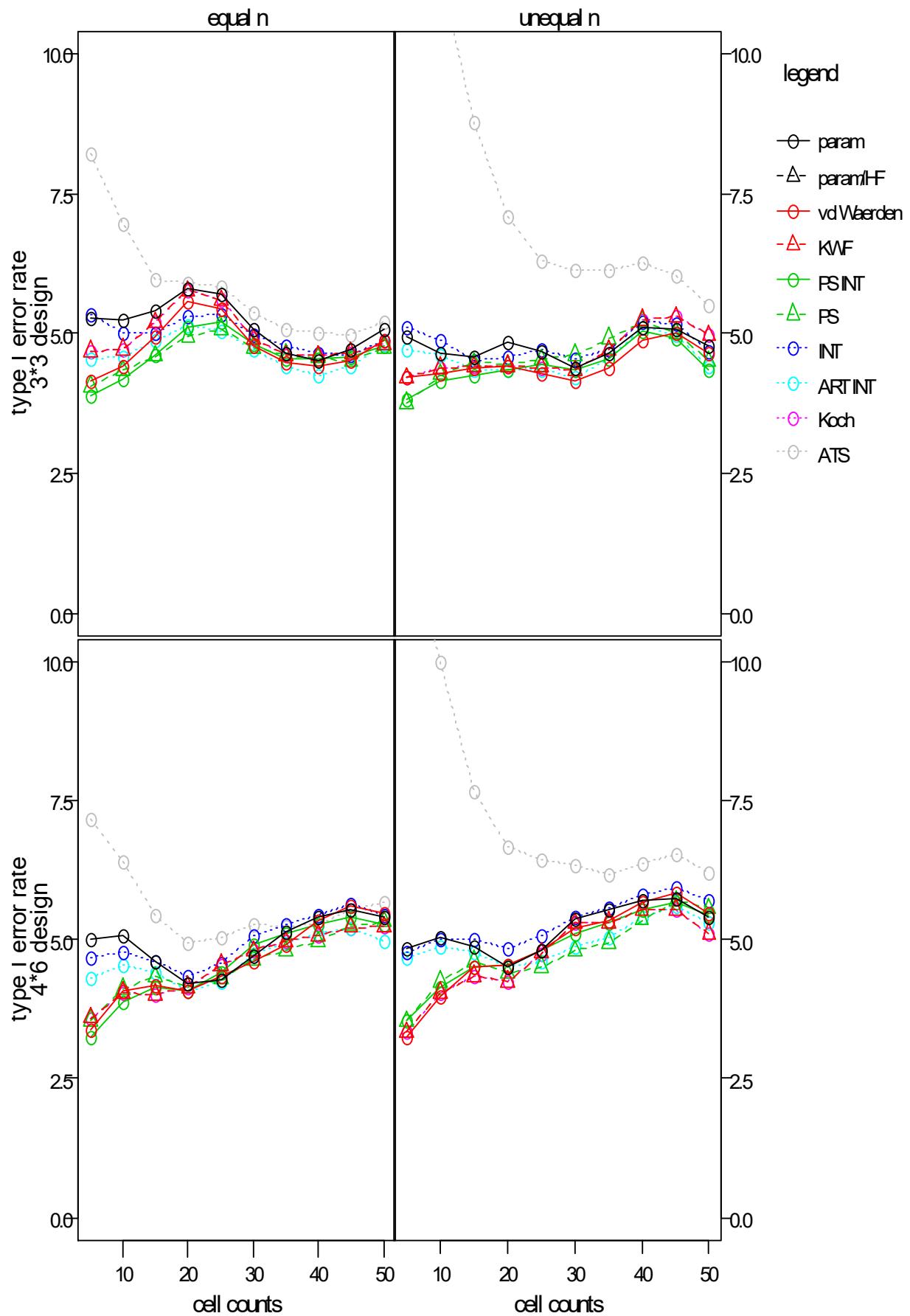
1. 2. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.95	4.95	5.39	5.64	4.73	4.68	4.53	4.86	5.15	5.15	4.95	5.00	5.44	5.13
parametric HF-adj														
van der Waerden	4.10	4.30	4.95	5.26	4.53	4.56	4.98	3.78	4.41	4.65	4.49	4.45	5.03	5.33
KWF	4.32	4.30	4.90	5.42	4.69	4.92	4.75	3.72	4.49	4.72	4.62	4.44	5.17	4.93
Puri & Sen INT	3.96	4.30	4.97	5.36	4.54	4.56	4.65	3.70	4.29	4.54	4.40	4.59	5.15	4.97
Puri & Sen	4.07	4.38	4.96	5.26	4.52	4.78	4.83	3.73	4.38	4.74	4.50	4.17	5.08	4.86
INT	5.27	5.14	5.44	5.70	4.76	4.69	4.77	5.07	5.14	4.92	4.62	4.69	5.26	5.02
ART INT	4.88	4.74	5.03	5.45	4.67	4.74	4.70	4.83	5.01	4.86	4.60	4.85	5.16	4.95
Koch	4.32	4.30	4.90	5.42	4.69	4.92	4.75	3.72	4.49	4.72	4.62	4.44	5.17	4.93
ATS	7.91	6.95	6.38	6.42	5.20	5.34	5.15	15.46	12.15	8.89	7.19	6.44	6.60	6.01
large design (4*6)														
parametric	5.34	5.08	5.01	5.19	5.16	4.62	5.64	5.02	5.17	5.21	5.09	5.26	4.94	4.95
parametric HF-adj														
van der Waerden	3.86	4.12	4.40	4.67	4.88	4.79	5.25	3.73	4.35	4.80	4.75	4.86	4.82	4.65
KWF	4.16	4.36	4.55	4.74	4.71	4.90	5.87	3.70	4.34	4.74	4.76	4.92	4.91	4.98
Puri & Sen INT	3.70	3.94	4.29	4.40	5.01	5.08	5.99	3.76	4.34	4.64	4.61	5.14	4.84	4.92
Puri & Sen	3.93	4.14	4.51	4.64	5.05	5.35	6.02	3.60	4.03	4.46	4.61	5.04	4.84	5.05
INT	5.24	4.90	4.68	4.62	5.20	5.20	6.14	4.77	5.03	5.12	5.00	5.35	5.02	5.17
ART INT	5.04	4.75	4.71	4.93	5.11	5.15	5.87	4.90	5.06	5.20	5.10	5.21	5.05	5.01
Koch	4.16	4.36	4.55	4.74	4.71	4.90	5.87	3.70	4.34	4.74	4.76	4.92	4.91	4.98
ATS	7.32	6.45	5.89	5.74	5.61	5.75	6.47	12.51	10.49	8.44	7.34	6.66	6.36	6.15



1. 2. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.28	5.25	5.41	5.80	5.06	4.51	5.07	4.94	4.64	4.58	4.83	4.38	5.10	4.76
parametric HF-adj														
van der Waerden	4.15	4.40	4.94	5.56	4.78	4.41	4.87	4.20	4.28	4.38	4.41	4.16	4.89	4.63
KWF	4.68	4.71	5.19	5.76	4.90	4.60	4.80	4.21	4.38	4.40	4.41	4.34	5.24	4.96
Puri & Sen INT	3.88	4.19	4.62	5.09	4.80	4.54	4.79	3.83	4.16	4.24	4.33	4.34	5.04	4.34
Puri & Sen	4.05	4.34	4.59	4.94	4.74	4.56	4.74	3.75	4.26	4.47	4.44	4.61	5.22	4.50
INT	5.35	5.01	5.01	5.32	4.97	4.65	4.89	5.10	4.86	4.51	4.59	4.55	5.19	4.66
ART INT	4.55	4.59	4.88	5.14	4.70	4.24	4.82	4.70	4.60	4.33	4.34	4.20	5.10	4.41
Koch	4.68	4.71	5.19	5.76	4.90	4.60	4.80	4.21	4.38	4.40	4.41	4.34	5.24	4.96
ATS	8.21	6.94	5.95	5.90	5.36	5.00	5.19	14.30	11.52	8.78	7.10	6.14	6.25	5.51
large design (4*6)														
parametric	5.00	5.06	4.61	4.22	4.71	5.41	5.40	4.85	5.03	4.88	4.51	5.38	5.71	5.40
parametric HF-adj														
van der Waerden	3.39	4.08	4.18	4.09	4.61	5.35	5.48	3.23	3.98	4.50	4.54	5.20	5.66	5.48
KWF	3.59	4.04	4.01	4.14	4.80	5.08	5.23	3.34	4.05	4.35	4.25	5.29	5.53	5.11
Puri & Sen INT	3.23	3.89	4.15	4.09	4.90	5.26	5.26	3.53	4.14	4.50	4.53	5.12	5.54	5.43
Puri & Sen	3.55	4.11	4.33	4.15	4.64	4.96	5.32	3.53	4.25	4.61	4.40	4.79	5.35	5.56
INT	4.66	4.78	4.60	4.35	5.08	5.45	5.43	4.76	4.99	4.99	4.84	5.41	5.80	5.71
ART INT	4.30	4.54	4.40	4.06	4.73	5.11	4.96	4.68	4.86	4.78	4.50	4.88	5.39	5.31
Koch	3.59	4.04	4.01	4.14	4.80	5.08	5.23	3.34	4.05	4.35	4.25	5.29	5.53	5.11
ATS	7.17	6.40	5.44	4.95	5.27	5.26	5.68	12.25	9.98	7.66	6.67	6.34	6.36	6.21

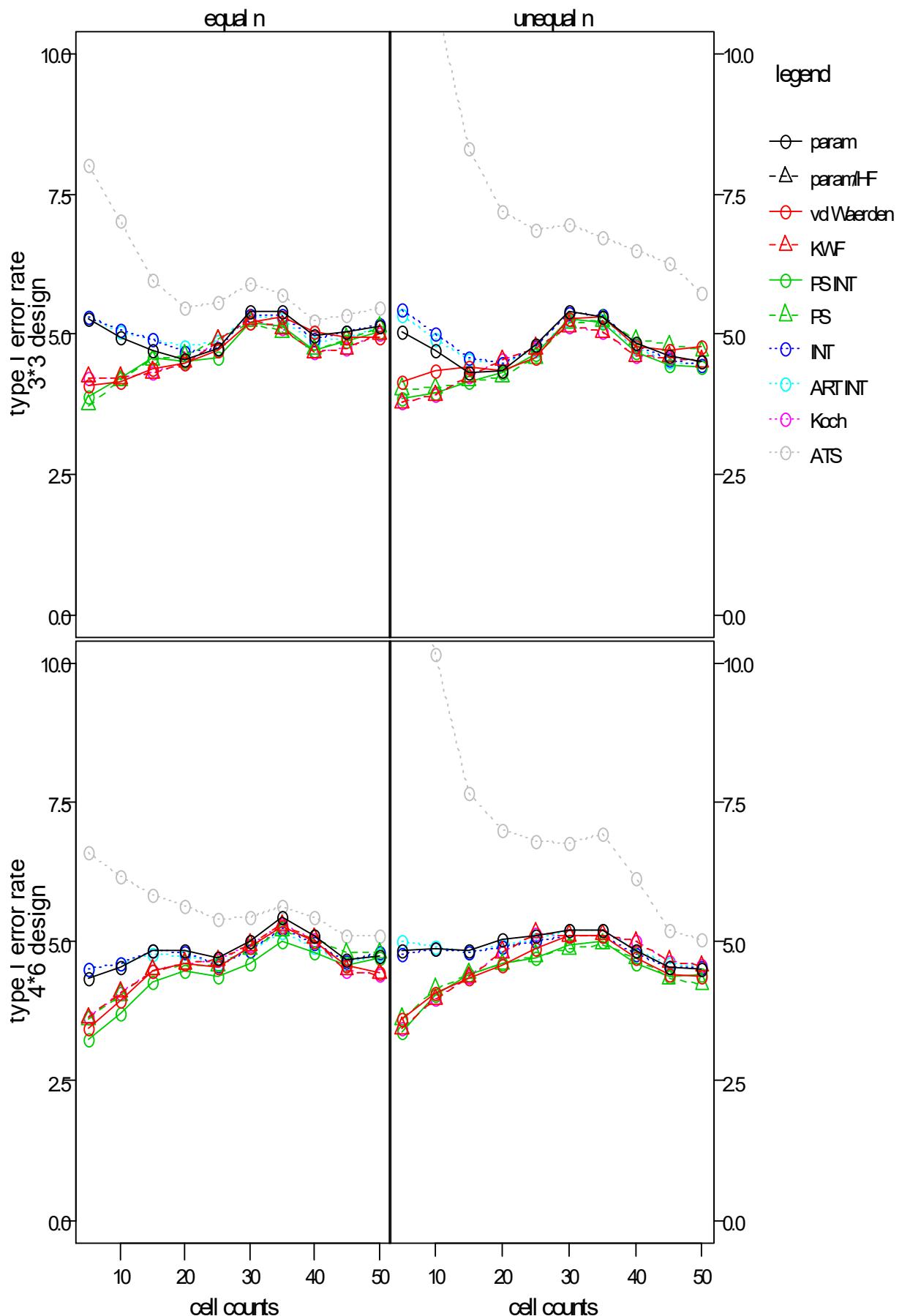


1. 3. Main effect A - AB significant (effects $ab_{ij}=0.5*s$)

1. 3. 1. equal correlations on B ($r=0.3$)

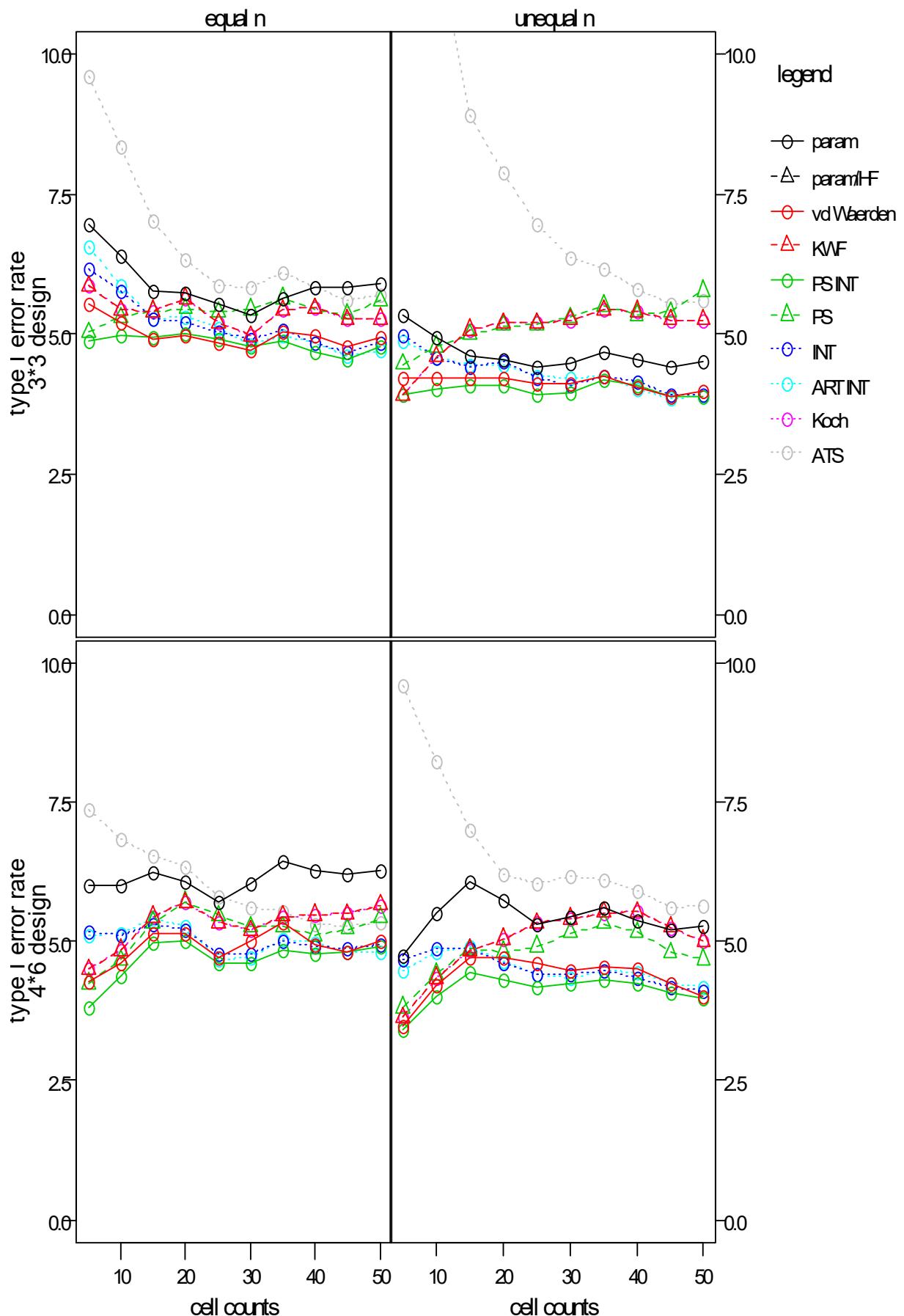
1. 3. 1. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.27	4.95	4.72	4.55	5.41	4.97	5.13	5.03	4.71	4.31	4.34	5.40	4.84	4.52
parametric HF-adj														
van der Waerden	4.08	4.15	4.38	4.47	5.21	5.03	4.93	4.15	4.33	4.41	4.36	5.26	4.78	4.78
KWF	4.23	4.22	4.31	4.49	5.26	4.66	5.00	3.78	3.91	4.24	4.54	5.14	4.62	4.51
Puri & Sen INT	3.90	4.21	4.59	4.50	5.19	4.70	5.03	3.85	3.94	4.14	4.30	5.28	4.67	4.42
Puri & Sen	3.73	4.17	4.54	4.61	5.22	4.72	5.12	4.02	4.04	4.16	4.24	5.21	4.90	4.70
INT	5.32	5.08	4.91	4.67	5.35	4.91	5.17	5.44	5.00	4.59	4.49	5.38	4.80	4.43
ART INT	5.32	5.04	4.91	4.79	5.35	4.84	5.15	5.34	4.90	4.54	4.47	5.25	4.75	4.45
Koch	4.23	4.22	4.31	4.49	5.26	4.66	5.00	3.78	3.91	4.24	4.54	5.14	4.62	4.51
ATS	8.01	7.01	5.95	5.47	5.91	5.25	5.47	14.02	11.00	8.31	7.19	6.95	6.49	5.74
large design (4*6)														
parametric	4.35	4.55	4.84	4.85	5.01	5.11	4.75	4.83	4.86	4.85	5.04	5.19	4.84	4.52
parametric HF-adj														
van der Waerden	3.45	3.94	4.47	4.60	4.91	5.00	4.45	3.60	4.06	4.34	4.59	5.11	4.71	4.37
KWF	3.63	4.09	4.49	4.61	4.94	5.05	4.42	3.45	3.96	4.36	4.81	5.11	5.00	4.57
Puri & Sen INT	3.25	3.70	4.26	4.47	4.61	4.82	4.69	3.38	4.03	4.41	4.60	4.93	4.61	4.40
Puri & Sen	3.60	4.05	4.49	4.59	4.86	5.05	4.80	3.61	4.14	4.42	4.60	4.88	4.69	4.25
INT	4.52	4.61	4.84	4.81	4.83	4.97	4.79	4.78	4.88	4.80	4.90	5.11	4.76	4.53
ART INT	4.50	4.62	4.77	4.75	4.84	4.92	4.77	5.02	4.92	4.79	4.94	5.20	4.84	4.53
Koch	3.63	4.09	4.49	4.61	4.94	5.05	4.42	3.45	3.96	4.36	4.81	5.11	5.00	4.57
ATS	6.60	6.16	5.84	5.64	5.45	5.43	5.12	12.33	10.14	7.67	6.99	6.78	6.12	5.05



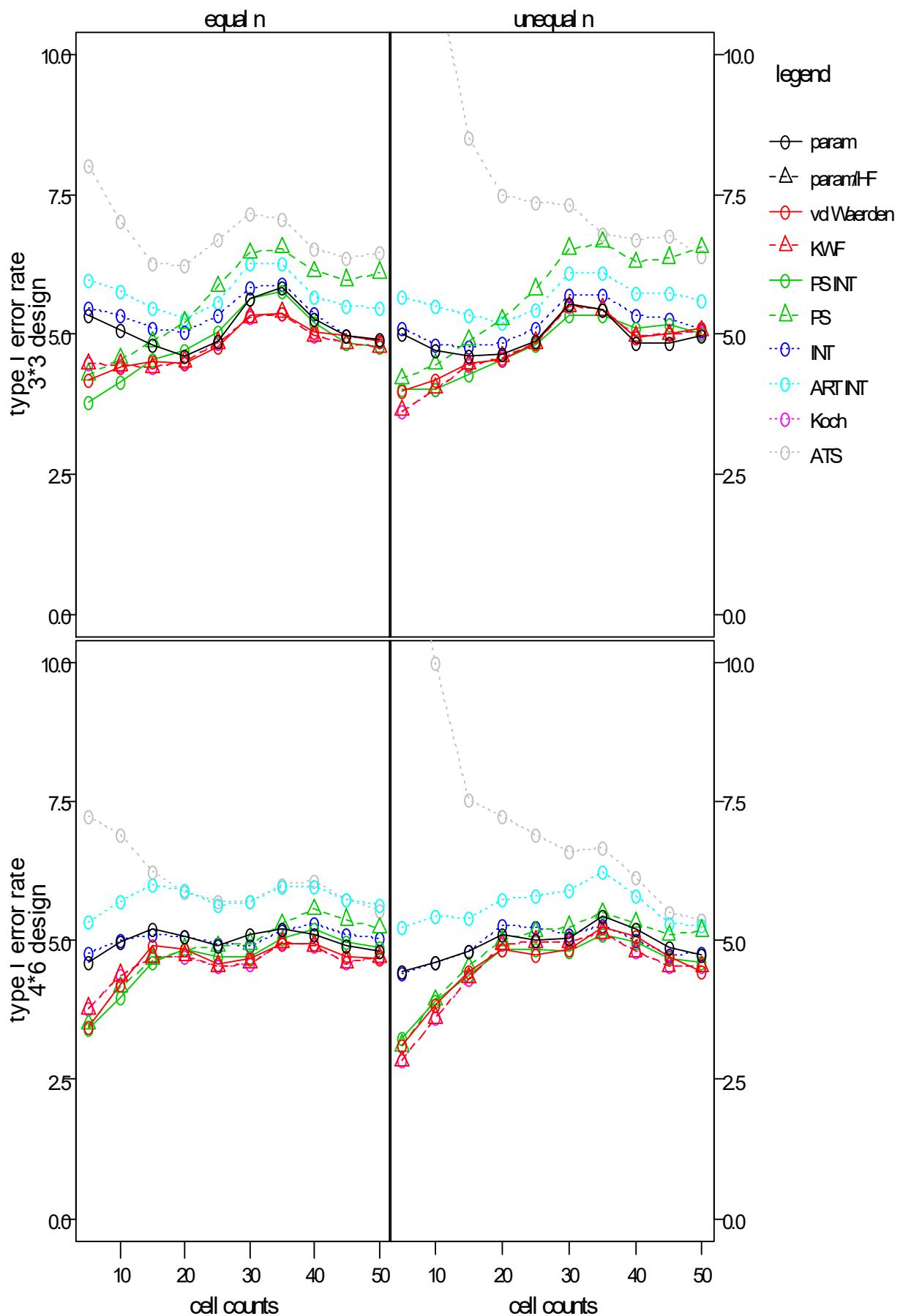
1. 3. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.95	6.38	5.75	5.72	5.34	5.84	5.90	5.34	4.94	4.61	4.54	4.49	4.53	4.50
parametric HF-adj														
van der Waerden	5.53	5.20	4.91	4.99	4.72	4.97	4.94	4.20	4.22	4.20	4.21	4.12	4.06	3.97
KWF	5.85	5.42	5.40	5.64	4.97	5.46	5.28	3.91	4.59	5.08	5.19	5.25	5.41	5.25
Puri & Sen INT	4.86	4.99	4.94	5.01	4.76	4.69	4.77	3.93	4.00	4.08	4.09	3.95	4.08	3.90
Puri & Sen	5.03	5.29	5.40	5.45	5.44	5.45	5.59	4.46	4.78	4.99	5.15	5.30	5.34	5.77
INT	6.17	5.76	5.26	5.20	4.92	4.84	4.85	4.97	4.58	4.42	4.50	4.09	4.14	3.92
ART INT	6.55	5.88	5.28	5.31	4.80	4.84	4.72	4.89	4.59	4.46	4.46	4.20	4.03	3.90
Koch	5.85	5.42	5.40	5.64	4.97	5.46	5.28	3.91	4.59	5.08	5.19	5.25	5.41	5.25
ATS	9.59	8.35	7.01	6.32	5.84	5.82	5.70	15.84	12.04	8.92	7.88	6.36	5.80	5.60
large design (4*6)														
parametric	6.00	6.01	6.22	6.06	6.05	6.27	6.27	4.75	5.50	6.08	5.73	5.43	5.36	5.28
parametric HF-adj														
van der Waerden	4.26	4.61	5.14	5.14	4.99	4.95	5.02	3.48	4.20	4.71	4.71	4.49	4.51	4.00
KWF	4.50	4.84	5.44	5.69	5.19	5.47	5.65	3.63	4.34	4.84	5.04	5.41	5.53	5.01
Puri & Sen INT	3.81	4.38	4.96	5.00	4.62	4.78	4.92	3.40	4.01	4.45	4.31	4.24	4.25	3.97
Puri & Sen	4.25	4.66	5.34	5.70	5.26	5.11	5.42	3.81	4.41	4.86	4.81	5.15	5.16	4.67
INT	5.17	5.11	5.29	5.21	4.76	4.90	4.95	4.67	4.86	4.88	4.61	4.41	4.35	4.10
ART INT	5.10	5.15	5.41	5.28	4.70	4.96	4.80	4.48	4.80	4.92	4.64	4.34	4.45	4.18
Koch	4.50	4.84	5.44	5.69	5.19	5.47	5.65	3.63	4.34	4.84	5.04	5.41	5.53	5.01
ATS	7.37	6.82	6.54	6.33	5.59	5.31	5.35	9.58	8.22	7.00	6.19	6.16	5.90	5.65



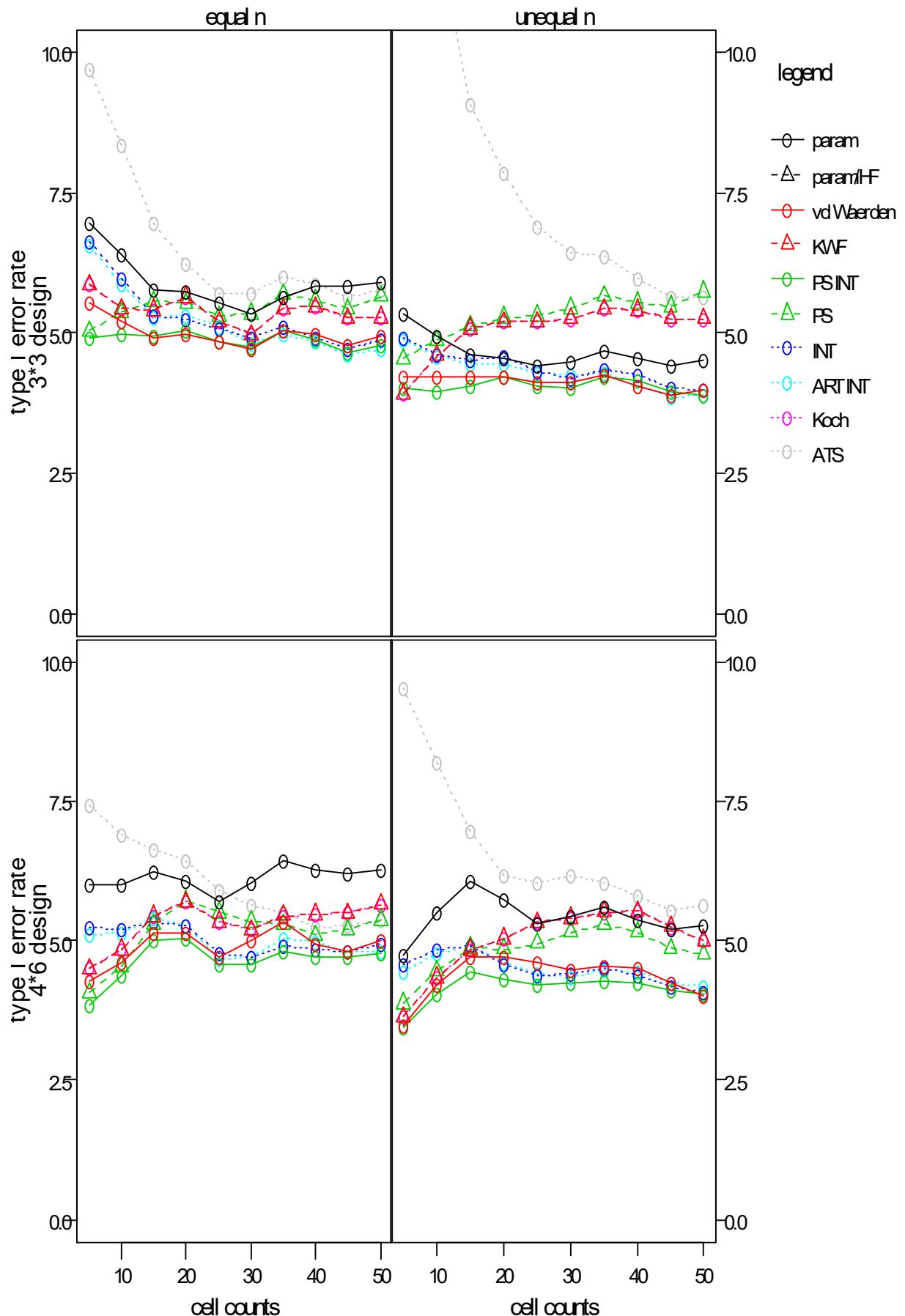
1. 3. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.06	4.80	4.62	5.64	5.28	4.92	5.02	4.71	4.61	4.64	5.53	4.84	4.97
parametric HF-adj														
van der Waerden	4.18	4.40	4.51	4.49	5.34	5.04	4.86	3.97	4.19	4.49	4.54	5.54	4.94	5.10
KWF	4.47	4.45	4.40	4.51	5.31	4.97	4.78	3.63	4.03	4.46	4.59	5.49	4.96	5.05
Puri & Sen INT	3.78	4.16	4.56	4.72	5.65	5.21	4.77	4.02	4.01	4.29	4.53	5.34	5.11	5.00
Puri & Sen	4.28	4.56	4.86	5.21	6.45	6.12	6.10	4.20	4.46	4.89	5.26	6.53	6.29	6.55
INT	5.48	5.33	5.10	5.04	5.83	5.36	4.87	5.09	4.81	4.79	4.84	5.70	5.35	5.06
ART INT	5.95	5.75	5.48	5.28	6.26	5.66	5.46	5.68	5.50	5.34	5.21	6.09	5.73	5.60
Koch	4.47	4.45	4.40	4.51	5.31	4.97	4.78	3.63	4.03	4.46	4.59	5.49	4.96	5.05
ATS	8.01	7.03	6.26	6.22	7.16	6.51	6.47	15.23	11.55	8.50	7.49	7.33	6.68	6.41
large design (4*6)														
parametric	4.61	4.96	5.20	5.06	5.09	5.12	4.80	4.45	4.62	4.79	5.11	5.04	5.22	4.73
parametric HF-adj														
van der Waerden	3.44	4.22	4.89	4.85	4.67	4.93	4.67	3.11	3.85	4.44	4.84	4.84	5.07	4.45
KWF	3.78	4.38	4.71	4.72	4.59	4.91	4.70	2.84	3.61	4.32	4.93	4.97	4.81	4.53
Puri & Sen INT	3.40	3.98	4.61	4.83	4.71	5.20	4.87	3.26	3.90	4.38	4.84	4.79	4.96	4.60
Puri & Sen	3.49	4.16	4.65	4.84	4.94	5.56	5.22	3.11	3.93	4.53	5.00	5.24	5.32	5.18
INT	4.78	5.01	5.12	5.08	4.91	5.30	5.05	4.41	4.61	4.81	5.28	5.10	5.00	4.77
ART INT	5.33	5.70	5.99	5.89	5.69	5.96	5.63	5.24	5.45	5.41	5.74	5.91	5.79	5.27
Koch	3.78	4.38	4.71	4.72	4.59	4.91	4.70	2.84	3.61	4.32	4.93	4.97	4.81	4.53
ATS	7.23	6.89	6.22	5.88	5.70	6.06	5.53	12.92	10.00	7.53	7.24	6.59	6.12	5.38



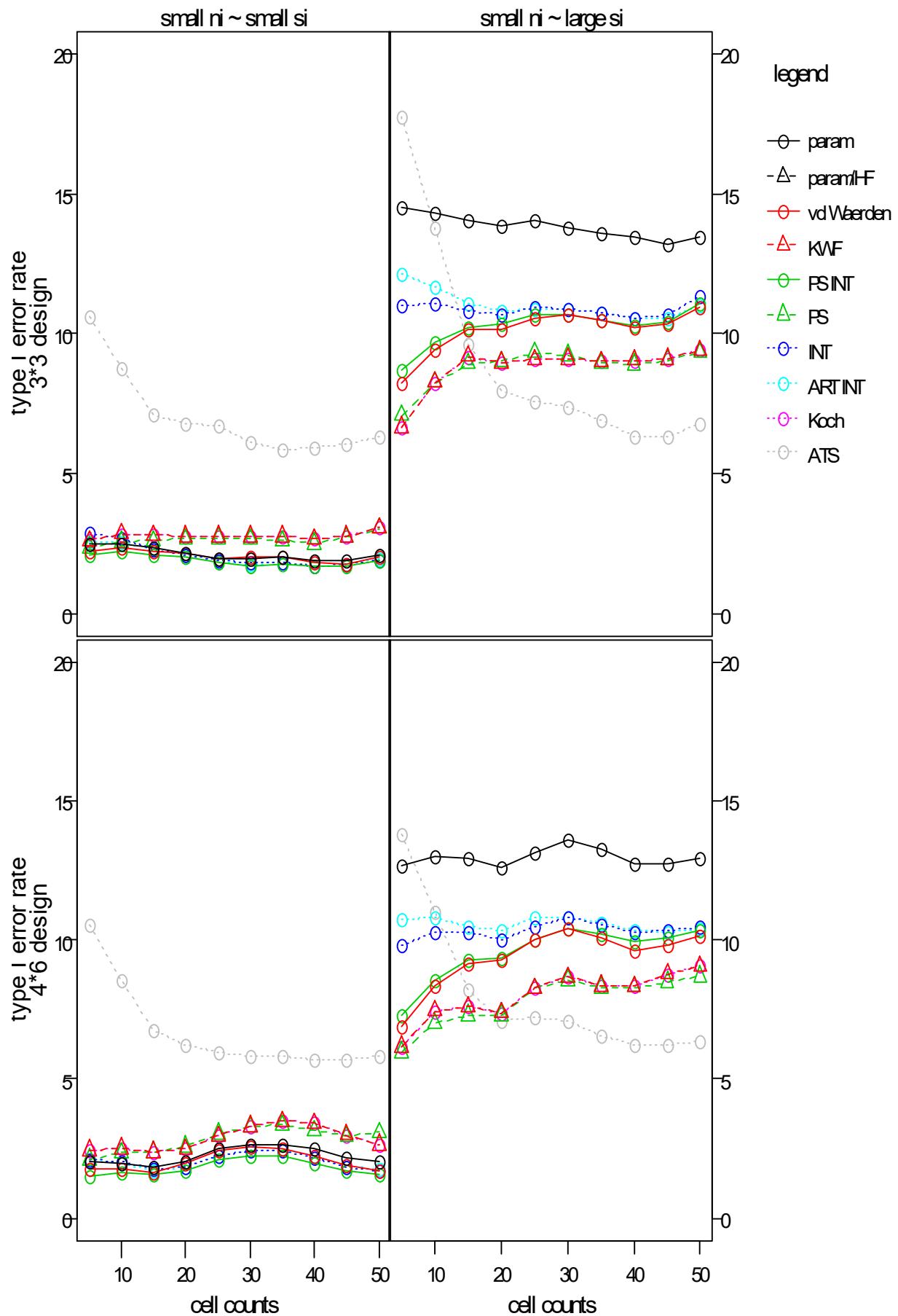
1. 3. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.95	6.38	5.75	5.72	5.34	5.84	5.90	5.34	4.94	4.61	4.54	4.49	4.53	4.50
parametric HF-adj														
van der Waerden	5.53	5.20	4.91	4.99	4.72	4.97	4.94	4.20	4.22	4.20	4.21	4.12	4.06	3.97
KWF	5.85	5.42	5.40	5.64	4.97	5.46	5.28	3.91	4.59	5.08	5.19	5.25	5.41	5.25
Puri & Sen INT	4.90	4.96	4.95	5.04	4.75	4.86	4.79	4.03	3.94	4.04	4.20	4.01	4.15	3.90
Puri & Sen	5.03	5.36	5.56	5.53	5.34	5.57	5.65	4.53	4.86	5.12	5.28	5.44	5.54	5.74
INT	6.64	5.96	5.29	5.24	4.92	4.92	4.87	4.90	4.60	4.50	4.58	4.18	4.24	3.98
ART INT	6.55	5.88	5.28	5.31	4.80	4.84	4.72	4.87	4.59	4.45	4.46	4.24	4.05	3.90
Koch	5.85	5.42	5.40	5.64	4.97	5.46	5.28	3.91	4.59	5.08	5.19	5.25	5.41	5.25
ATS	9.69	8.33	6.95	6.24	5.69	5.86	5.75	15.72	12.14	9.08	7.86	6.44	5.98	5.65
large design (4*6)														
parametric	6.00	6.01	6.22	6.06	6.05	6.27	6.27	4.75	5.50	6.08	5.73	5.43	5.36	5.28
parametric HF-adj														
van der Waerden	4.26	4.61	5.14	5.14	4.99	4.95	5.02	3.48	4.20	4.71	4.71	4.49	4.51	4.00
KWF	4.50	4.84	5.44	5.69	5.19	5.47	5.65	3.63	4.34	4.84	5.04	5.41	5.53	5.01
Puri & Sen INT	3.83	4.39	5.01	5.03	4.59	4.71	4.78	3.43	4.04	4.44	4.31	4.25	4.24	4.03
Puri & Sen	4.06	4.55	5.29	5.70	5.34	5.10	5.37	3.88	4.47	4.88	4.85	5.15	5.15	4.75
INT	5.25	5.19	5.34	5.26	4.72	4.83	4.95	4.58	4.84	4.90	4.59	4.40	4.39	4.07
ART INT	5.10	5.15	5.41	5.28	4.70	4.96	4.80	4.45	4.78	4.90	4.62	4.34	4.45	4.18
Koch	4.50	4.84	5.44	5.69	5.19	5.47	5.65	3.63	4.34	4.84	5.04	5.41	5.53	5.01
ATS	7.44	6.91	6.64	6.43	5.62	5.25	5.38	9.53	8.18	6.96	6.16	6.17	5.79	5.64



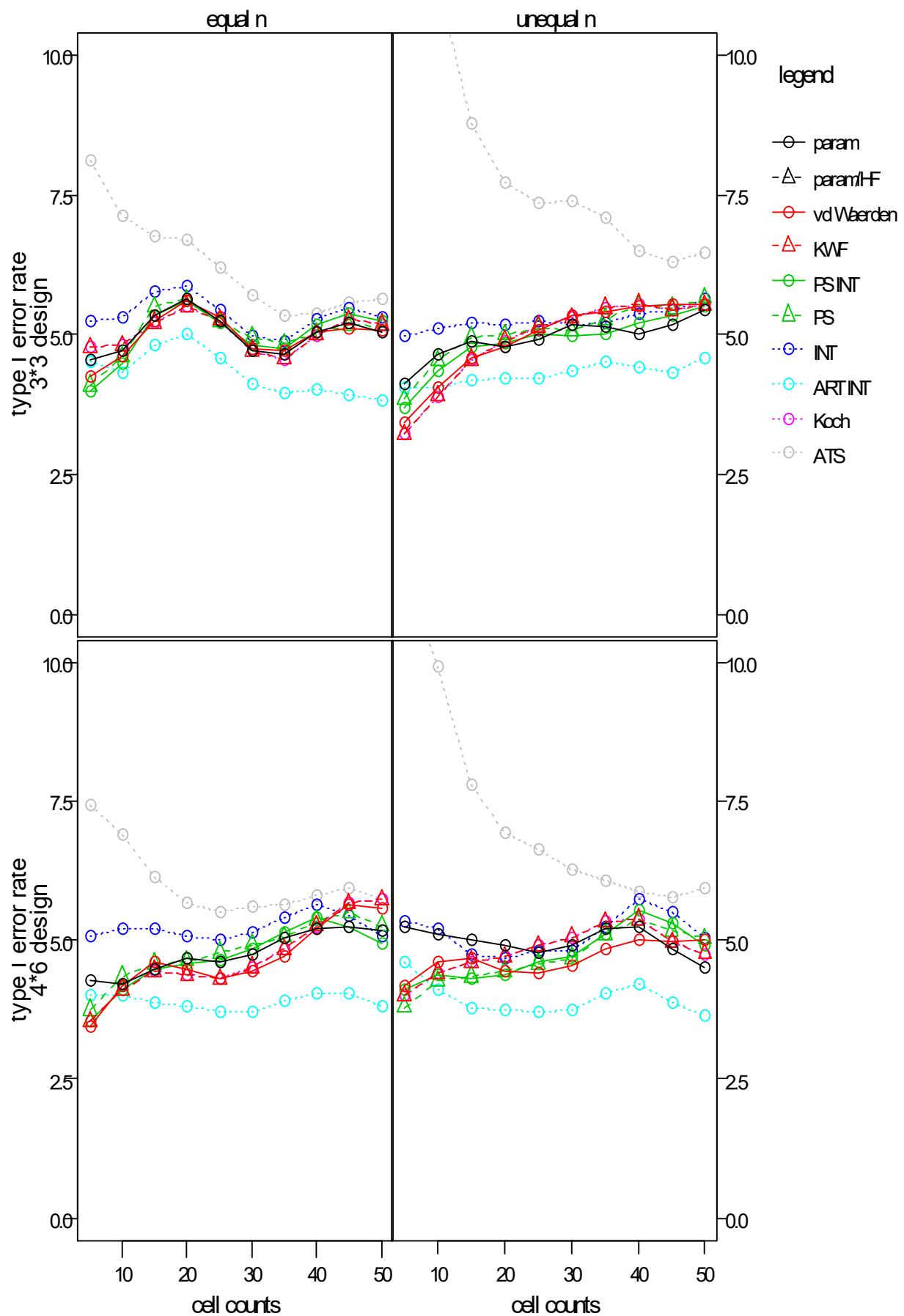
1. 3. 1. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.45	2.49	2.35	2.16	1.96	1.88	2.08	14.49	14.31	14.01	13.86	13.81	13.43	13.47
parametric HF-adj														
van der Waerden	2.21	2.34	2.25	2.14	1.99	1.80	2.04	8.21	9.44	10.14	10.16	10.69	10.18	10.92
KWF	2.60	2.84	2.80	2.75	2.75	2.65	3.07	6.66	8.25	9.18	8.97	9.10	9.05	9.39
Puri & Sen INT	2.06	2.20	2.11	1.99	1.72	1.66	1.87	8.68	9.68	10.24	10.36	10.66	10.29	11.07
Puri & Sen	2.36	2.55	2.60	2.67	2.65	2.50	3.04	7.07	8.25	8.92	9.01	9.22	8.91	9.34
INT	2.87	2.68	2.30	2.10	1.79	1.69	1.90	11.03	11.05	10.80	10.66	10.90	10.54	11.34
ART INT	2.53	2.54	2.31	2.10	1.77	1.71	1.95	12.14	11.65	11.06	10.80	10.88	10.55	10.99
Koch	2.60	2.84	2.80	2.75	2.75	2.65	3.07	6.66	8.25	9.18	8.97	9.10	9.05	9.39
ATS	10.64	8.79	7.09	6.78	6.10	5.95	6.32	17.77	13.75	9.64	7.94	7.36	6.34	6.77
large design (4*6)														
parametric	2.03	1.96	1.81	2.04	2.64	2.47	2.02	12.65	13.02	12.93	12.61	13.60	12.72	12.93
parametric HF-adj														
van der Waerden	1.80	1.75	1.66	1.98	2.59	2.26	1.68	6.86	8.38	9.15	9.28	10.40	9.64	10.17
KWF	2.43	2.50	2.38	2.49	3.31	3.40	2.65	6.17	7.45	7.60	7.38	8.65	8.34	9.07
Puri & Sen INT	1.51	1.65	1.57	1.70	2.26	2.00	1.58	7.28	8.54	9.26	9.34	10.39	9.94	10.33
Puri & Sen	2.10	2.36	2.38	2.58	3.29	3.15	3.09	5.96	7.00	7.29	7.30	8.55	8.31	8.70
INT	2.12	2.02	1.79	1.85	2.46	2.17	1.72	9.81	10.30	10.30	10.02	10.80	10.26	10.47
ART INT	2.10	1.96	1.70	1.81	2.42	2.22	1.77	10.75	10.80	10.48	10.36	10.82	10.36	10.43
Koch	2.43	2.50	2.38	2.49	3.31	3.40	2.65	6.17	7.45	7.60	7.38	8.65	8.34	9.07
ATS	10.53	8.54	6.78	6.22	5.80	5.72	5.82	13.80	11.04	8.21	7.11	7.12	6.23	6.37



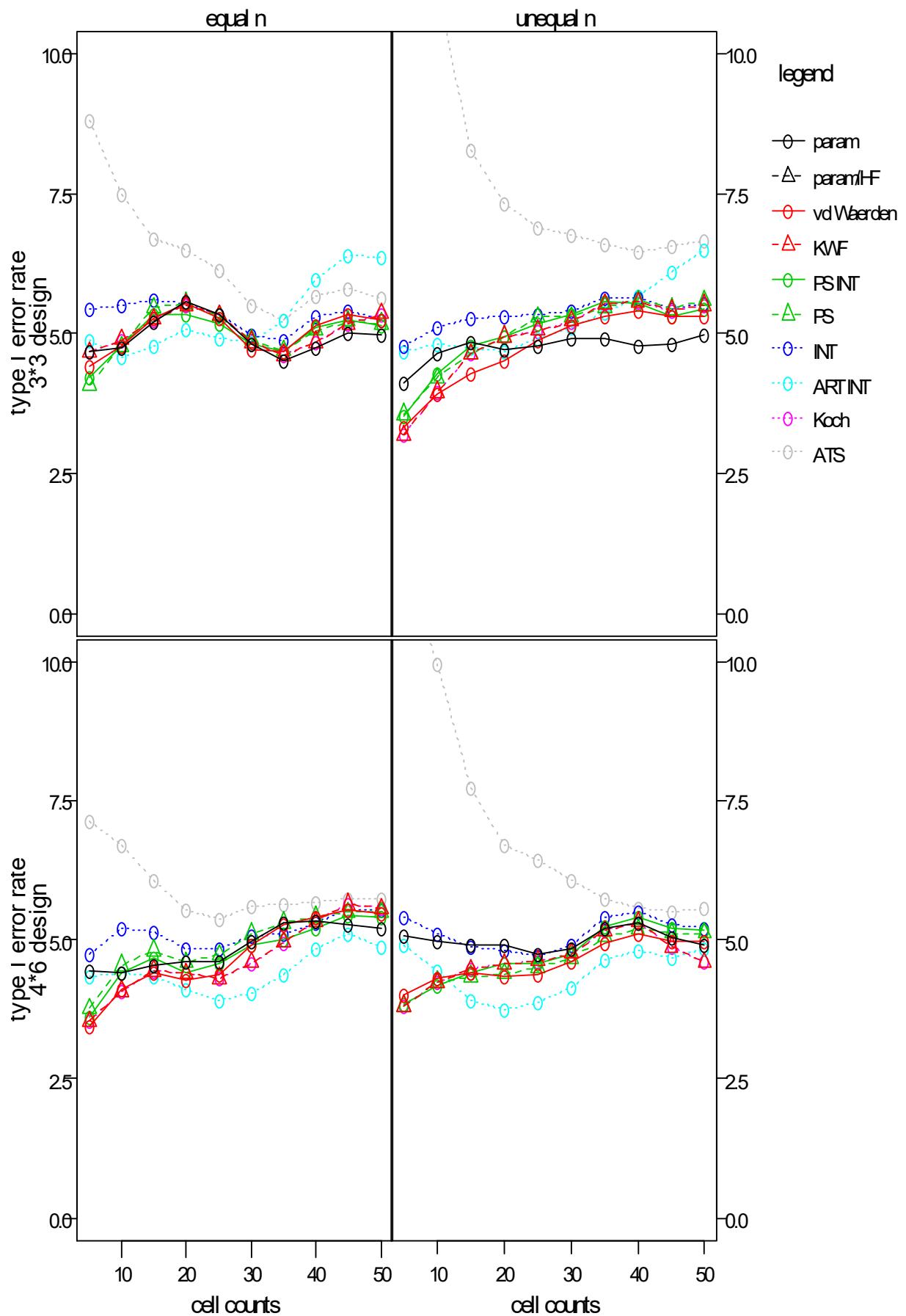
1. 3. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.53	4.70	5.33	5.65	4.71	5.05	5.05	4.13	4.64	4.89	4.79	5.16	5.01	5.42
parametric HF-adj														
van der Waerden	4.25	4.61	5.25	5.60	4.75	5.05	5.07	3.43	4.05	4.58	4.78	5.34	5.51	5.53
KWF	4.77	4.80	5.21	5.50	4.71	4.99	5.18	3.21	3.90	4.55	4.89	5.30	5.54	5.52
Puri & Sen INT	3.98	4.49	5.35	5.60	4.80	5.16	5.23	3.68	4.34	4.76	4.84	4.96	5.22	5.50
Puri & Sen	4.08	4.60	5.49	5.62	4.94	5.01	5.15	3.84	4.54	4.94	5.00	5.06	5.52	5.65
INT	5.25	5.31	5.75	5.85	4.97	5.26	5.32	4.97	5.11	5.19	5.17	5.16	5.38	5.64
ART INT	4.50	4.31	4.80	5.01	4.12	4.01	3.82	4.05	4.06	4.19	4.22	4.34	4.41	4.57
Koch	4.77	4.80	5.21	5.50	4.71	4.99	5.18	3.21	3.90	4.55	4.89	5.30	5.54	5.52
ATS	8.11	7.13	6.76	6.68	5.71	5.38	5.63	14.59	11.38	8.76	7.70	7.39	6.50	6.45
large design (4*6)														
parametric	4.27	4.22	4.46	4.67	4.74	5.21	5.18	5.25	5.11	5.01	4.91	4.89	5.25	4.52
parametric HF-adj														
van der Waerden	3.43	4.16	4.61	4.47	4.44	5.19	5.56	4.16	4.61	4.67	4.43	4.55	5.02	5.00
KWF	3.54	4.11	4.44	4.36	4.51	5.25	5.73	4.00	4.41	4.61	4.70	5.05	5.38	4.75
Puri & Sen INT	3.53	4.10	4.47	4.59	4.83	5.39	4.93	4.10	4.39	4.31	4.36	4.69	5.55	4.90
Puri & Sen	3.74	4.34	4.58	4.62	4.92	5.35	5.25	3.79	4.26	4.35	4.45	4.68	5.36	5.03
INT	5.06	5.22	5.21	5.08	5.14	5.62	5.06	5.33	5.21	4.74	4.66	4.82	5.74	5.05
ART INT	4.00	4.00	3.87	3.81	3.71	4.05	3.81	4.60	4.10	3.76	3.74	3.74	4.21	3.63
Koch	3.54	4.11	4.44	4.36	4.51	5.25	5.73	4.00	4.41	4.61	4.70	5.05	5.38	4.75
ATS	7.42	6.89	6.14	5.67	5.60	5.80	5.73	11.66	9.91	7.81	6.93	6.28	5.88	5.95



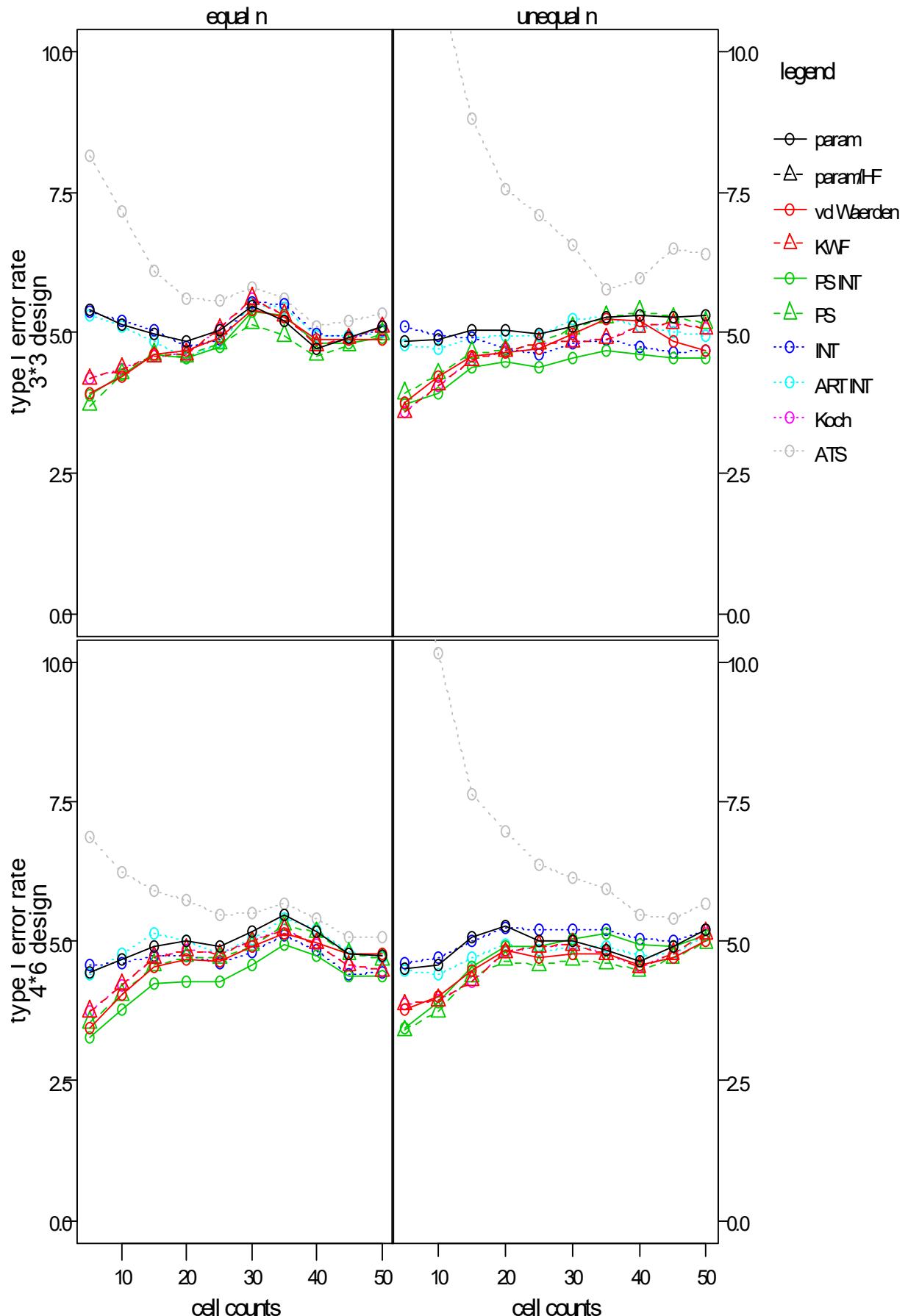
1. 3. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.67	4.75	5.21	5.57	4.81	4.75	4.98	4.10	4.64	4.85	4.72	4.92	4.79	4.98
parametric HF-adj														
van der Waerden	4.41	4.79	5.28	5.53	4.72	5.15	5.25	3.33	3.91	4.28	4.51	5.14	5.41	5.30
KWF	4.67	4.89	5.25	5.50	4.84	4.85	5.35	3.18	3.95	4.64	4.94	5.22	5.56	5.50
Puri & Sen INT	4.21	4.79	5.34	5.34	4.80	5.11	5.13	3.51	4.29	4.79	4.93	5.35	5.54	5.45
Puri & Sen	4.08	4.76	5.46	5.54	4.89	5.05	5.17	3.56	4.20	4.64	4.95	5.30	5.59	5.59
INT	5.42	5.49	5.61	5.55	4.97	5.29	5.25	4.78	5.10	5.28	5.29	5.40	5.65	5.54
ART INT	4.89	4.59	4.78	5.08	4.85	5.97	6.37	4.66	4.81	4.74	4.69	5.12	5.66	6.49
Koch	4.67	4.89	5.25	5.50	4.84	4.85	5.35	3.18	3.95	4.64	4.94	5.22	5.56	5.50
ATS	8.81	7.49	6.69	6.50	5.51	5.66	5.65	14.49	11.13	8.29	7.31	6.75	6.47	6.65
large design (4*6)														
parametric	4.45	4.42	4.55	4.61	4.97	5.35	5.22	5.07	4.96	4.92	4.89	4.85	5.30	4.90
parametric HF-adj														
van der Waerden	3.44	4.11	4.41	4.26	4.92	5.41	5.46	4.00	4.32	4.42	4.33	4.60	5.12	4.97
KWF	3.53	4.08	4.44	4.40	4.59	5.33	5.56	3.81	4.23	4.47	4.57	4.75	5.32	4.60
Puri & Sen INT	3.61	4.40	4.67	4.41	4.91	5.20	5.42	3.83	4.16	4.40	4.58	4.74	5.39	5.17
Puri & Sen	3.76	4.54	4.81	4.60	5.11	5.41	5.50	3.81	4.25	4.34	4.39	4.67	5.20	5.12
INT	4.73	5.19	5.15	4.83	5.06	5.29	5.55	5.40	5.12	4.86	4.82	4.89	5.49	5.22
ART INT	4.35	4.40	4.33	4.10	4.03	4.85	4.88	4.90	4.44	3.90	3.75	4.14	4.79	4.84
Koch	3.53	4.08	4.44	4.40	4.59	5.33	5.56	3.81	4.23	4.47	4.57	4.75	5.32	4.60
ATS	7.13	6.70	6.06	5.53	5.59	5.67	5.72	11.79	9.96	7.72	6.70	6.06	5.58	5.57



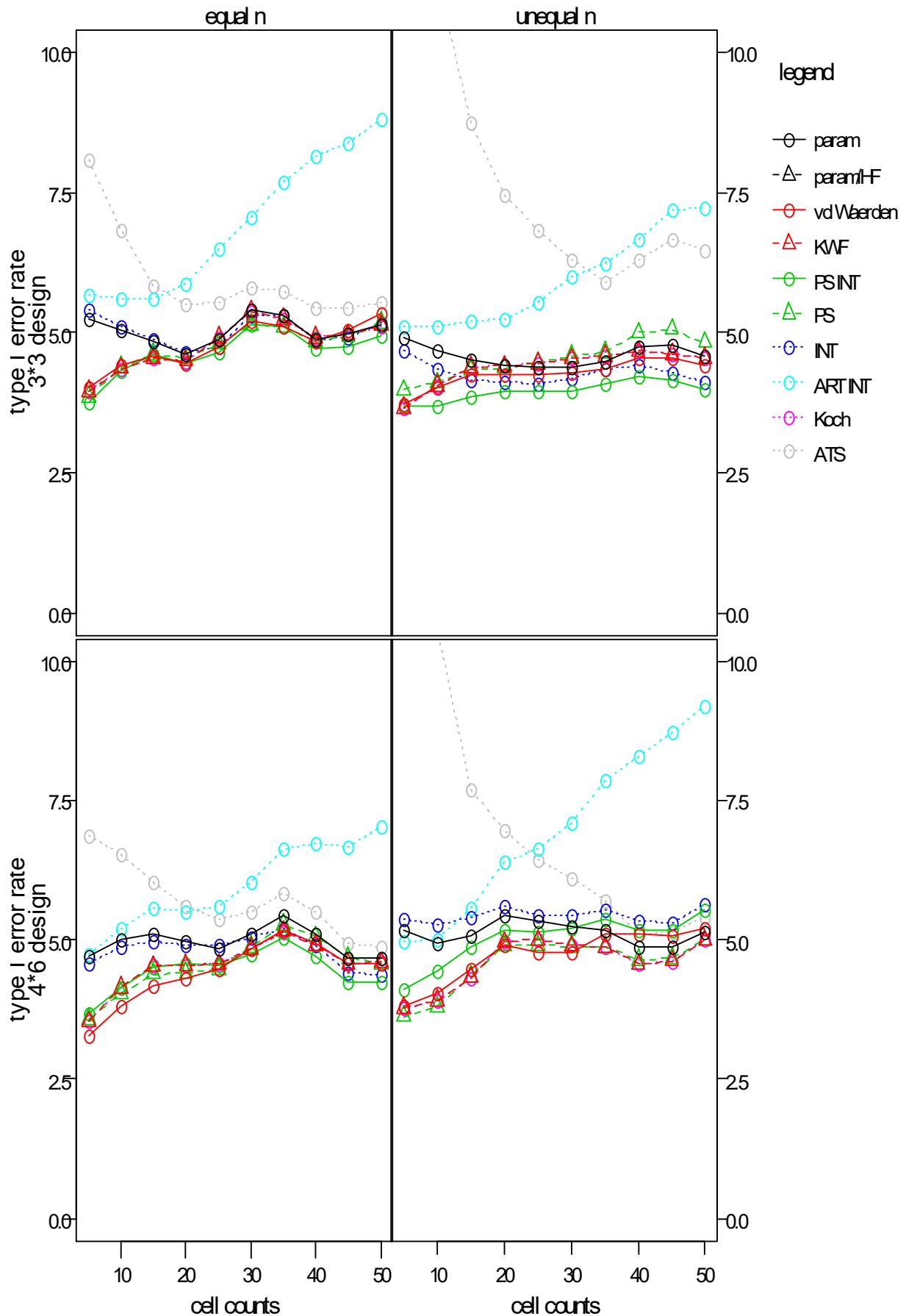
1. 3. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.39	5.14	4.97	4.84	5.47	4.71	5.10	4.85	4.86	5.05	5.03	5.12	5.29	5.30
parametric HF-adj														
van der Waerden	3.92	4.21	4.61	4.69	5.40	4.89	4.87	3.76	4.20	4.57	4.65	4.96	5.19	4.67
KWF	4.17	4.36	4.57	4.61	5.60	4.77	5.10	3.58	4.06	4.50	4.66	4.85	5.10	5.07
Puri & Sen INT	3.87	4.24	4.61	4.56	5.38	4.81	4.92	3.73	3.92	4.39	4.49	4.54	4.62	4.53
Puri & Sen	3.70	4.26	4.62	4.58	5.15	4.59	4.98	3.92	4.26	4.65	4.69	5.07	5.38	5.17
INT	5.37	5.22	5.04	4.74	5.54	4.97	5.03	5.10	4.95	4.90	4.72	4.81	4.74	4.67
ART INT	5.30	5.11	4.85	4.55	5.50	4.95	5.00	4.79	4.70	4.92	4.95	5.25	5.10	4.93
Koch	4.17	4.36	4.57	4.61	5.60	4.77	5.10	3.58	4.06	4.50	4.66	4.85	5.10	5.07
ATS	8.16	7.15	6.11	5.60	5.81	5.12	5.35	13.72	11.29	8.82	7.54	6.57	5.97	6.41
large design (4*6)														
parametric	4.43	4.67	4.92	4.99	5.16	5.17	4.75	4.50	4.59	5.06	5.26	4.99	4.65	5.20
parametric HF-adj														
van der Waerden	3.45	4.03	4.55	4.67	4.90	4.96	4.78	3.78	4.00	4.49	4.83	4.76	4.57	5.00
KWF	3.75	4.22	4.71	4.84	4.99	4.95	4.47	3.87	3.95	4.29	4.79	4.94	4.55	5.14
Puri & Sen INT	3.28	3.77	4.24	4.29	4.56	4.74	4.38	3.45	3.91	4.55	4.90	5.04	4.95	5.12
Puri & Sen	3.55	4.05	4.58	4.72	4.92	5.15	4.68	3.40	3.75	4.38	4.65	4.66	4.47	4.97
INT	4.57	4.60	4.74	4.74	4.80	4.84	4.43	4.60	4.71	5.00	5.25	5.19	5.05	5.20
ART INT	4.40	4.76	5.14	5.00	5.05	5.19	4.72	4.47	4.42	4.70	4.95	4.88	4.75	5.12
Koch	3.75	4.22	4.71	4.84	4.99	4.95	4.47	3.87	3.95	4.29	4.79	4.94	4.55	5.14
ATS	6.85	6.25	5.90	5.75	5.49	5.41	5.08	13.32	10.14	7.62	6.97	6.12	5.47	5.67



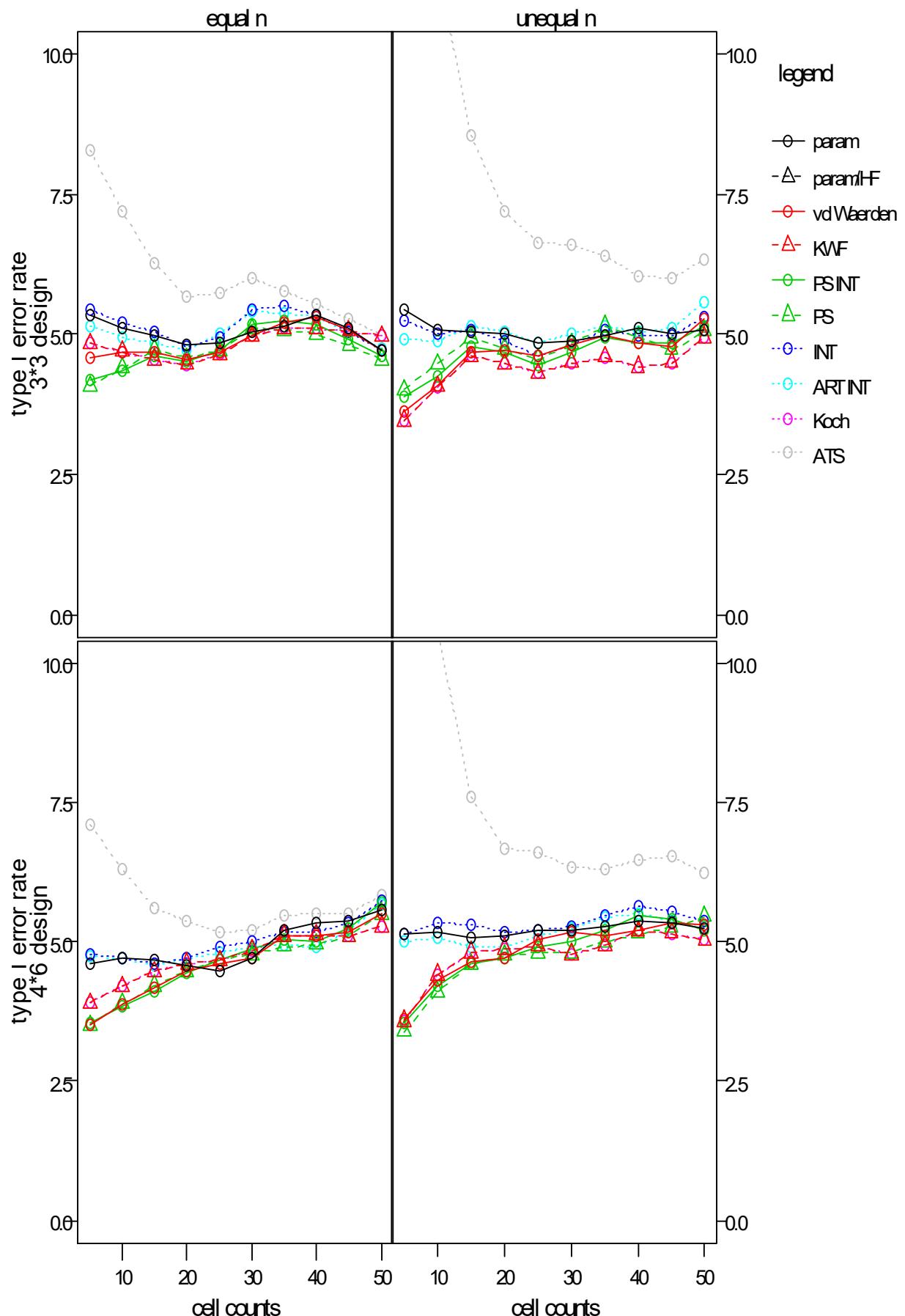
1. 3. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.24	5.05	4.85	4.62	5.40	4.89	5.13	4.90	4.66	4.50	4.41	4.38	4.75	4.57
parametric HF-adj														
van der Waerden	4.03	4.41	4.59	4.46	5.20	4.85	5.33	3.71	4.00	4.26	4.26	4.28	4.54	4.42
KWF	3.95	4.36	4.54	4.49	5.38	4.91	5.12	3.65	4.05	4.38	4.40	4.53	4.66	4.55
Puri & Sen INT	3.75	4.30	4.60	4.46	5.14	4.71	4.93	3.68	3.70	3.84	3.95	3.96	4.20	3.98
Puri & Sen	3.86	4.38	4.62	4.54	5.14	4.83	5.18	3.97	4.11	4.33	4.36	4.58	5.00	4.82
INT	5.39	5.10	4.88	4.65	5.29	4.88	5.17	4.67	4.34	4.16	4.11	4.19	4.40	4.10
ART INT	5.67	5.60	5.59	5.85	7.06	8.14	8.82	5.10	5.11	5.19	5.23	6.01	6.67	7.21
Koch	3.95	4.36	4.54	4.49	5.38	4.91	5.12	3.65	4.05	4.38	4.40	4.53	4.66	4.55
ATS	8.09	6.81	5.83	5.51	5.79	5.45	5.53	13.88	11.32	8.74	7.44	6.29	6.31	6.46
large design (4*6)														
parametric	4.71	5.01	5.11	4.96	5.11	5.09	4.68	5.18	4.94	5.08	5.44	5.25	4.88	5.15
parametric HF-adj														
van der Waerden	3.28	3.81	4.17	4.31	4.85	4.93	4.58	3.81	4.04	4.46	4.89	4.76	5.10	5.22
KWF	3.53	4.15	4.53	4.55	4.84	4.91	4.60	3.78	3.91	4.32	4.96	4.90	4.57	4.99
Puri & Sen INT	3.66	4.14	4.51	4.57	4.74	4.71	4.25	4.10	4.44	4.86	5.16	5.22	5.17	5.54
Puri & Sen	3.58	4.05	4.39	4.41	4.88	5.06	4.58	3.62	3.80	4.34	4.89	4.86	4.64	4.99
INT	4.58	4.86	4.97	4.91	5.05	4.89	4.37	5.38	5.28	5.41	5.61	5.44	5.33	5.65
ART INT	4.73	5.22	5.58	5.51	6.02	6.74	7.02	4.97	4.99	5.58	6.39	7.09	8.28	9.19
Koch	3.53	4.15	4.53	4.55	4.84	4.91	4.60	3.78	3.91	4.32	4.96	4.90	4.57	4.99
ATS	6.85	6.53	6.03	5.61	5.51	5.50	4.87	14.05	10.60	7.71	6.97	6.11	5.12	5.40



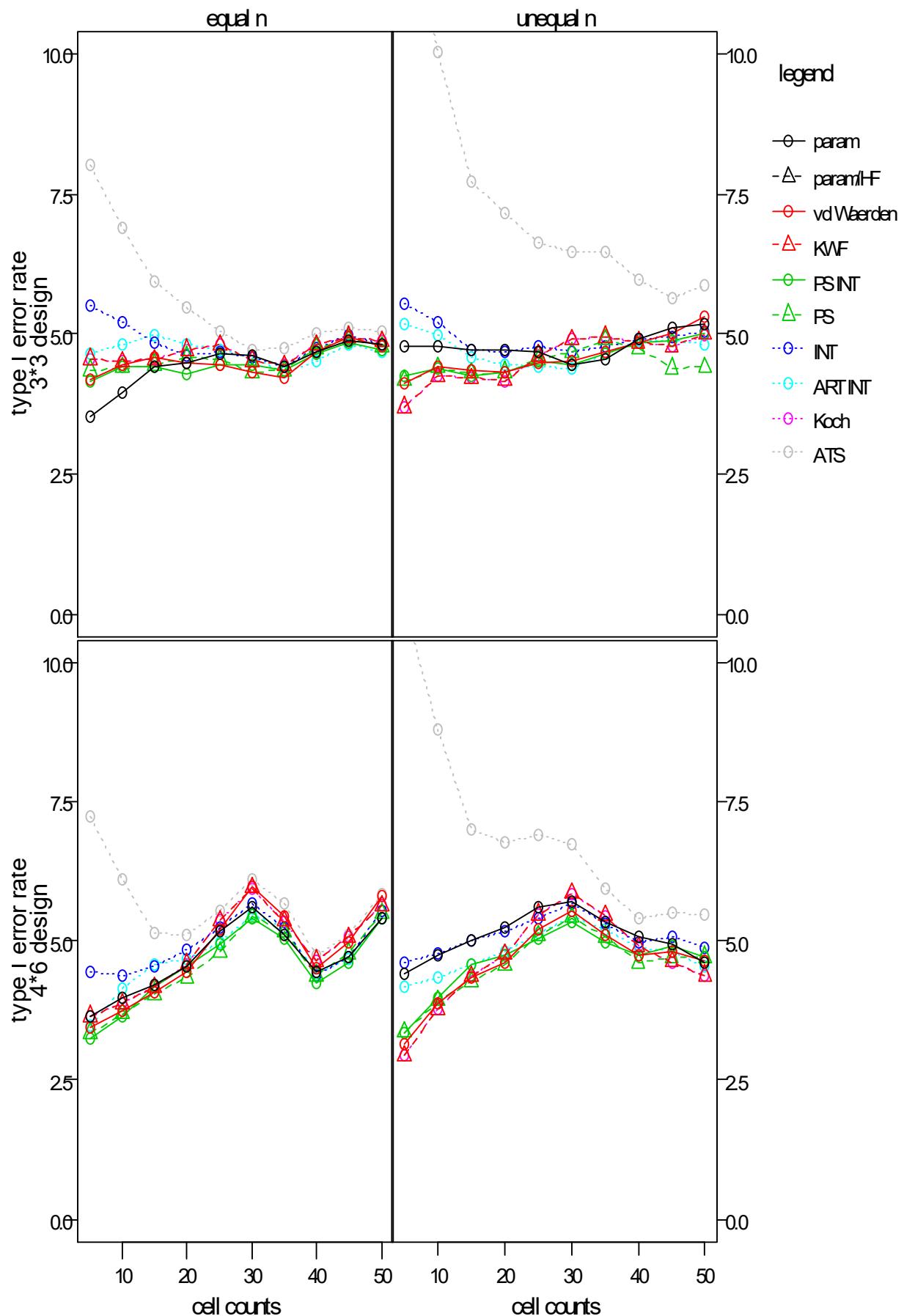
1. 3. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.09	4.96	4.80	5.03	5.34	4.70	5.42	5.06	5.05	5.00	4.86	5.09	5.07
parametric HF-adj														
van der Waerden	4.58	4.69	4.69	4.55	4.97	5.30	4.71	3.62	4.09	4.66	4.70	4.81	4.83	5.26
KWF	4.83	4.69	4.55	4.46	4.97	5.11	4.97	3.46	4.06	4.60	4.47	4.49	4.41	4.94
Puri & Sen INT	4.18	4.36	4.60	4.52	5.17	5.18	4.62	3.88	4.25	4.78	4.69	4.69	4.85	5.15
Puri & Sen	4.07	4.39	4.72	4.57	5.09	5.00	4.55	4.00	4.47	4.94	4.75	4.83	4.95	5.05
INT	5.45	5.19	5.04	4.78	5.44	5.35	4.70	5.25	5.01	5.07	4.88	4.81	4.97	5.32
ART INT	5.15	4.95	4.84	4.72	5.39	5.30	4.75	4.92	4.88	5.14	5.04	5.01	5.03	5.57
Koch	4.83	4.69	4.55	4.46	4.97	5.11	4.97	3.46	4.06	4.60	4.47	4.49	4.41	4.94
ATS	8.26	7.20	6.26	5.66	6.00	5.53	4.96	15.11	11.60	8.54	7.18	6.60	6.03	6.32
large design (4*6)														
parametric	4.60	4.72	4.67	4.59	4.70	5.33	5.57	5.13	5.16	5.06	5.09	5.20	5.38	5.23
parametric HF-adj														
van der Waerden	3.51	3.86	4.16	4.49	4.72	5.12	5.52	3.61	4.32	4.64	4.70	5.17	5.20	5.30
KWF	3.90	4.20	4.47	4.61	4.85	5.12	5.27	3.58	4.41	4.81	4.88	4.78	5.20	5.03
Puri & Sen INT	3.56	3.85	4.11	4.45	4.86	5.01	5.69	3.53	4.21	4.60	4.72	5.00	5.46	5.22
Puri & Sen	3.50	3.89	4.21	4.46	4.76	4.95	5.49	3.39	4.10	4.60	4.75	4.80	5.15	5.45
INT	4.77	4.72	4.60	4.72	5.01	5.16	5.75	5.15	5.35	5.29	5.16	5.26	5.64	5.38
ART INT	4.73	4.69	4.56	4.70	4.89	4.90	5.67	5.01	5.07	4.91	4.92	5.24	5.49	5.27
Koch	3.90	4.20	4.47	4.61	4.85	5.12	5.27	3.58	4.41	4.81	4.88	4.78	5.20	5.03
ATS	7.09	6.30	5.61	5.36	5.19	5.51	5.85	13.41	10.60	7.59	6.68	6.35	6.46	6.25



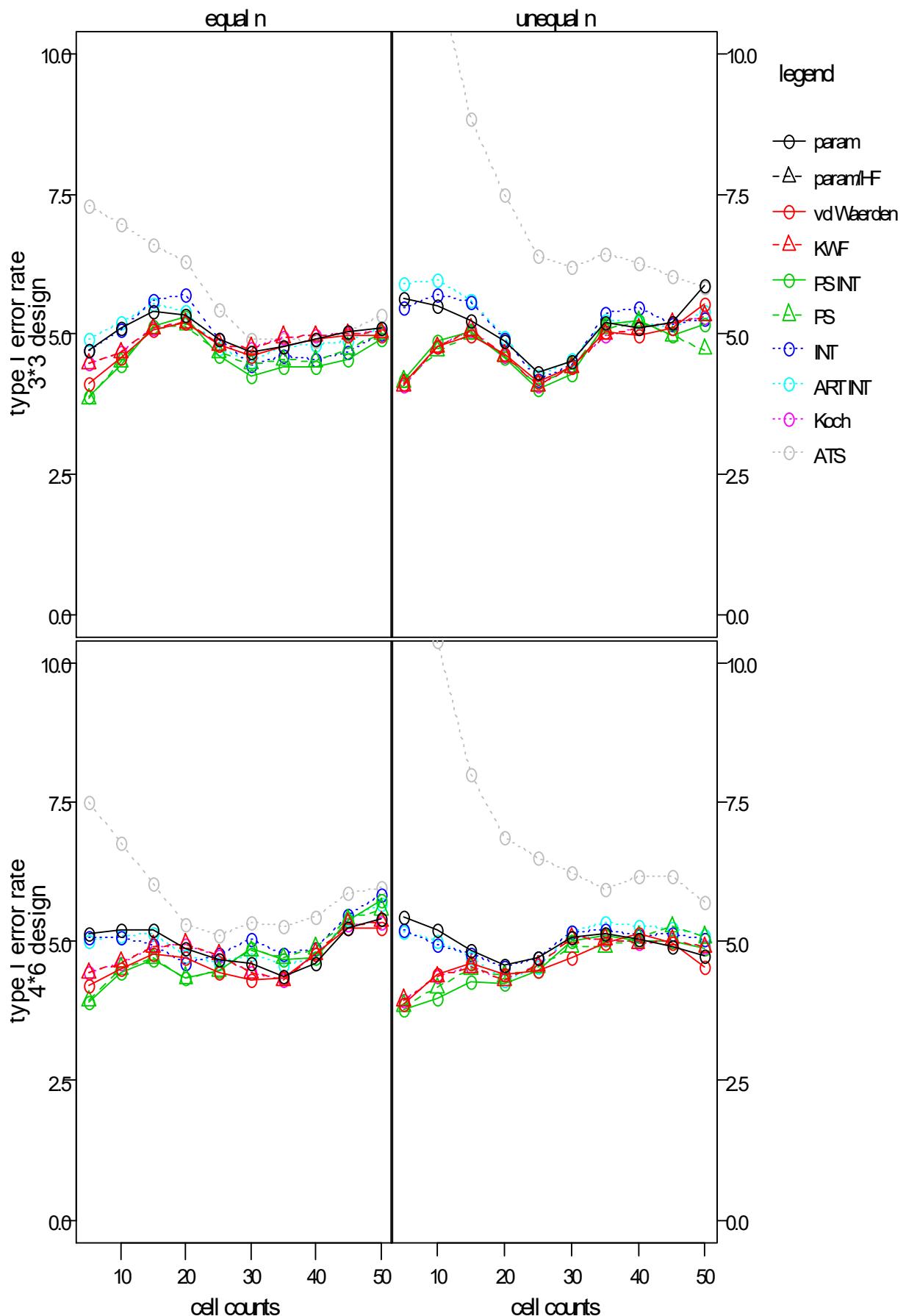
1. 3. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.53	3.96	4.41	4.47	4.61	4.67	4.80	4.77	4.79	4.71	4.70	4.45	4.90	5.18
parametric HF-adj														
van der Waerden	4.18	4.44	4.58	4.47	4.31	4.66	4.76	4.13	4.41	4.35	4.31	4.51	4.85	5.30
KWF	4.55	4.50	4.53	4.71	4.51	4.80	4.87	3.69	4.24	4.20	4.16	4.90	4.85	4.99
Puri & Sen INT	4.16	4.41	4.40	4.28	4.46	4.64	4.70	4.25	4.39	4.26	4.32	4.45	4.84	5.00
Puri & Sen	4.35	4.39	4.45	4.58	4.30	4.74	4.77	4.16	4.39	4.29	4.32	4.66	4.75	4.40
INT	5.50	5.22	4.85	4.60	4.59	4.74	4.80	5.55	5.20	4.71	4.67	4.68	4.92	5.05
ART INT	4.63	4.80	4.97	4.82	4.59	4.51	4.68	5.18	4.96	4.59	4.45	4.39	4.89	4.80
Koch	4.55	4.50	4.53	4.71	4.51	4.80	4.87	3.69	4.24	4.20	4.16	4.90	4.85	4.99
ATS	8.01	6.89	5.93	5.46	4.72	5.00	5.03	13.16	10.04	7.70	7.15	6.46	5.95	5.87
large design (4*6)														
parametric	3.63	3.97	4.22	4.55	5.60	4.44	5.39	4.40	4.73	5.01	5.25	5.71	5.08	4.60
parametric HF-adj														
van der Waerden	3.43	3.74	4.06	4.44	5.98	4.50	5.80	3.14	3.89	4.35	4.62	5.55	4.74	4.65
KWF	3.65	3.86	4.16	4.59	5.95	4.64	5.62	2.94	3.78	4.36	4.75	5.85	4.90	4.38
Puri & Sen INT	3.26	3.64	4.16	4.55	5.41	4.23	5.42	3.33	3.97	4.58	4.75	5.33	4.74	4.70
Puri & Sen	3.35	3.69	4.05	4.35	5.43	4.38	5.49	3.36	3.92	4.26	4.56	5.42	4.61	4.71
INT	4.43	4.39	4.54	4.84	5.67	4.38	5.54	4.60	4.78	5.00	5.16	5.66	4.98	4.86
ART INT	3.48	4.14	4.58	4.67	5.48	4.41	5.42	4.18	4.35	4.56	4.81	5.45	4.88	4.53
Koch	3.65	3.86	4.16	4.59	5.95	4.64	5.62	2.94	3.78	4.36	4.75	5.85	4.90	4.38
ATS	7.22	6.10	5.15	5.11	6.10	4.75	5.82	11.02	8.78	7.00	6.75	6.74	5.41	5.48



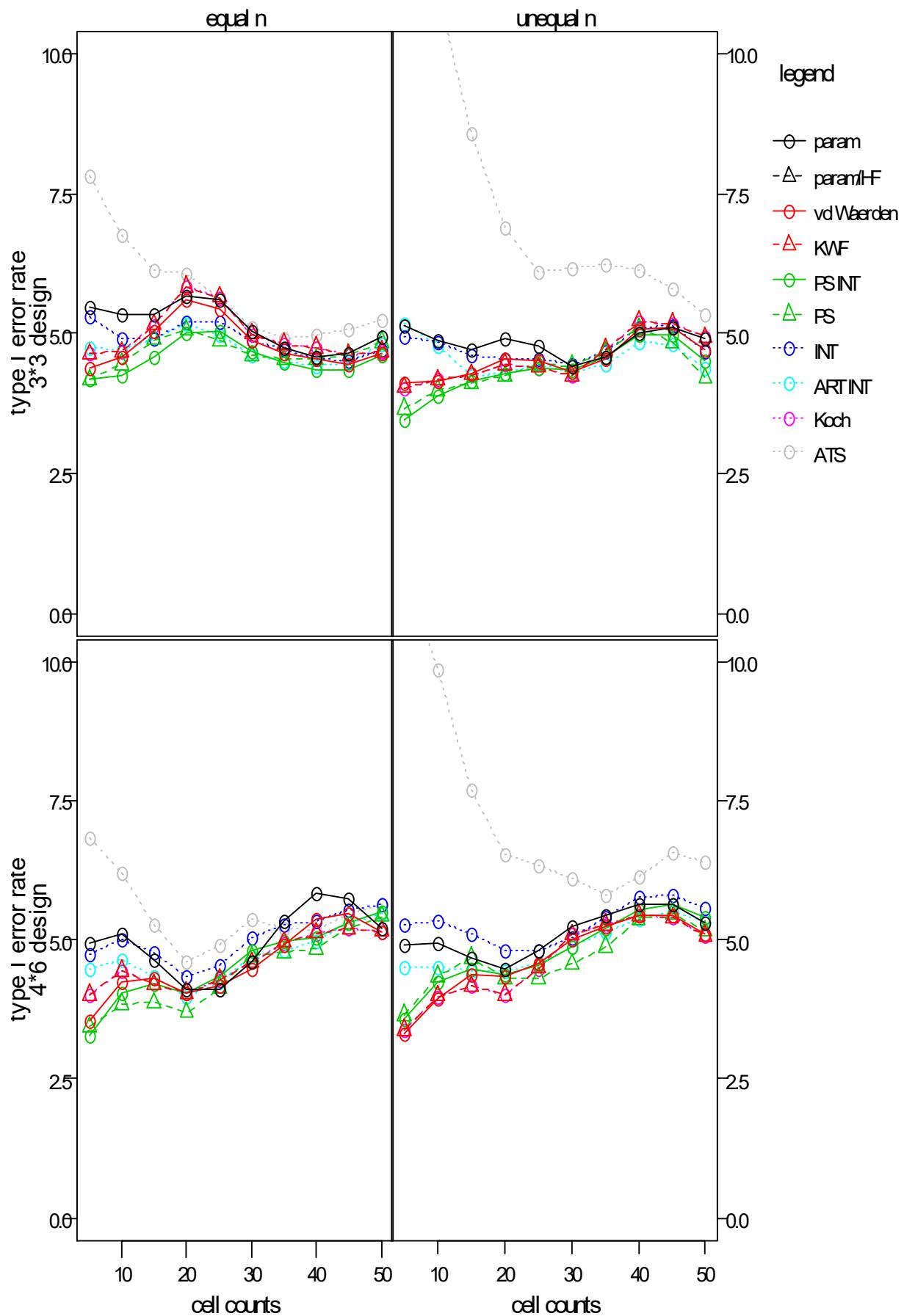
1. 3. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.70	5.10	5.40	5.34	4.68	4.90	5.12	5.63	5.51	5.25	4.88	4.51	5.12	5.86
parametric HF-adj														
van der Waerden	4.10	4.58	5.08	5.20	4.61	4.91	4.97	4.11	4.76	4.99	4.65	4.41	4.97	5.54
KWF	4.47	4.67	5.09	5.20	4.74	4.97	5.03	4.09	4.76	5.07	4.62	4.40	5.10	5.32
Puri & Sen INT	3.88	4.45	5.15	5.29	4.26	4.41	4.90	4.19	4.88	5.05	4.58	4.29	5.24	5.17
Puri & Sen	3.84	4.50	5.09	5.15	4.46	4.51	5.00	4.15	4.69	5.00	4.60	4.42	5.22	4.72
INT	4.71	5.06	5.61	5.70	4.46	4.56	5.00	5.46	5.71	5.56	4.91	4.45	5.47	5.27
ART INT	4.90	5.22	5.54	5.39	4.51	4.81	5.12	5.90	5.97	5.61	4.94	4.54	5.19	5.40
Koch	4.47	4.67	5.09	5.20	4.74	4.97	5.03	4.09	4.76	5.07	4.62	4.40	5.10	5.32
ATS	7.28	6.94	6.60	6.29	4.90	4.86	5.34	14.20	11.44	8.85	7.50	6.21	6.25	5.83
large design (4*6)														
parametric	5.15	5.20	5.19	4.88	4.61	4.60	5.42	5.45	5.22	4.85	4.56	5.06	5.04	4.75
parametric HF-adj														
van der Waerden	4.20	4.51	4.77	4.70	4.30	4.76	5.23	3.88	4.40	4.60	4.41	4.71	5.15	4.53
KWF	4.43	4.62	4.91	4.95	4.44	4.78	5.35	3.95	4.36	4.54	4.31	5.06	4.96	4.90
Puri & Sen INT	3.90	4.44	4.66	4.33	4.86	4.72	5.75	3.78	3.99	4.28	4.25	5.01	5.00	4.86
Puri & Sen	3.93	4.51	4.70	4.34	4.83	4.88	5.57	3.85	4.16	4.51	4.38	4.91	5.08	5.08
INT	5.07	5.08	4.94	4.62	5.03	4.86	5.82	5.20	4.94	4.76	4.55	5.17	5.09	5.03
ART INT	5.00	5.11	5.15	4.75	4.76	4.72	5.68	5.17	5.00	4.69	4.31	5.16	5.26	5.10
Koch	4.43	4.62	4.91	4.95	4.44	4.78	5.35	3.95	4.36	4.54	4.31	5.06	4.96	4.90
ATS	7.51	6.78	6.03	5.29	5.35	5.45	5.98	12.77	10.39	8.00	6.85	6.23	6.16	5.70



1. 3. 1. 13 normal distribution - equal variances - contaminated III

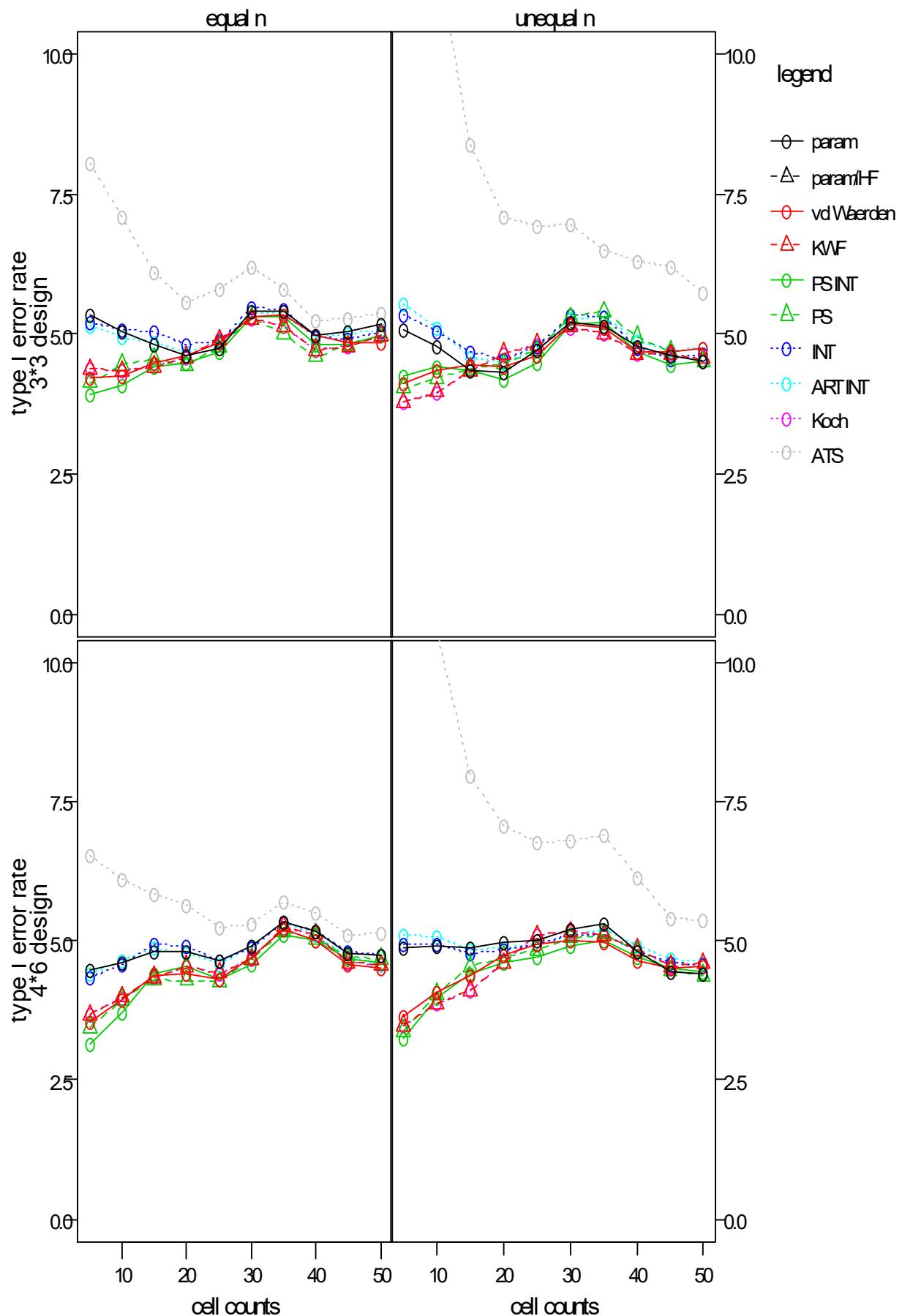
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.48	5.35	5.33	5.67	5.05	4.59	4.94	5.15	4.86	4.71	4.90	4.42	5.01	4.90
parametric HF-adj														
van der Waerden	4.38	4.58	5.05	5.60	4.86	4.55	4.64	4.10	4.15	4.29	4.55	4.31	5.06	4.70
KWF	4.63	4.66	5.15	5.83	4.99	4.74	4.68	4.03	4.17	4.26	4.45	4.24	5.22	4.93
Puri & Sen INT	4.18	4.25	4.59	5.01	4.69	4.36	4.60	3.45	3.89	4.15	4.29	4.36	4.99	4.51
Puri & Sen	4.17	4.45	4.89	5.06	4.60	4.53	4.84	3.66	3.99	4.10	4.24	4.42	5.10	4.21
INT	5.32	4.92	4.91	5.22	4.89	4.56	4.72	4.95	4.84	4.60	4.56	4.45	5.12	4.66
ART INT	4.73	4.72	4.92	5.17	4.60	4.42	4.80	5.17	4.78	4.25	4.28	4.30	4.85	4.38
Koch	4.63	4.66	5.15	5.83	4.99	4.74	4.68	4.03	4.17	4.26	4.45	4.24	5.22	4.93
ATS	7.81	6.76	6.14	6.05	5.09	4.96	5.25	13.77	11.19	8.58	6.88	6.17	6.14	5.35
large design (4*6)														
parametric	4.93	5.09	4.64	4.12	4.60	5.84	5.20	4.90	4.95	4.68	4.49	5.24	5.65	5.30
parametric HF-adj														
van der Waerden	3.56	4.24	4.30	4.05	4.49	5.36	5.13	3.31	3.93	4.36	4.35	5.01	5.45	5.11
KWF	4.01	4.44	4.20	4.04	4.60	5.12	5.15	3.38	3.99	4.17	4.01	5.10	5.44	5.08
Puri & Sen INT	3.29	4.04	4.21	4.03	4.80	5.04	5.50	3.58	4.23	4.47	4.38	4.86	5.55	5.40
Puri & Sen	3.43	3.85	3.86	3.69	4.70	4.84	5.42	3.65	4.35	4.67	4.30	4.56	5.36	5.16
INT	4.73	4.99	4.78	4.35	5.05	5.35	5.63	5.28	5.35	5.12	4.80	5.05	5.76	5.58
ART INT	4.46	4.64	4.33	3.98	4.69	4.96	5.47	4.52	4.50	4.44	4.43	4.86	5.38	5.35
Koch	4.01	4.44	4.20	4.04	4.60	5.12	5.15	3.38	3.99	4.17	4.01	5.10	5.44	5.08
ATS	6.84	6.21	5.28	4.62	5.38	5.18	5.62	11.66	9.84	7.69	6.53	6.10	6.15	6.41



1. 3. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

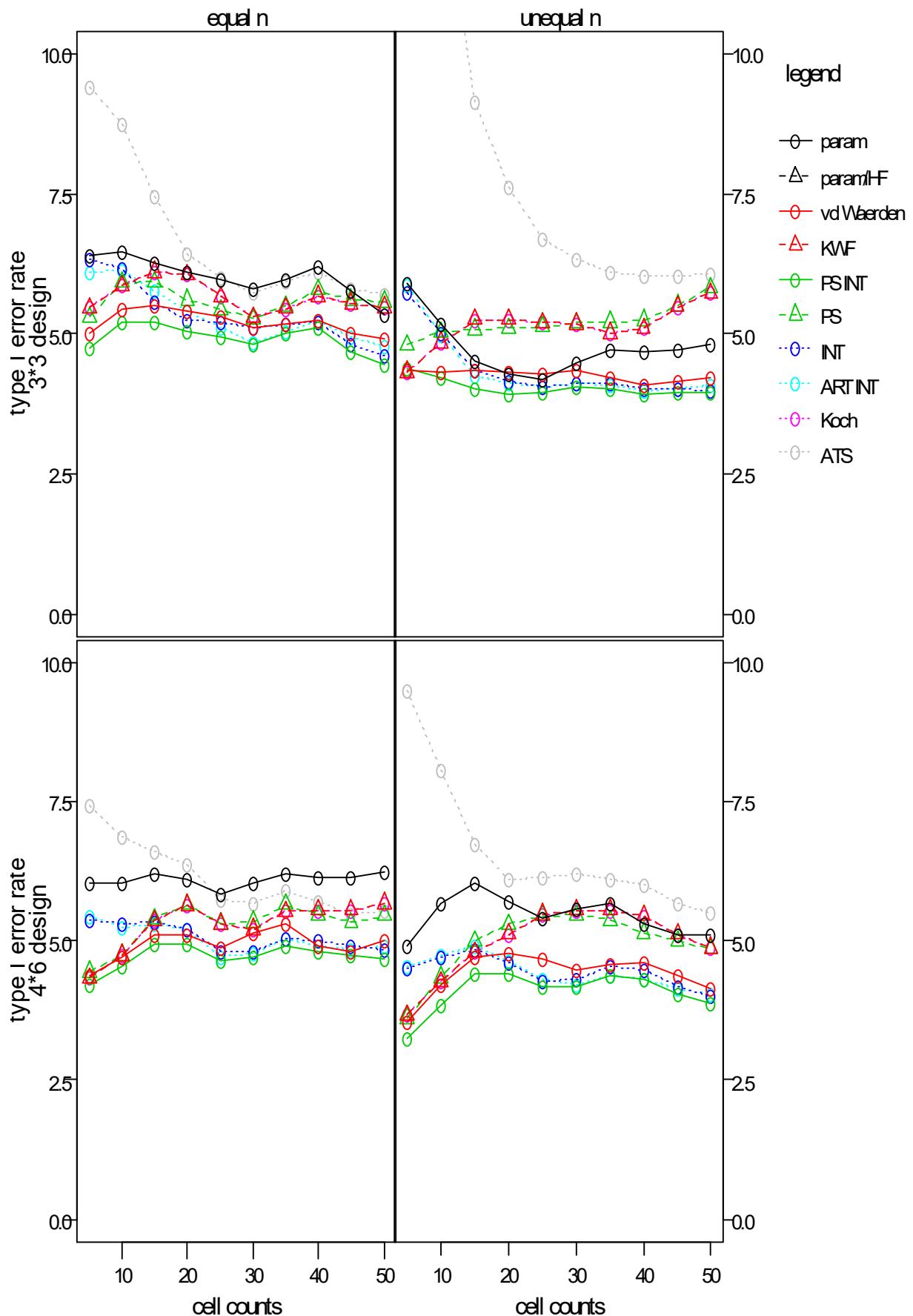
1. 3. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.03	4.80	4.60	5.40	4.96	5.18	5.08	4.79	4.35	4.30	5.22	4.76	4.50
parametric HF-adj														
van der Waerden	4.22	4.24	4.48	4.60	5.31	4.99	4.83	4.11	4.34	4.46	4.41	5.16	4.67	4.75
KWF	4.37	4.34	4.42	4.58	5.26	4.71	4.98	3.77	3.96	4.35	4.65	5.12	4.65	4.56
Puri & Sen INT	3.92	4.08	4.42	4.49	5.30	4.80	4.98	4.25	4.41	4.33	4.19	5.16	4.66	4.52
Puri & Sen	4.13	4.45	4.55	4.44	5.28	4.59	4.97	4.03	4.20	4.38	4.47	5.29	4.95	4.50
INT	5.22	5.06	5.04	4.80	5.47	4.94	5.03	5.33	5.05	4.68	4.54	5.33	4.74	4.65
ART INT	5.14	4.94	4.84	4.68	5.41	4.94	5.07	5.53	5.11	4.59	4.49	5.26	4.86	4.73
Koch	4.37	4.34	4.42	4.58	5.26	4.71	4.98	3.77	3.96	4.35	4.65	5.12	4.65	4.56
ATS	8.04	7.08	6.08	5.58	6.19	5.23	5.38	15.51	11.79	8.36	7.09	6.96	6.28	5.73
large design (4*6)														
parametric	4.48	4.61	4.80	4.80	4.90	5.16	4.73	4.88	4.92	4.86	4.97	5.19	4.82	4.40
parametric HF-adj														
van der Waerden	3.55	3.95	4.36	4.42	4.71	5.00	4.50	3.65	4.06	4.39	4.74	5.01	4.65	4.55
KWF	3.66	3.99	4.34	4.54	4.66	5.12	4.57	3.48	3.88	4.11	4.60	5.16	4.84	4.60
Puri & Sen INT	3.15	3.71	4.40	4.54	4.59	5.00	4.60	3.26	3.96	4.41	4.61	4.91	4.71	4.43
Puri & Sen	3.45	3.94	4.31	4.29	4.68	5.04	4.68	3.38	4.04	4.53	4.72	5.05	4.80	4.38
INT	4.35	4.59	4.94	4.92	4.88	5.18	4.73	4.95	4.95	4.76	4.83	5.11	4.81	4.57
ART INT	4.42	4.65	4.86	4.78	4.90	5.12	4.58	5.10	5.06	4.85	4.88	5.10	4.90	4.62
Koch	3.66	3.99	4.34	4.54	4.66	5.12	4.57	3.48	3.88	4.11	4.60	5.16	4.84	4.60
ATS	6.55	6.10	5.85	5.64	5.31	5.50	5.15	12.91	10.56	7.97	7.08	6.79	6.12	5.37



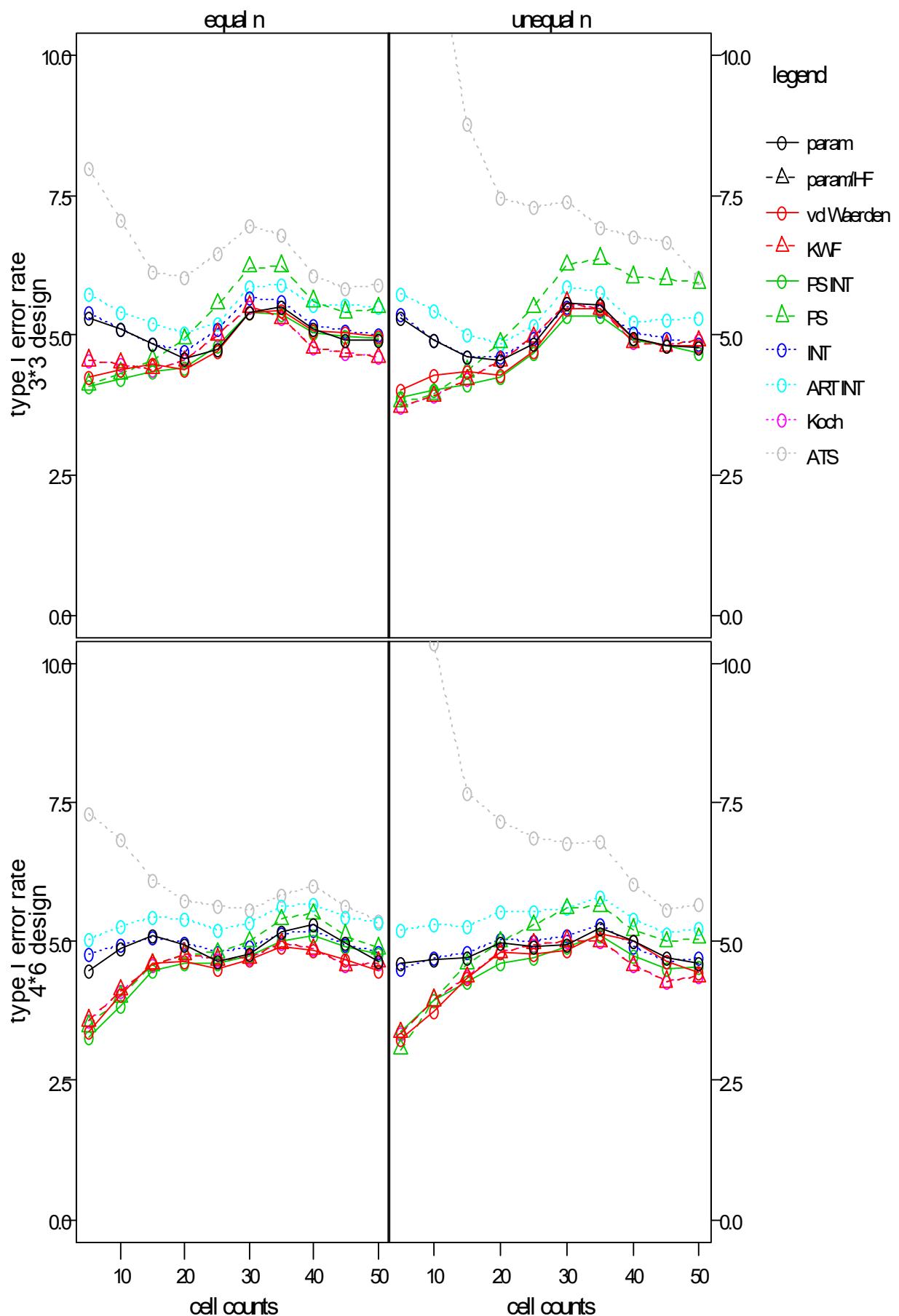
1. 3. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.38	6.46	6.25	6.09	5.79	6.19	5.33	5.90	5.16	4.51	4.28	4.47	4.66	4.80
parametric HF-adj														
van der Waerden	5.01	5.42	5.49	5.39	5.11	5.25	4.92	4.33	4.30	4.33	4.31	4.33	4.09	4.22
KWF	5.46	5.86	6.10	6.06	5.29	5.67	5.47	4.31	4.84	5.25	5.25	5.17	5.09	5.72
Puri & Sen INT	4.74	5.22	5.22	5.05	4.81	5.10	4.43	4.37	4.22	4.01	3.93	4.04	3.91	3.95
Puri & Sen	5.29	5.91	5.92	5.60	5.26	5.78	5.57	4.80	5.03	5.08	5.09	5.19	5.24	5.82
INT	6.32	6.15	5.56	5.24	5.10	5.20	4.60	5.72	5.02	4.35	4.14	4.12	4.03	3.97
ART INT	6.11	6.14	5.78	5.41	4.84	5.25	4.77	5.85	4.96	4.24	4.11	4.10	3.97	4.08
Koch	5.46	5.86	6.10	6.06	5.29	5.67	5.47	4.31	4.84	5.25	5.25	5.17	5.09	5.72
ATS	9.40	8.75	7.44	6.44	5.74	6.10	5.70	18.05	13.16	9.15	7.60	6.33	6.02	6.05
large design (4*6)														
parametric	6.03	6.04	6.21	6.11	6.04	6.12	6.22	4.91	5.66	6.05	5.70	5.56	5.32	5.12
parametric HF-adj														
van der Waerden	4.37	4.69	5.12	5.12	5.15	4.91	5.00	3.55	4.20	4.71	4.78	4.49	4.61	4.13
KWF	4.33	4.74	5.36	5.64	5.21	5.55	5.67	3.66	4.26	4.80	5.12	5.55	5.45	4.87
Puri & Sen INT	4.20	4.55	4.94	4.94	4.72	4.81	4.68	3.25	3.84	4.42	4.41	4.19	4.30	3.88
Puri & Sen	4.45	4.74	5.39	5.65	5.34	5.46	5.45	3.61	4.35	5.00	5.30	5.46	5.14	4.85
INT	5.38	5.29	5.33	5.21	4.80	5.00	4.85	4.52	4.69	4.85	4.60	4.31	4.46	4.00
ART INT	5.43	5.24	5.29	5.20	4.78	4.90	4.92	4.53	4.75	4.89	4.65	4.22	4.31	4.05
Koch	4.33	4.74	5.36	5.64	5.21	5.55	5.67	3.66	4.26	4.80	5.12	5.55	5.45	4.87
ATS	7.42	6.85	6.61	6.36	5.66	5.69	5.53	9.48	8.05	6.74	6.10	6.20	6.00	5.50



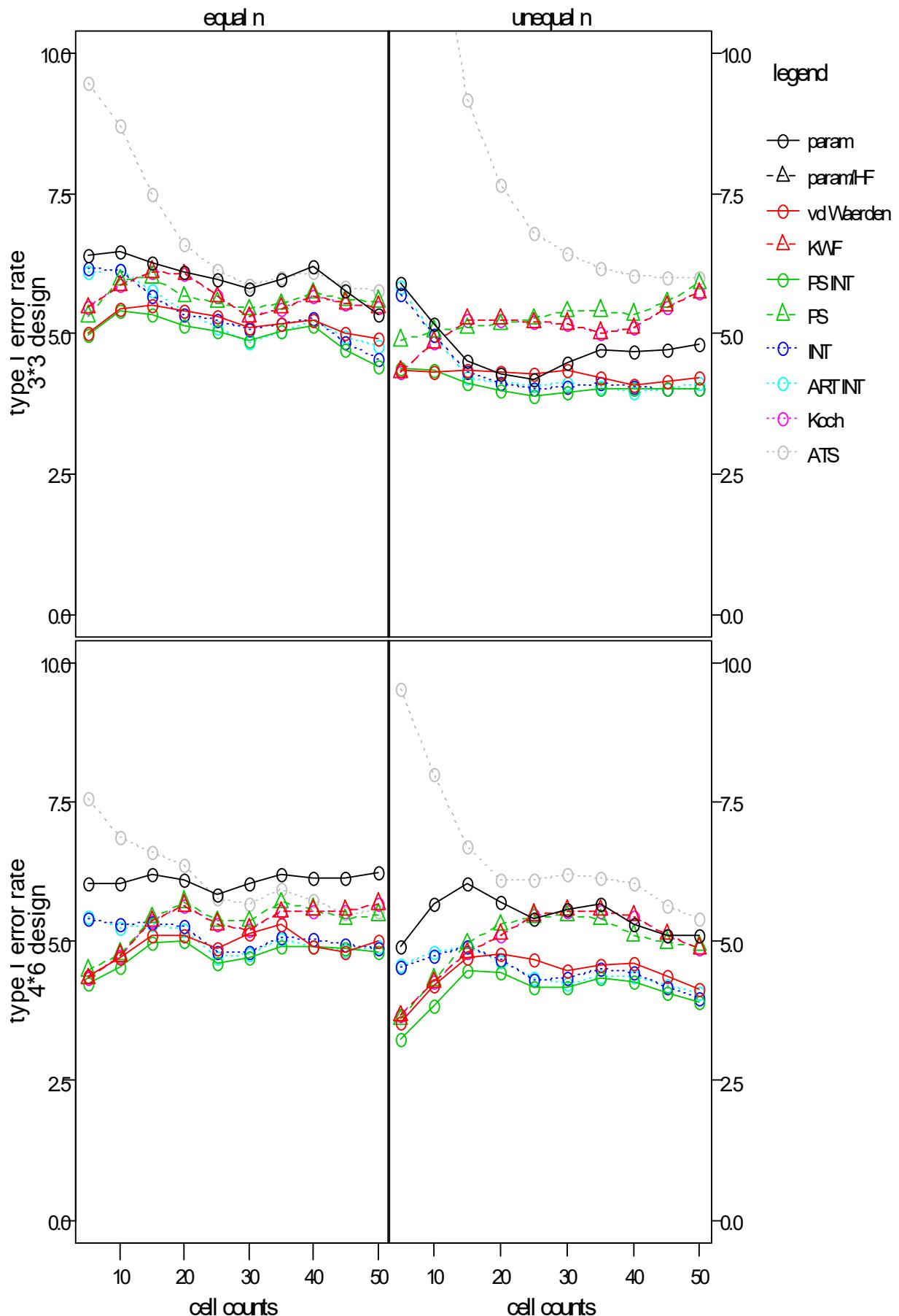
1. 3. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.32	5.12	4.85	4.58	5.39	5.09	4.92	5.32	4.92	4.62	4.55	5.56	4.95	4.76
parametric HF-adj														
van der Waerden	4.25	4.39	4.49	4.39	5.41	5.07	4.96	4.03	4.28	4.34	4.29	5.47	4.95	4.82
KWF	4.55	4.49	4.39	4.53	5.51	4.76	4.60	3.71	3.91	4.21	4.54	5.57	4.86	4.90
Puri & Sen INT	4.07	4.20	4.36	4.40	5.41	5.03	4.95	3.87	4.01	4.11	4.25	5.33	4.90	4.68
Puri & Sen	4.12	4.31	4.55	4.93	6.21	5.61	5.48	3.80	3.95	4.35	4.86	6.25	6.03	5.93
INT	5.40	5.10	4.83	4.72	5.68	5.17	5.01	5.37	4.92	4.60	4.62	5.50	5.03	4.85
ART INT	5.72	5.41	5.20	5.03	5.85	5.55	5.51	5.72	5.44	5.01	4.84	5.88	5.24	5.30
Koch	4.55	4.49	4.39	4.53	5.51	4.76	4.60	3.71	3.91	4.21	4.54	5.57	4.86	4.90
ATS	7.97	7.05	6.13	6.03	6.96	6.06	5.90	15.74	12.10	8.78	7.45	7.40	6.76	6.03
large design (4*6)														
parametric	4.46	4.86	5.12	4.94	4.78	5.31	4.63	4.60	4.67	4.70	4.96	4.94	5.00	4.60
parametric HF-adj														
van der Waerden	3.38	4.05	4.62	4.65	4.67	4.85	4.47	3.23	3.75	4.34	4.81	4.83	4.99	4.45
KWF	3.58	4.12	4.59	4.78	4.70	4.86	4.62	3.36	3.94	4.36	4.79	5.01	4.56	4.37
Puri & Sen INT	3.28	3.85	4.46	4.62	4.75	5.10	4.78	3.38	3.94	4.29	4.61	4.89	4.75	4.53
Puri & Sen	3.48	4.01	4.58	4.76	5.00	5.50	4.88	3.06	3.95	4.60	5.00	5.59	5.21	5.05
INT	4.76	4.95	5.08	4.97	4.90	5.19	4.82	4.51	4.69	4.80	5.04	5.11	4.91	4.70
ART INT	5.03	5.26	5.45	5.39	5.35	5.66	5.33	5.20	5.29	5.28	5.54	5.60	5.41	5.23
Koch	3.58	4.12	4.59	4.78	4.70	4.86	4.62	3.36	3.94	4.36	4.79	5.01	4.56	4.37
ATS	7.30	6.84	6.09	5.75	5.56	5.99	5.37	13.27	10.36	7.65	7.15	6.76	6.05	5.68



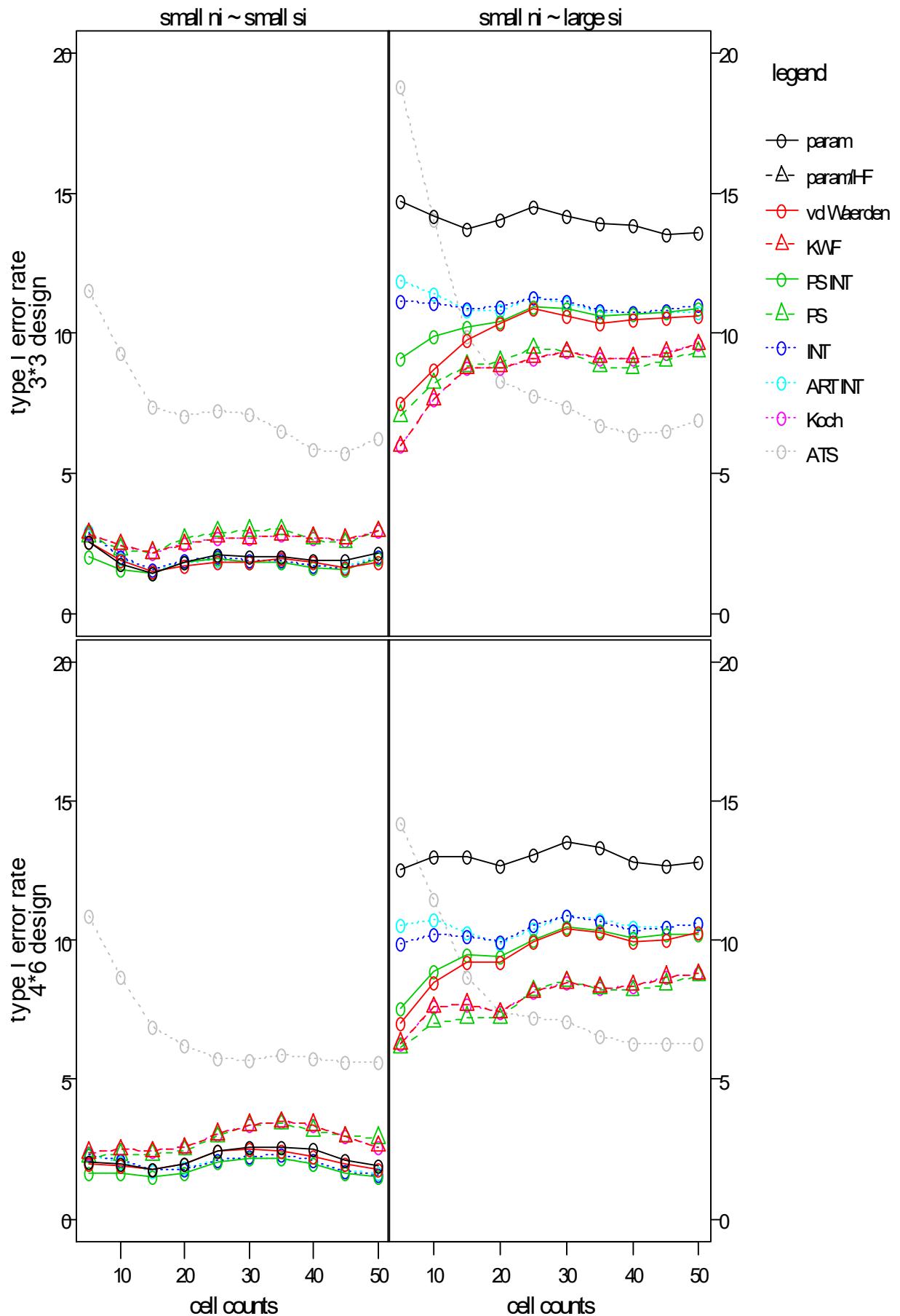
1. 3. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.38	6.46	6.25	6.09	5.79	6.19	5.33	5.90	5.16	4.51	4.28	4.47	4.66	4.80
parametric HF-adj														
van der Waerden	5.01	5.42	5.49	5.39	5.11	5.25	4.92	4.33	4.30	4.33	4.31	4.33	4.09	4.22
KWF	5.46	5.86	6.10	6.06	5.29	5.67	5.47	4.31	4.84	5.25	5.25	5.17	5.09	5.72
Puri & Sen INT	4.99	5.40	5.34	5.15	4.88	5.15	4.42	4.38	4.33	4.12	3.99	3.95	4.00	4.00
Puri & Sen	5.31	5.95	6.00	5.66	5.43	5.72	5.57	4.88	5.04	5.09	5.16	5.39	5.34	5.89
INT	6.16	6.12	5.67	5.35	5.07	5.26	4.53	5.70	4.98	4.30	4.11	4.05	4.05	4.00
ART INT	6.11	6.14	5.78	5.41	4.84	5.25	4.77	5.84	4.96	4.22	4.11	4.10	3.96	4.12
Koch	5.46	5.86	6.10	6.06	5.29	5.67	5.47	4.31	4.84	5.25	5.25	5.17	5.09	5.72
ATS	9.47	8.71	7.47	6.59	5.88	6.10	5.77	17.73	13.04	9.18	7.66	6.44	6.03	6.00
large design (4*6)														
parametric	6.03	6.04	6.21	6.11	6.04	6.12	6.22	4.91	5.66	6.05	5.70	5.56	5.32	5.12
parametric HF-adj														
van der Waerden	4.37	4.69	5.12	5.12	5.15	4.91	5.00	3.55	4.20	4.71	4.78	4.49	4.61	4.13
KWF	4.33	4.74	5.36	5.64	5.21	5.55	5.67	3.66	4.26	4.80	5.12	5.55	5.45	4.87
Puri & Sen INT	4.25	4.55	4.96	4.99	4.69	4.90	4.82	3.26	3.85	4.46	4.44	4.17	4.27	3.90
Puri & Sen	4.48	4.78	5.42	5.70	5.36	5.58	5.47	3.60	4.31	4.96	5.29	5.46	5.11	4.92
INT	5.42	5.30	5.35	5.26	4.82	5.03	4.88	4.55	4.75	4.92	4.66	4.33	4.44	3.98
ART INT	5.43	5.24	5.29	5.20	4.78	4.90	4.92	4.57	4.80	4.91	4.65	4.25	4.36	4.08
Koch	4.33	4.74	5.36	5.64	5.21	5.55	5.67	3.66	4.26	4.80	5.12	5.55	5.45	4.87
ATS	7.56	6.88	6.61	6.38	5.67	5.74	5.55	9.51	8.01	6.69	6.09	6.19	6.03	5.42



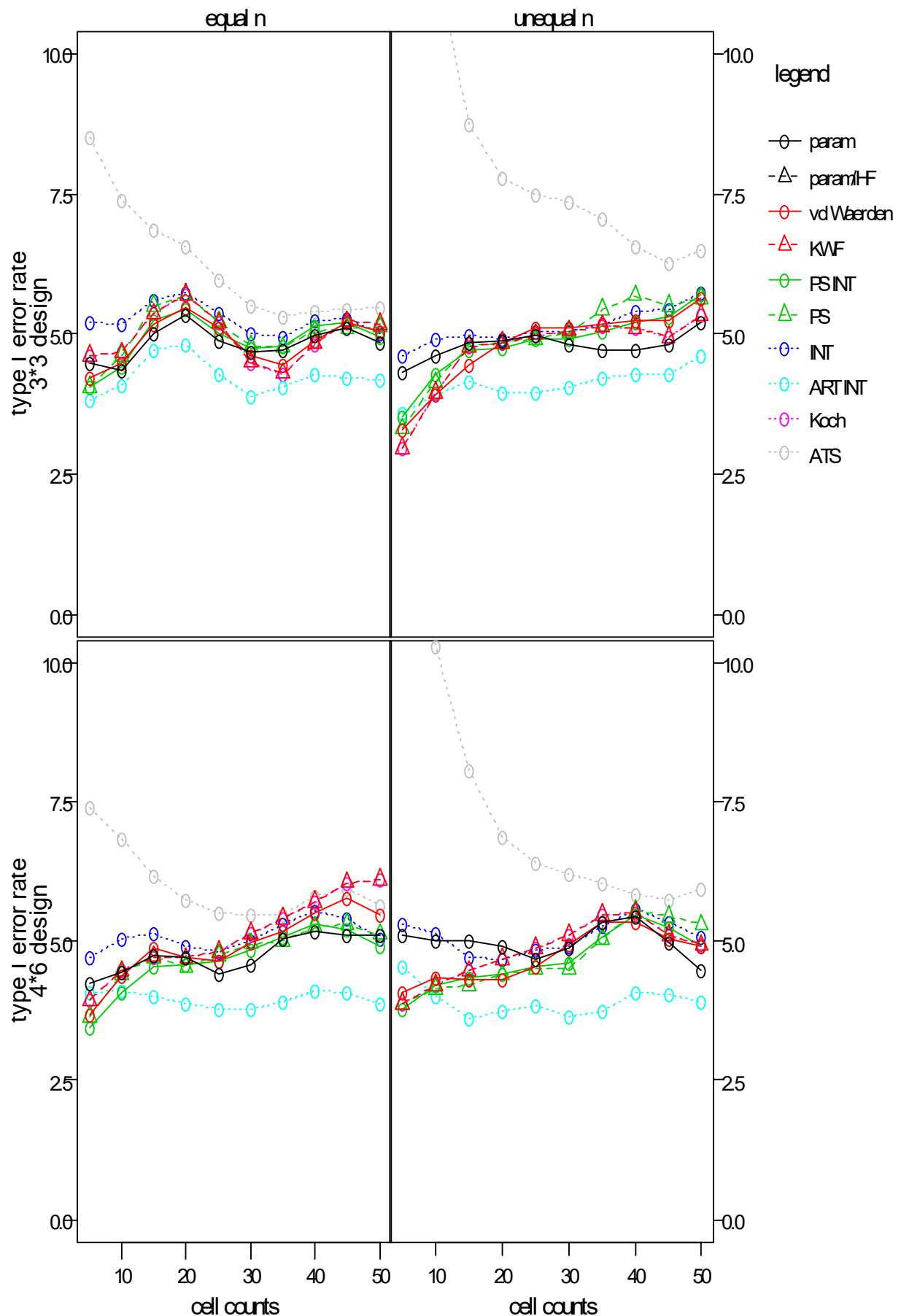
1. 3. 2. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.54	1.76	1.41	1.81	2.04	1.91	2.14	14.70	14.17	13.72	14.03	14.16	13.84	13.55
parametric HF-adj														
van der Waerden	2.57	1.89	1.48	1.70	1.80	1.80	1.82	7.51	8.72	9.75	10.36	10.62	10.49	10.59
KWF	2.84	2.44	2.16	2.46	2.70	2.71	2.92	5.97	7.64	8.76	8.79	9.34	9.12	9.60
Puri & Sen INT	2.02	1.53	1.40	1.82	1.81	1.61	1.94	9.11	9.89	10.24	10.41	10.89	10.66	10.85
Puri & Sen	2.75	2.29	2.16	2.65	2.95	2.64	2.92	7.06	8.21	8.84	8.96	9.34	8.77	9.32
INT	2.89	2.02	1.57	1.90	1.89	1.67	1.99	11.15	11.10	10.88	10.93	11.15	10.75	11.00
ART INT	2.97	1.98	1.50	1.83	1.80	1.70	2.02	11.87	11.43	10.80	10.82	11.10	10.72	10.77
Koch	2.84	2.44	2.16	2.46	2.70	2.71	2.92	5.97	7.64	8.76	8.79	9.34	9.12	9.60
ATS	11.53	9.26	7.39	7.05	7.10	5.83	6.26	18.83	14.06	9.89	8.30	7.35	6.38	6.89
large design (4*6)														
parametric	2.05	1.95	1.77	2.00	2.54	2.51	1.92	12.53	13.02	13.03	12.67	13.51	12.78	12.82
parametric HF-adj														
van der Waerden	1.95	1.89	1.74	1.96	2.50	2.25	1.77	7.01	8.50	9.19	9.24	10.44	9.95	10.30
KWF	2.37	2.48	2.41	2.54	3.38	3.36	2.60	6.30	7.59	7.70	7.39	8.49	8.38	8.80
Puri & Sen INT	1.62	1.64	1.51	1.66	2.14	1.99	1.53	7.54	8.88	9.51	9.40	10.46	10.11	10.21
Puri & Sen	2.22	2.31	2.30	2.46	3.34	3.17	2.92	6.13	7.05	7.22	7.21	8.54	8.19	8.74
INT	2.33	2.08	1.75	1.79	2.25	2.09	1.55	9.91	10.22	10.14	9.97	10.90	10.36	10.63
ART INT	2.30	2.04	1.73	1.83	2.17	2.00	1.62	10.51	10.74	10.30	9.90	10.90	10.45	10.60
Koch	2.37	2.48	2.41	2.54	3.38	3.36	2.60	6.30	7.59	7.70	7.39	8.49	8.38	8.80
ATS	10.90	8.70	6.91	6.24	5.72	5.78	5.63	14.20	11.50	8.71	7.40	7.08	6.30	6.30



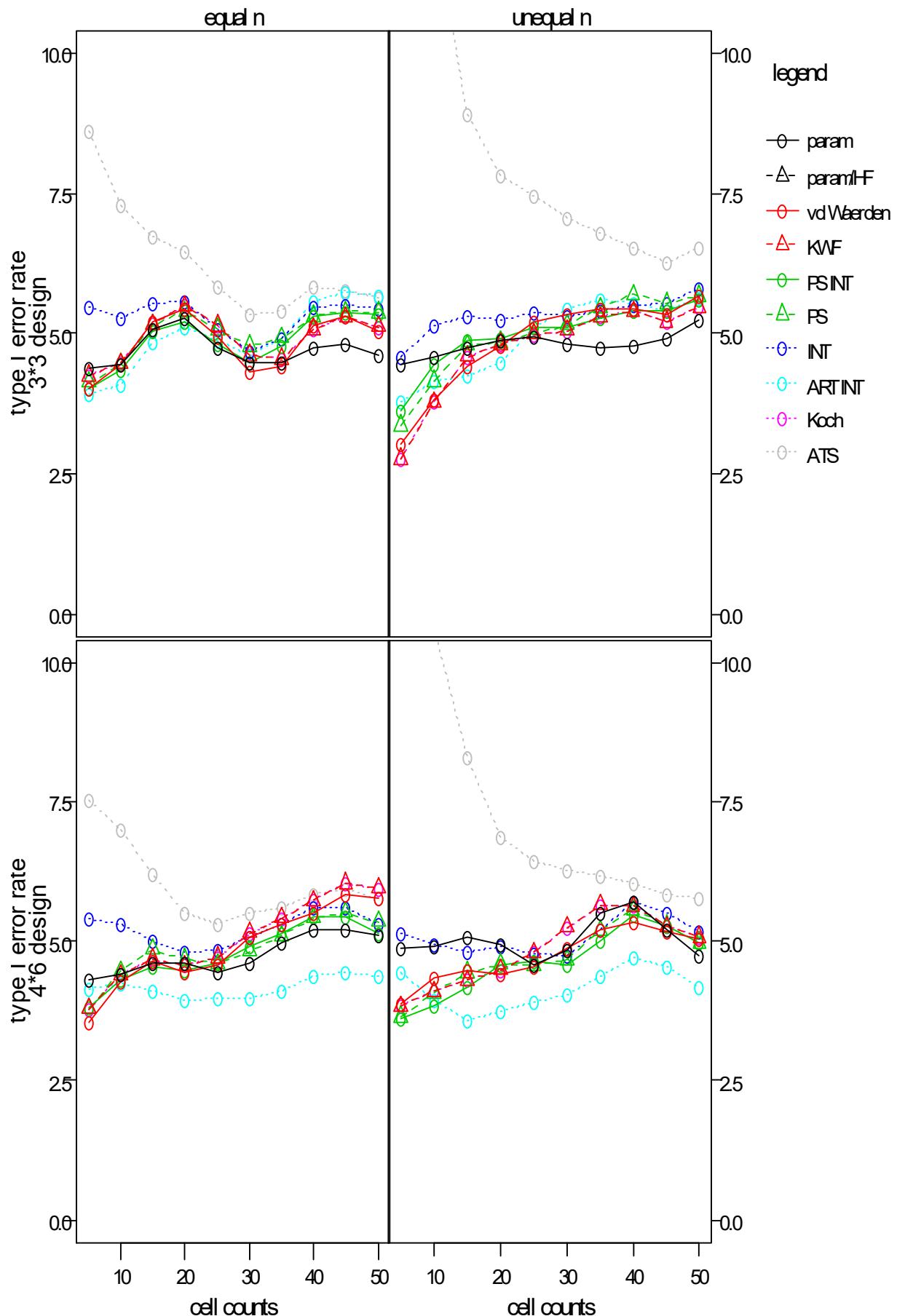
1. 3. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.49	4.35	5.00	5.34	4.66	4.98	4.83	4.32	4.61	4.84	4.89	4.80	4.70	5.20
parametric HF-adj														
van der Waerden	4.23	4.47	5.16	5.46	4.60	4.89	5.03	3.30	3.91	4.46	4.84	5.10	5.24	5.64
KWF	4.62	4.67	5.36	5.71	4.49	4.82	5.17	2.96	3.95	4.78	4.85	5.05	5.11	5.34
Puri & Sen INT	4.05	4.42	5.24	5.42	4.74	5.14	4.93	3.53	4.28	4.70	4.75	4.91	5.22	5.69
Puri & Sen	4.05	4.61	5.51	5.70	4.78	5.04	5.12	3.31	4.14	4.78	4.83	5.03	5.68	5.64
INT	5.20	5.16	5.59	5.74	5.01	5.24	5.00	4.62	4.90	4.99	4.91	5.03	5.40	5.74
ART INT	3.82	4.09	4.71	4.82	3.90	4.28	4.17	3.58	3.92	4.14	3.96	4.05	4.28	4.60
Koch	4.62	4.67	5.36	5.71	4.49	4.82	5.17	2.96	3.95	4.78	4.85	5.05	5.11	5.34
ATS	8.51	7.38	6.84	6.55	5.49	5.39	5.47	15.01	11.60	8.75	7.78	7.35	6.55	6.50
large design (4*6)														
parametric	4.23	4.45	4.74	4.70	4.59	5.16	5.10	5.12	5.01	5.01	4.91	4.88	5.45	4.48
parametric HF-adj														
van der Waerden	3.66	4.39	4.88	4.70	4.97	5.49	5.48	4.08	4.34	4.31	4.31	4.95	5.34	4.92
KWF	3.93	4.47	4.72	4.70	5.14	5.71	6.10	3.88	4.21	4.46	4.67	5.11	5.51	4.93
Puri & Sen INT	3.43	4.06	4.53	4.58	4.85	5.31	4.92	3.76	4.21	4.34	4.42	4.61	5.47	4.92
Puri & Sen	3.64	4.41	4.69	4.54	4.95	5.25	5.12	3.88	4.15	4.21	4.40	4.51	5.54	5.30
INT	4.71	5.04	5.14	4.92	4.99	5.53	5.03	5.32	5.15	4.72	4.68	4.91	5.57	5.08
ART INT	4.08	4.10	4.01	3.88	3.78	4.10	3.87	4.54	4.01	3.60	3.74	3.65	4.06	3.92
Koch	3.93	4.47	4.72	4.70	5.14	5.71	6.10	3.88	4.21	4.46	4.67	5.11	5.51	4.93
ATS	7.40	6.83	6.16	5.72	5.46	5.80	5.65	12.08	10.28	8.06	6.85	6.21	5.83	5.92



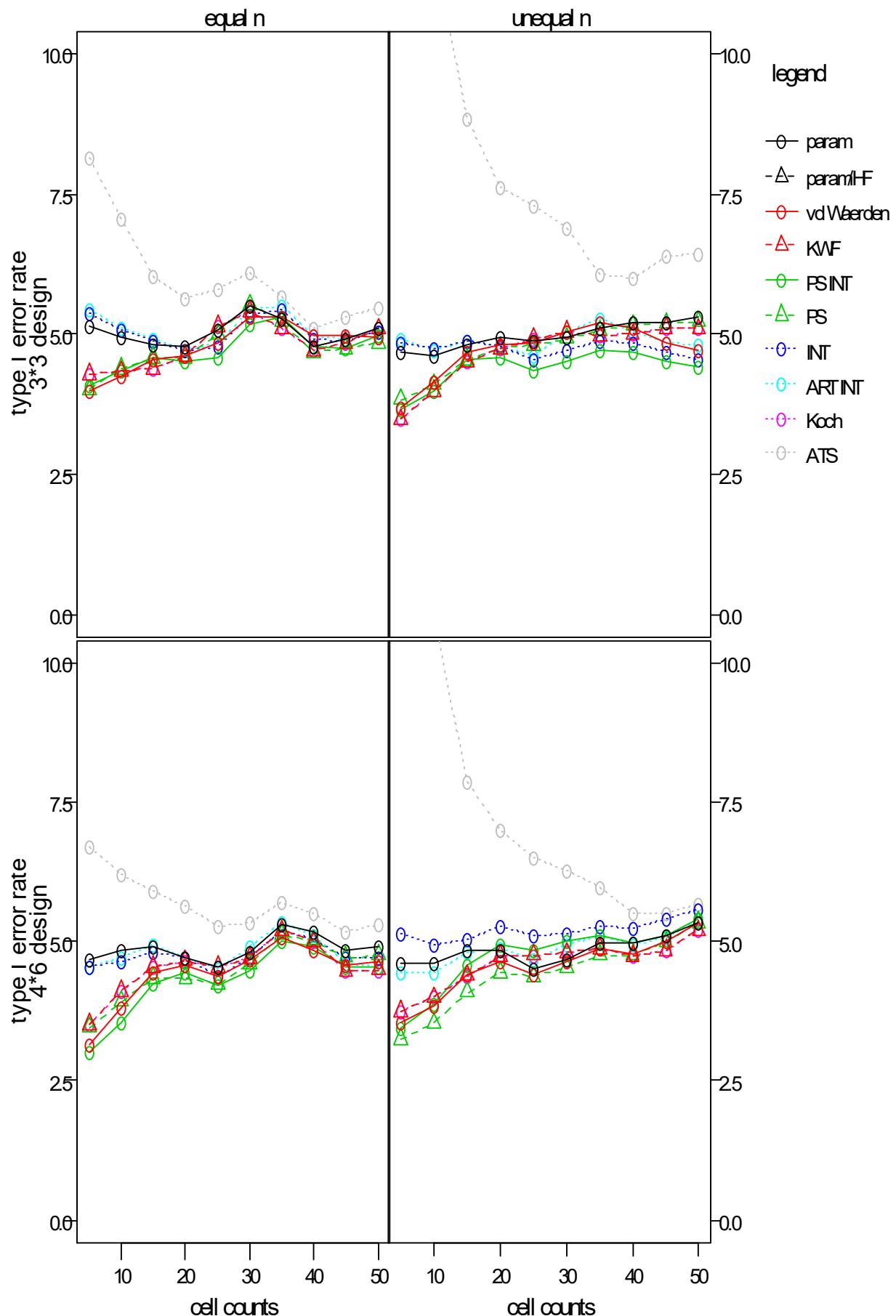
1. 3. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.39	4.44	5.07	5.26	4.49	4.75	4.62	4.45	4.58	4.73	4.86	4.80	4.78	5.24
parametric HF-adj														
van der Waerden	4.02	4.44	5.21	5.45	4.30	5.15	5.03	3.04	3.81	4.41	4.76	5.35	5.44	5.66
KWF	4.25	4.47	5.16	5.49	4.61	5.07	5.12	2.76	3.77	4.59	4.81	5.05	5.39	5.47
Puri & Sen INT	4.00	4.36	5.05	5.20	4.49	5.29	5.35	3.61	4.43	4.88	4.91	5.12	5.40	5.60
Puri & Sen	4.13	4.46	5.15	5.39	4.78	5.31	5.37	3.36	4.15	4.79	4.85	5.15	5.69	5.67
INT	5.47	5.28	5.55	5.56	4.67	5.47	5.42	4.58	5.15	5.30	5.24	5.30	5.50	5.79
ART INT	3.92	4.09	4.83	5.12	4.62	5.56	5.67	3.78	4.16	4.24	4.47	5.43	5.54	5.64
Koch	4.25	4.47	5.16	5.49	4.61	5.07	5.12	2.76	3.77	4.59	4.81	5.05	5.39	5.47
ATS	8.60	7.28	6.71	6.45	5.34	5.83	5.62	16.21	12.36	8.89	7.80	7.05	6.51	6.52
large design (4*6)														
parametric	4.30	4.40	4.61	4.60	4.61	5.20	5.12	4.88	4.91	5.06	4.95	4.83	5.71	4.75
parametric HF-adj														
van der Waerden	3.53	4.29	4.65	4.44	5.07	5.50	5.78	3.86	4.34	4.49	4.41	4.88	5.35	5.05
KWF	3.79	4.40	4.67	4.57	5.15	5.72	5.95	3.83	4.10	4.30	4.49	5.25	5.62	5.07
Puri & Sen INT	3.80	4.30	4.54	4.49	4.90	5.45	5.13	3.61	3.84	4.16	4.59	4.59	5.46	4.98
Puri & Sen	3.79	4.47	4.85	4.67	4.82	5.42	5.35	3.65	4.08	4.44	4.59	4.66	5.56	4.98
INT	5.40	5.29	5.00	4.80	5.07	5.59	5.31	5.15	4.95	4.80	4.89	4.74	5.69	5.17
ART INT	4.13	4.25	4.10	3.94	3.99	4.38	4.38	4.44	3.95	3.58	3.75	4.03	4.70	4.18
Koch	3.79	4.40	4.67	4.57	5.15	5.72	5.95	3.83	4.10	4.30	4.49	5.25	5.62	5.07
ATS	7.54	7.01	6.20	5.50	5.50	5.84	5.78	12.19	10.62	8.28	6.85	6.27	6.04	5.77



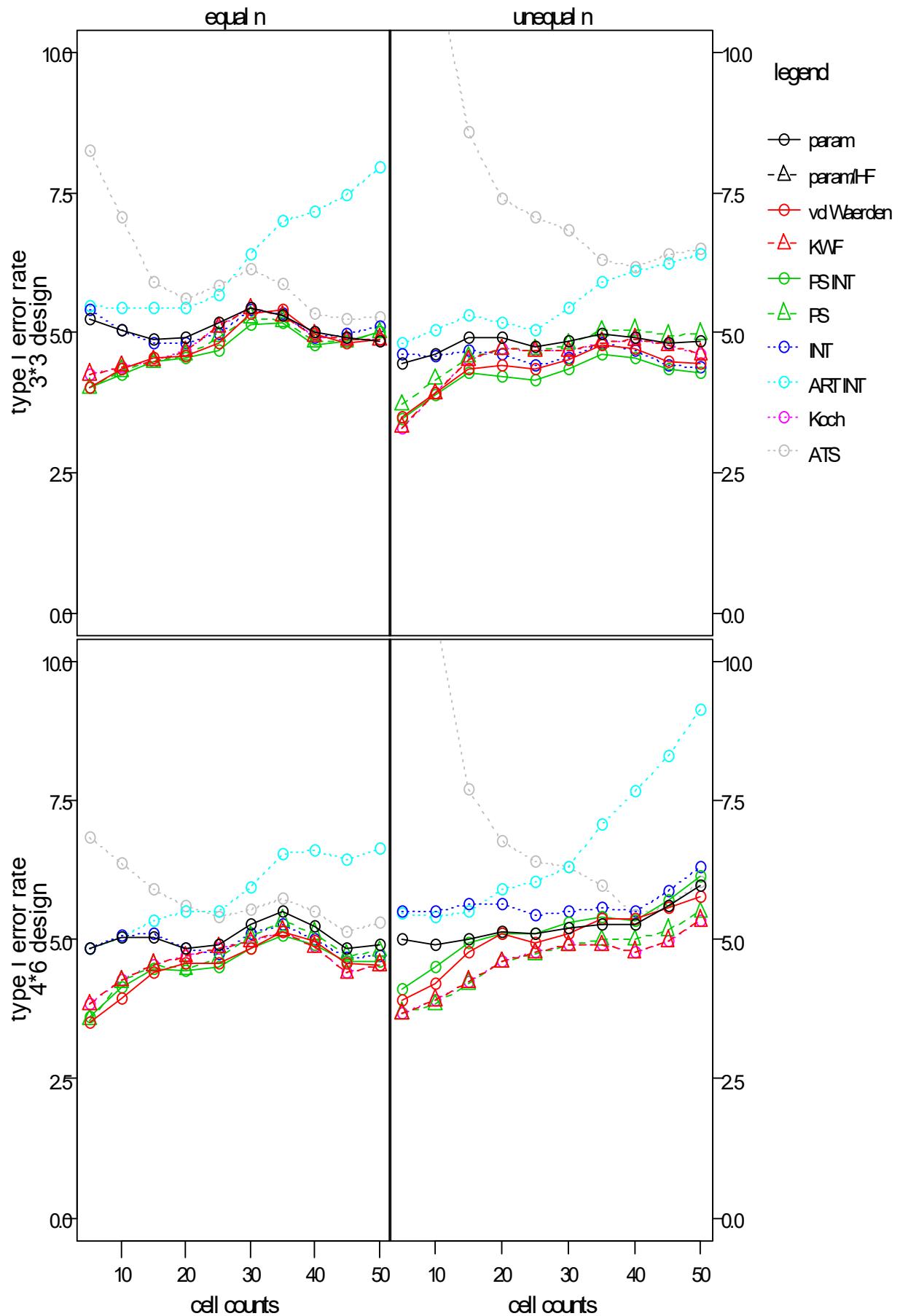
1. 3. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.15	4.95	4.80	4.76	5.50	4.79	5.12	4.67	4.61	4.81	4.94	4.94	5.20	5.30
parametric HF-adj														
van der Waerden	3.98	4.24	4.55	4.61	5.30	4.99	4.95	3.70	4.14	4.67	4.81	5.04	5.12	4.72
KWF	4.28	4.33	4.38	4.61	5.41	4.70	5.10	3.48	3.98	4.50	4.74	5.04	5.00	5.10
Puri & Sen INT	4.07	4.33	4.58	4.51	5.16	4.79	4.97	3.65	3.97	4.54	4.57	4.51	4.66	4.40
Puri & Sen	4.00	4.38	4.58	4.58	5.53	4.68	4.85	3.83	4.11	4.55	4.75	4.92	5.16	5.22
INT	5.37	5.06	4.88	4.72	5.35	4.91	5.05	4.84	4.73	4.88	4.79	4.71	4.83	4.55
ART INT	5.44	5.10	4.91	4.72	5.45	4.99	5.05	4.92	4.71	4.86	4.79	5.04	5.04	4.82
Koch	4.28	4.33	4.38	4.61	5.41	4.70	5.10	3.48	3.98	4.50	4.74	5.04	5.00	5.10
ATS	8.16	7.06	6.03	5.62	6.10	5.12	5.48	15.05	11.90	8.85	7.60	6.89	6.00	6.42
large design (4*6)														
parametric	4.67	4.85	4.92	4.72	4.81	5.17	4.90	4.60	4.62	4.83	4.84	4.67	4.96	5.35
parametric HF-adj														
van der Waerden	3.15	3.80	4.45	4.58	4.66	4.85	4.65	3.55	3.85	4.42	4.64	4.64	4.78	5.33
KWF	3.51	4.11	4.54	4.65	4.71	5.00	4.49	3.75	4.00	4.39	4.74	4.80	4.74	5.20
Puri & Sen INT	3.01	3.56	4.25	4.44	4.48	4.89	4.55	3.46	3.89	4.56	4.94	4.99	4.96	5.40
Puri & Sen	3.46	3.92	4.34	4.35	4.60	5.02	4.75	3.25	3.54	4.09	4.45	4.53	4.75	5.34
INT	4.53	4.64	4.82	4.70	4.69	5.03	4.70	5.15	4.94	5.05	5.26	5.15	5.25	5.57
ART INT	4.53	4.70	4.94	4.72	4.91	5.09	4.55	4.45	4.45	4.79	4.88	4.94	4.95	5.40
Koch	3.51	4.11	4.54	4.65	4.71	5.00	4.49	3.75	4.00	4.39	4.74	4.80	4.74	5.20
ATS	6.69	6.20	5.89	5.64	5.33	5.50	5.29	14.25	10.83	7.85	7.00	6.26	5.51	5.68



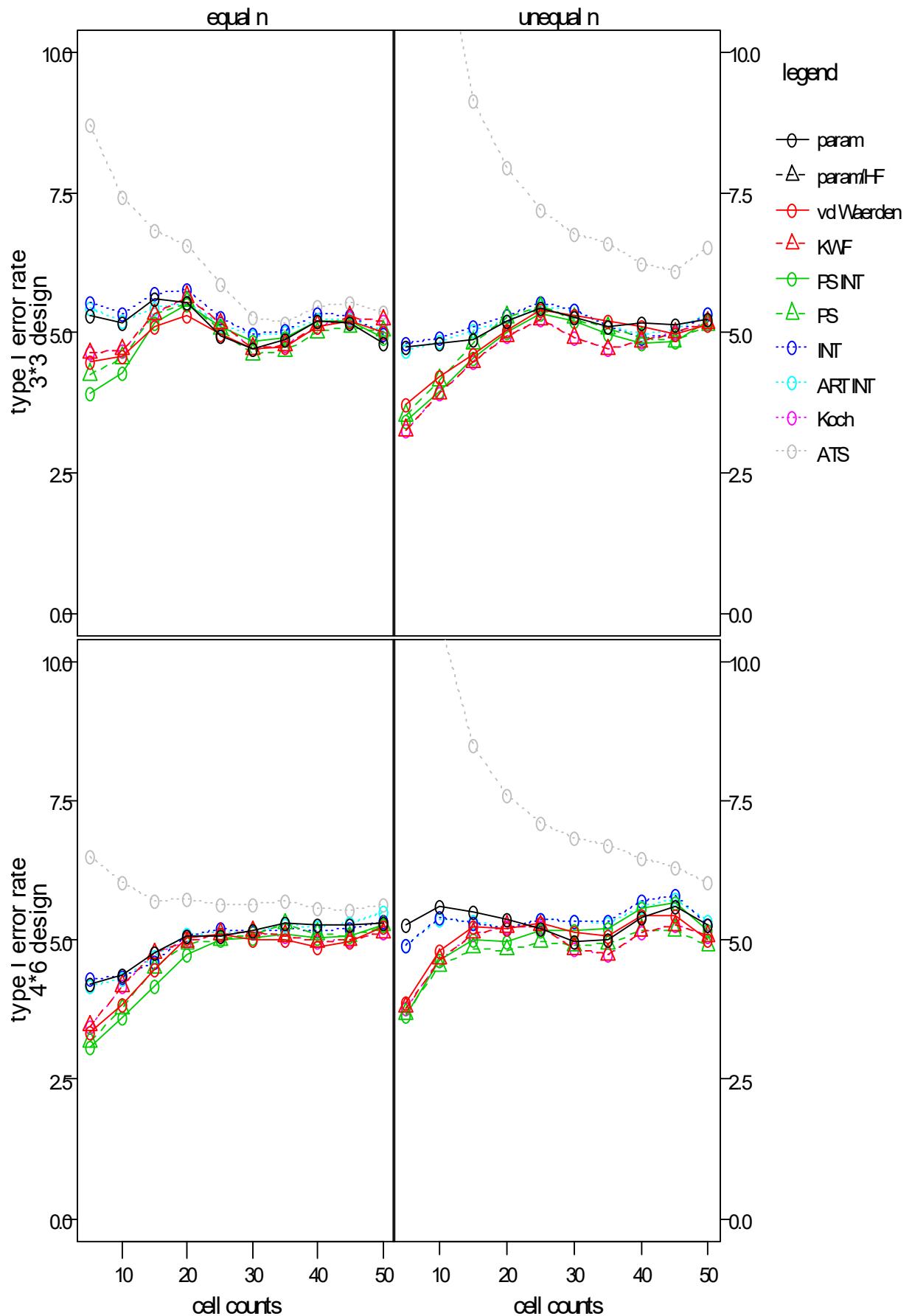
1. 3. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.24	5.04	4.89	4.92	5.44	5.01	4.85	4.45	4.62	4.90	4.91	4.84	4.90	4.83
parametric HF-adj														
van der Waerden	4.03	4.33	4.53	4.57	5.34	4.97	4.88	3.48	3.93	4.35	4.40	4.50	4.71	4.45
KWF	4.25	4.39	4.49	4.67	5.43	4.94	4.88	3.30	3.91	4.50	4.70	4.67	4.88	4.62
Puri & Sen INT	4.02	4.25	4.49	4.54	5.15	4.79	5.02	3.46	3.90	4.28	4.22	4.36	4.55	4.28
Puri & Sen	4.00	4.31	4.47	4.59	5.28	4.84	5.00	3.71	4.16	4.56	4.70	4.79	5.04	4.98
INT	5.39	5.04	4.82	4.81	5.39	4.92	5.10	4.60	4.59	4.67	4.60	4.56	4.66	4.37
ART INT	5.48	5.42	5.45	5.44	6.41	7.16	7.94	4.80	5.03	5.31	5.18	5.42	6.10	6.38
Koch	4.25	4.39	4.49	4.67	5.43	4.94	4.88	3.30	3.91	4.50	4.70	4.67	4.88	4.62
ATS	8.24	7.04	5.90	5.60	6.12	5.35	5.28	15.26	11.75	8.57	7.40	6.81	6.17	6.48
large design (4*6)														
parametric	4.83	5.04	5.04	4.85	5.26	5.24	4.90	5.00	4.90	5.00	5.15	5.19	5.28	5.97
parametric HF-adj														
van der Waerden	3.50	3.94	4.42	4.59	4.84	4.96	4.54	3.91	4.22	4.78	5.09	5.10	5.38	5.78
KWF	3.83	4.26	4.54	4.70	4.96	4.86	4.54	3.66	3.91	4.24	4.60	4.89	4.78	5.34
Puri & Sen INT	3.61	4.15	4.47	4.44	4.85	4.89	4.60	4.10	4.51	4.95	5.12	5.30	5.33	6.14
Puri & Sen	3.56	4.24	4.54	4.47	5.04	5.11	4.79	3.68	3.83	4.21	4.60	4.90	4.99	5.49
INT	4.83	5.08	5.12	4.83	5.09	5.00	4.70	5.52	5.50	5.62	5.65	5.50	5.52	6.30
ART INT	4.85	5.03	5.34	5.50	5.93	6.60	6.62	5.48	5.39	5.50	5.89	6.29	7.66	9.14
Koch	3.83	4.26	4.54	4.70	4.96	4.86	4.54	3.66	3.91	4.24	4.60	4.89	4.78	5.34
ATS	6.84	6.36	5.90	5.60	5.53	5.50	5.30	14.49	10.93	7.71	6.78	6.30	5.44	6.05



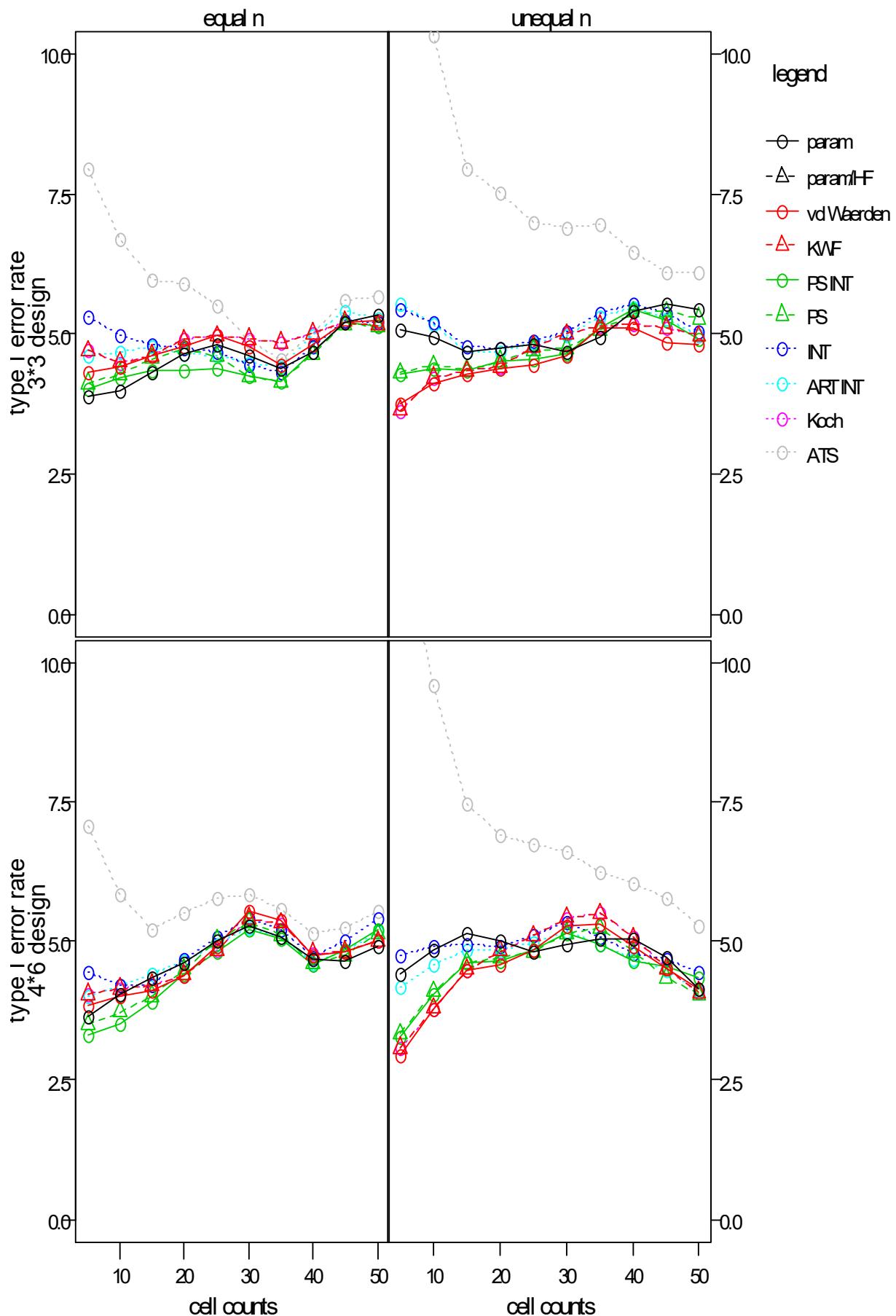
1. 3. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.32	5.17	5.59	5.55	4.72	5.20	4.81	4.75	4.80	4.89	5.21	5.26	5.16	5.24
parametric HF-adj														
van der Waerden	4.47	4.59	5.12	5.32	4.71	5.11	5.01	3.73	4.20	4.60	5.04	5.29	5.11	5.14
KWF	4.64	4.69	5.33	5.64	4.71	5.12	5.22	3.26	3.92	4.47	4.95	4.91	4.85	5.17
Puri & Sen INT	3.93	4.29	5.17	5.49	4.85	5.20	4.90	3.43	3.95	4.54	5.00	5.21	4.81	5.22
Puri & Sen	4.25	4.55	5.33	5.55	4.62	5.00	5.02	3.53	4.15	4.81	5.28	5.25	4.91	5.14
INT	5.52	5.34	5.71	5.78	4.97	5.34	4.98	4.82	4.90	5.09	5.32	5.39	4.92	5.34
ART INT	5.44	5.19	5.44	5.53	4.95	5.25	5.03	4.68	4.83	5.03	5.22	5.39	4.96	5.35
Koch	4.64	4.69	5.33	5.64	4.71	5.12	5.22	3.26	3.92	4.47	4.95	4.91	4.85	5.17
ATS	8.70	7.41	6.81	6.56	5.26	5.46	5.38	16.16	12.30	9.14	7.95	6.77	6.22	6.52
large design (4*6)														
parametric	4.20	4.38	4.76	5.08	5.16	5.26	5.30	5.28	5.60	5.52	5.36	4.96	5.40	5.28
parametric HF-adj														
van der Waerden	3.35	3.84	4.49	5.04	4.99	4.86	5.23	3.89	4.81	5.24	5.20	5.15	5.43	5.00
KWF	3.46	4.18	4.76	4.96	5.15	4.96	5.13	3.79	4.65	5.12	5.24	4.84	5.15	5.07
Puri & Sen INT	3.08	3.60	4.19	4.74	5.04	5.03	5.27	3.64	4.64	5.00	4.96	5.16	5.56	5.18
Puri & Sen	3.18	3.76	4.50	4.93	5.12	5.11	5.25	3.68	4.53	4.85	4.82	4.90	5.17	4.91
INT	4.30	4.35	4.62	5.06	5.14	5.16	5.35	4.89	5.39	5.32	5.21	5.33	5.71	5.28
ART INT	4.18	4.31	4.69	5.09	5.14	5.24	5.52	4.89	5.38	5.33	5.20	5.35	5.60	5.34
Koch	3.46	4.18	4.76	4.96	5.15	4.96	5.13	3.79	4.65	5.12	5.24	4.84	5.15	5.07
ATS	6.50	6.04	5.71	5.72	5.63	5.58	5.62	12.95	10.75	8.49	7.59	6.83	6.46	6.05



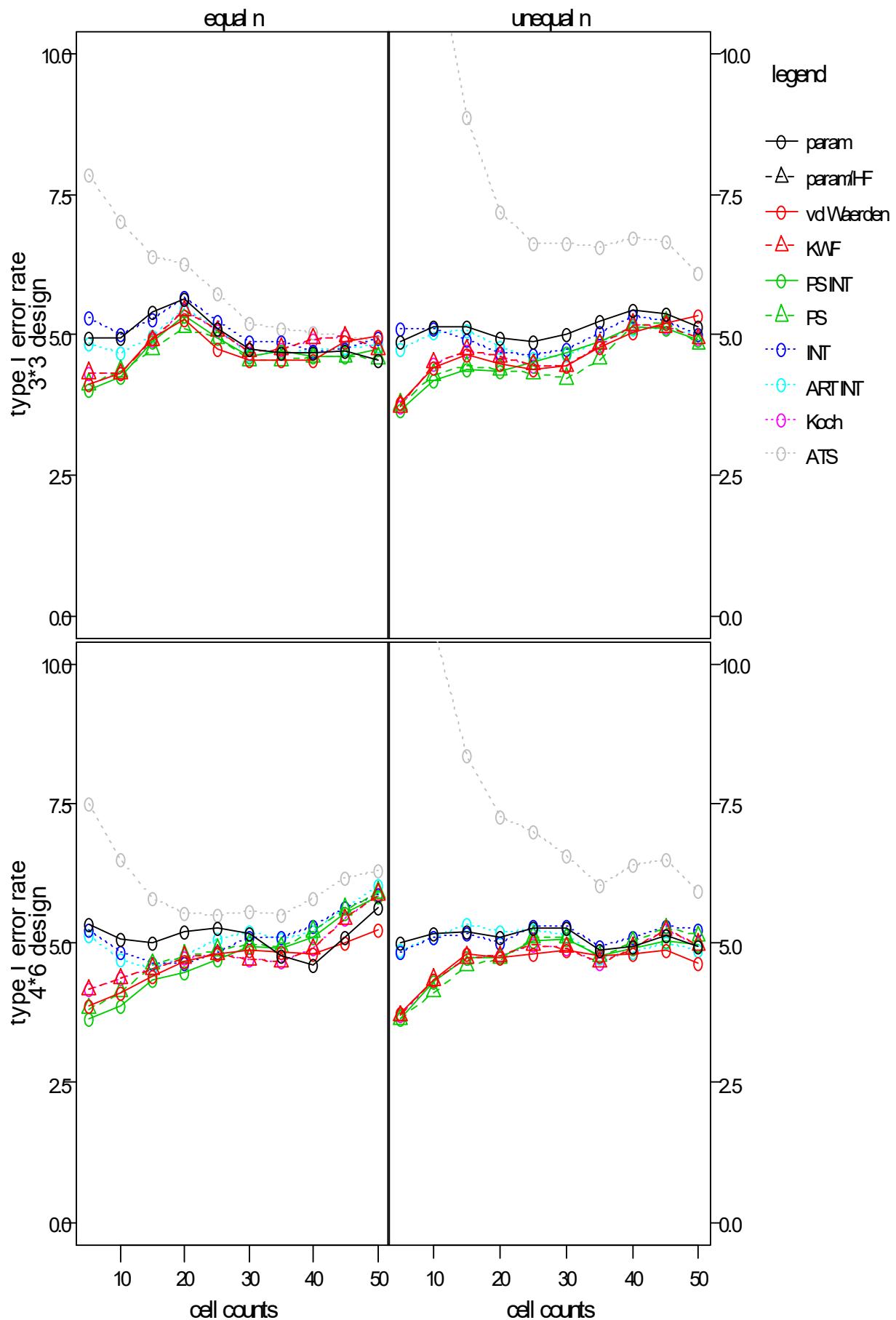
1. 3. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.87	3.99	4.32	4.65	4.62	4.69	5.33	5.08	4.95	4.69	4.75	4.67	5.40	5.45
parametric HF-adj														
van der Waerden	4.32	4.40	4.61	4.76	4.76	4.81	5.23	3.75	4.11	4.28	4.39	4.61	5.11	4.80
KWF	4.70	4.49	4.62	4.90	4.91	5.01	5.15	3.63	4.22	4.34	4.41	5.00	5.16	4.96
Puri & Sen INT	4.03	4.21	4.36	4.34	4.25	4.69	5.15	4.28	4.39	4.36	4.51	4.64	5.43	4.90
Puri & Sen	4.12	4.28	4.56	4.73	4.24	4.64	5.13	4.30	4.44	4.35	4.51	4.75	5.38	5.27
INT	5.30	4.99	4.82	4.75	4.46	4.76	5.20	5.45	5.21	4.78	4.75	5.04	5.54	5.05
ART INT	4.62	4.66	4.76	4.65	4.47	4.99	5.28	5.52	5.17	4.67	4.66	4.99	5.46	4.96
Koch	4.70	4.49	4.62	4.90	4.91	5.01	5.15	3.63	4.22	4.34	4.41	5.00	5.16	4.96
ATS	7.93	6.70	5.97	5.89	4.88	5.01	5.66	13.64	10.34	7.96	7.53	6.88	6.46	6.08
large design (4*6)														
parametric	3.65	4.04	4.35	4.60	5.27	4.68	4.92	4.41	4.84	5.15	4.99	4.94	5.03	4.13
parametric HF-adj														
van der Waerden	3.85	4.01	4.12	4.39	5.53	4.74	5.00	2.93	3.76	4.46	4.59	5.26	4.92	4.13
KWF	4.05	4.14	4.21	4.39	5.41	4.78	5.00	3.08	3.79	4.49	4.82	5.42	5.06	4.08
Puri & Sen INT	3.30	3.51	3.90	4.42	5.19	4.59	5.22	3.29	4.05	4.60	4.64	5.14	4.64	4.35
Puri & Sen	3.50	3.72	4.01	4.49	5.34	4.60	5.13	3.33	4.09	4.61	4.69	5.14	4.79	4.03
INT	4.43	4.20	4.22	4.67	5.41	4.71	5.42	4.75	4.90	4.94	4.89	5.33	4.78	4.43
ART INT	4.00	4.21	4.40	4.64	5.25	4.62	5.18	4.18	4.56	4.85	4.84	5.16	4.66	4.11
Koch	4.05	4.14	4.21	4.39	5.41	4.78	5.00	3.08	3.79	4.49	4.82	5.42	5.06	4.08
ATS	7.06	5.85	5.22	5.51	5.84	5.15	5.53	12.34	9.59	7.45	6.90	6.59	6.02	5.26



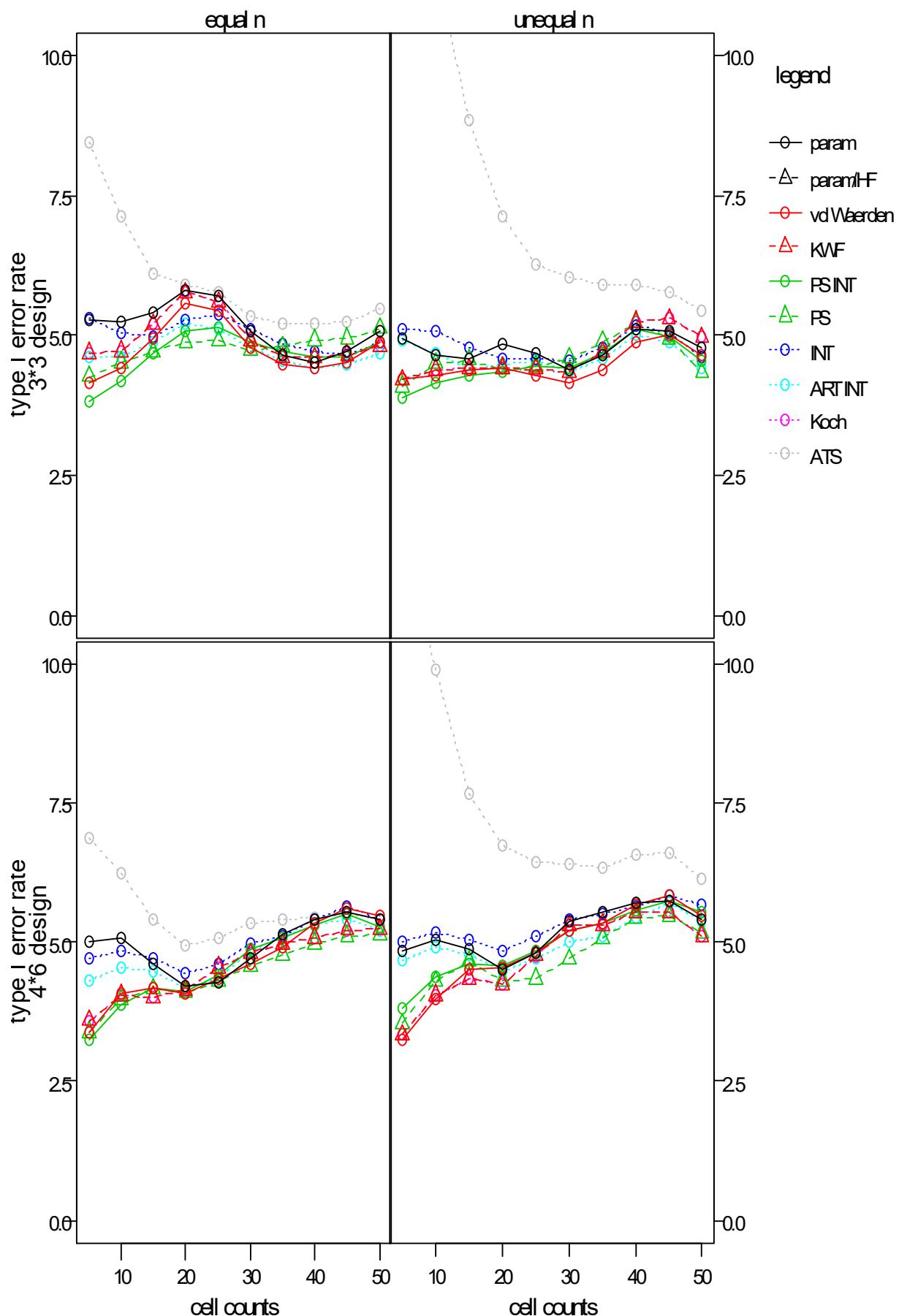
1. 3. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.95	4.95	5.39	5.64	4.73	4.68	4.53	4.86	5.15	5.15	4.95	5.00	5.44	5.13
parametric HF-adj														
van der Waerden	4.10	4.30	4.95	5.26	4.53	4.56	4.98	3.78	4.41	4.65	4.49	4.45	5.03	5.33
KWF	4.32	4.30	4.90	5.42	4.69	4.92	4.75	3.72	4.49	4.72	4.62	4.44	5.17	4.93
Puri & Sen INT	4.00	4.24	4.86	5.33	4.60	4.61	4.73	3.66	4.19	4.39	4.35	4.66	5.15	4.90
Puri & Sen	4.12	4.35	4.75	5.12	4.55	4.60	4.58	3.75	4.28	4.44	4.38	4.22	5.16	4.83
INT	5.30	5.01	5.28	5.66	4.89	4.71	4.93	5.10	5.11	4.90	4.66	4.75	5.33	5.00
ART INT	4.85	4.69	4.99	5.46	4.65	4.71	4.82	4.75	5.05	5.06	4.77	4.64	5.09	5.02
Koch	4.32	4.30	4.90	5.42	4.69	4.92	4.75	3.72	4.49	4.72	4.62	4.44	5.17	4.93
ATS	7.84	7.03	6.40	6.27	5.19	5.04	4.86	15.19	12.05	8.88	7.20	6.61	6.73	6.09
large design (4*6)														
parametric	5.34	5.08	5.01	5.19	5.16	4.62	5.64	5.02	5.17	5.21	5.09	5.26	4.94	4.95
parametric HF-adj														
van der Waerden	3.86	4.12	4.40	4.67	4.88	4.79	5.25	3.73	4.35	4.80	4.75	4.86	4.82	4.65
KWF	4.16	4.36	4.55	4.74	4.71	4.90	5.87	3.70	4.34	4.74	4.76	4.92	4.91	4.98
Puri & Sen INT	3.63	3.89	4.33	4.49	4.93	5.12	5.84	3.65	4.30	4.74	4.75	5.06	4.89	4.97
Puri & Sen	3.82	4.12	4.62	4.77	4.97	5.21	5.90	3.63	4.12	4.60	4.72	5.10	5.03	5.13
INT	5.25	4.85	4.65	4.64	5.11	5.30	5.87	4.85	5.10	5.16	5.01	5.30	5.09	5.23
ART INT	5.14	4.72	4.55	4.76	5.20	5.20	6.02	4.87	5.11	5.35	5.20	5.14	4.84	4.88
Koch	4.16	4.36	4.55	4.74	4.71	4.90	5.87	3.70	4.34	4.74	4.76	4.92	4.91	4.98
ATS	7.49	6.49	5.79	5.54	5.58	5.79	6.30	12.93	10.65	8.35	7.28	6.58	6.39	5.95



1. 3. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.28	5.25	5.41	5.80	5.06	4.51	5.07	4.94	4.64	4.58	4.83	4.38	5.10	4.76
parametric HF-adj														
van der Waerden	4.15	4.40	4.94	5.56	4.78	4.41	4.87	4.20	4.28	4.38	4.41	4.16	4.89	4.63
KWF	4.68	4.71	5.19	5.76	4.90	4.60	4.80	4.21	4.38	4.40	4.41	4.34	5.24	4.96
Puri & Sen INT	3.83	4.17	4.69	5.06	4.89	4.60	4.87	3.88	4.15	4.28	4.36	4.41	5.10	4.55
Puri & Sen	4.26	4.51	4.70	4.88	4.72	4.91	5.12	4.08	4.49	4.56	4.39	4.59	5.22	4.33
INT	5.32	5.03	4.99	5.26	5.10	4.70	4.89	5.12	5.06	4.76	4.58	4.54	5.18	4.61
ART INT	4.62	4.61	4.89	5.19	4.78	4.42	4.67	4.90	4.68	4.39	4.47	4.36	5.01	4.41
Koch	4.68	4.71	5.19	5.76	4.90	4.60	4.80	4.21	4.38	4.40	4.41	4.34	5.24	4.96
ATS	8.43	7.12	6.09	5.91	5.35	5.21	5.47	14.55	11.67	8.84	7.11	6.04	5.91	5.43
large design (4*6)														
parametric	5.00	5.06	4.61	4.22	4.71	5.41	5.40	4.85	5.03	4.88	4.51	5.38	5.71	5.40
parametric HF-adj														
van der Waerden	3.39	4.08	4.18	4.09	4.61	5.35	5.48	3.23	3.98	4.50	4.54	5.20	5.66	5.48
KWF	3.59	4.04	4.01	4.14	4.80	5.08	5.23	3.34	4.05	4.35	4.25	5.29	5.53	5.11
Puri & Sen INT	3.23	3.88	4.19	4.12	4.86	5.31	5.26	3.81	4.38	4.62	4.58	5.19	5.56	5.53
Puri & Sen	3.38	3.96	4.17	4.09	4.58	4.97	5.13	3.53	4.30	4.65	4.31	4.70	5.44	5.18
INT	4.71	4.85	4.71	4.45	4.96	5.39	5.41	5.00	5.17	5.05	4.83	5.42	5.65	5.68
ART INT	4.30	4.55	4.47	4.18	4.83	5.31	5.20	4.68	4.89	4.76	4.49	5.00	5.45	5.36
Koch	3.59	4.04	4.01	4.14	4.80	5.08	5.23	3.34	4.05	4.35	4.25	5.29	5.53	5.11
ATS	6.87	6.25	5.42	4.95	5.34	5.44	5.42	12.33	9.90	7.66	6.72	6.39	6.56	6.13

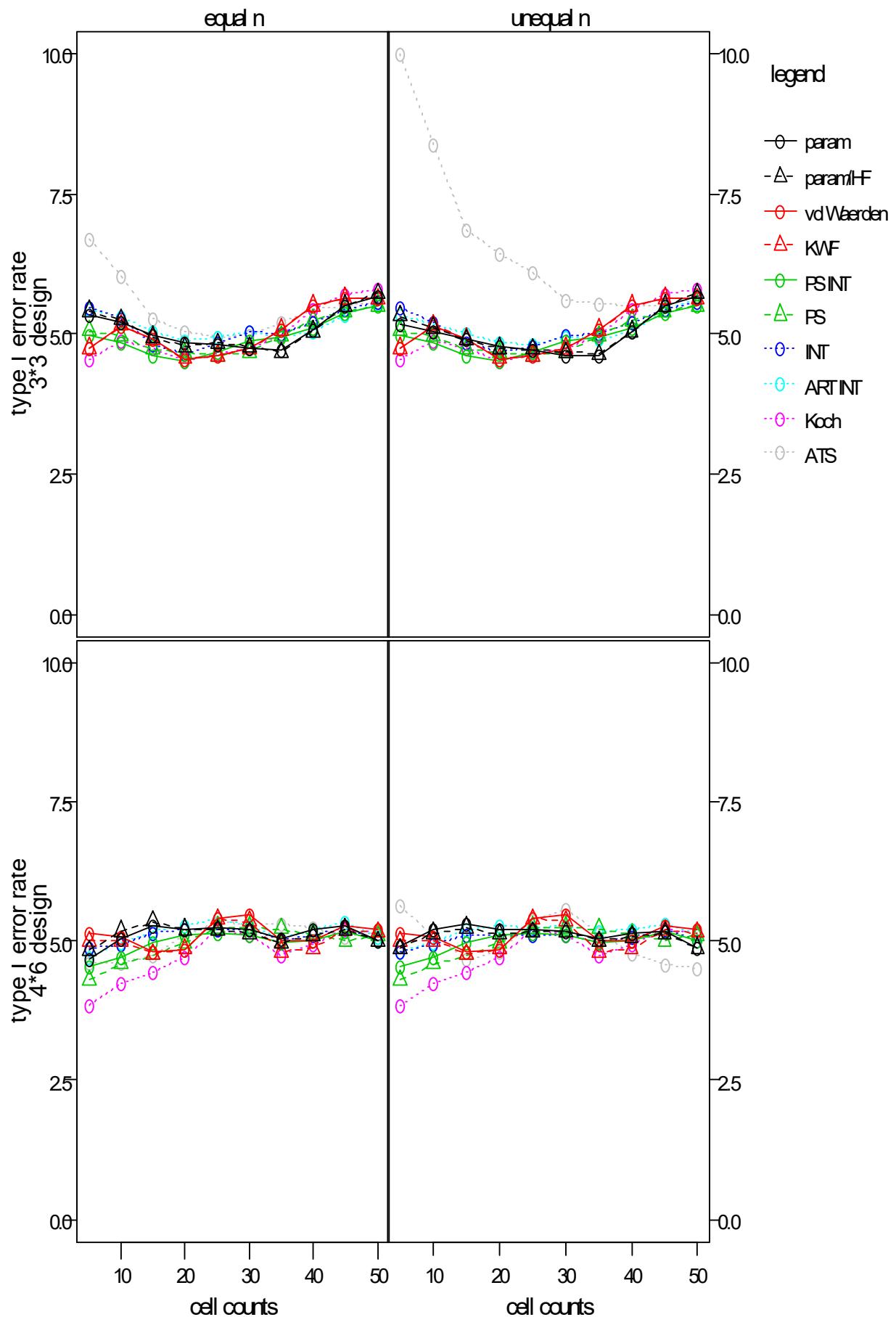


1. 4. Main effect B - null model

1. 4. 1. equal correlations on B ($r=0.3$)

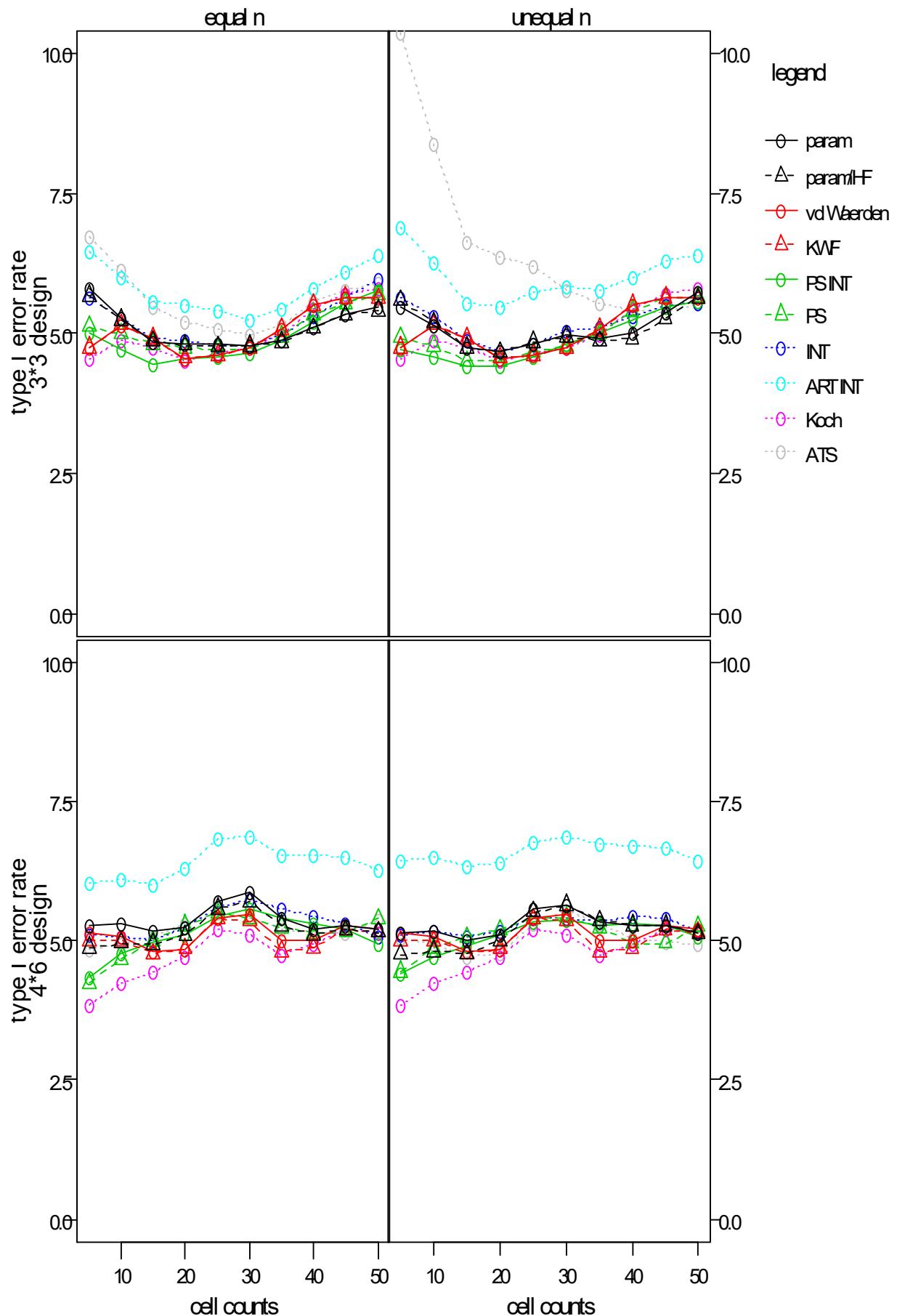
1. 4. 1. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.35	5.20	4.99	4.85	4.73	5.06	5.68	5.18	5.04	4.91	4.78	4.62	5.03	5.68
parametric HF-adj	5.40	5.25	4.94	4.76	4.76	5.04	5.72	5.32	5.11	4.89	4.74	4.66	5.04	5.72
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.97	4.85	4.60	4.51	4.89	5.12	5.50	4.97	4.85	4.60	4.51	4.89	5.12	5.50
Puri & Sen	5.05	4.97	4.72	4.66	4.66	5.24	5.50	5.05	4.97	4.72	4.66	4.66	5.24	5.50
INT	5.47	5.26	4.81	4.64	5.03	5.19	5.58	5.47	5.21	4.84	4.66	4.96	5.19	5.57
ART INT	5.43	5.29	5.04	4.86	5.05	5.04	5.53	5.35	5.16	5.01	4.84	4.95	5.04	5.65
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.69	6.02	5.28	5.04	4.99	5.42	5.57	9.98	8.36	6.84	6.44	5.61	5.50	5.69
large design (4*6)														
parametric	4.68	5.04	5.28	5.21	5.20	5.19	5.00	4.91	5.19	5.30	5.20	5.18	5.15	4.88
parametric HF-adj	4.83	5.17	5.35	5.21	5.14	5.10	5.00	4.86	5.14	5.24	5.12	5.16	5.08	4.88
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	4.55	4.71	4.96	5.12	5.12	5.01	5.01	4.55	4.71	4.96	5.12	5.12	5.01	5.01
Puri & Sen	4.30	4.59	4.75	4.96	5.24	5.12	5.10	4.30	4.59	4.75	4.96	5.24	5.12	5.10
INT	4.88	4.95	5.14	5.20	5.19	5.10	5.01	4.80	4.95	5.11	5.12	5.10	5.06	5.01
ART INT	4.70	4.97	5.17	5.26	5.26	5.21	5.08	4.80	4.97	5.21	5.28	5.28	5.20	5.10
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.60	4.61	4.74	5.10	5.29	5.23	5.13	5.64	5.06	4.66	4.79	5.56	4.76	4.52



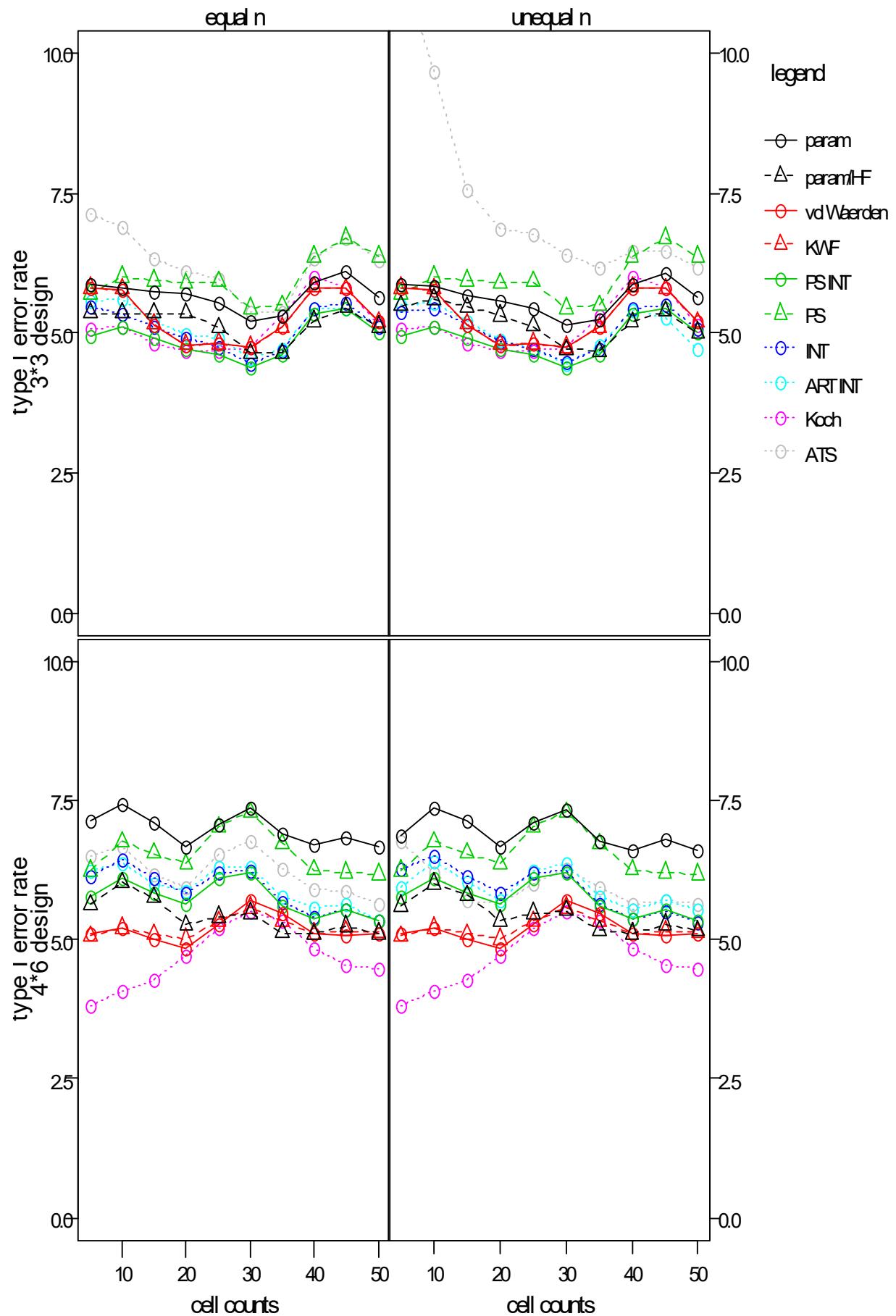
1. 4. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.79	5.26	4.84	4.82	4.79	5.11	5.47	5.47	5.14	4.75	4.68	4.96	5.00	5.72
parametric HF-adj	5.67	5.24	4.86	4.79	4.78	5.10	5.40	5.58	5.20	4.75	4.67	4.95	4.91	5.62
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	5.00	4.70	4.46	4.54	4.64	5.21	5.75	4.72	4.59	4.40	4.40	4.81	5.24	5.58
Puri & Sen	5.12	4.99	4.81	4.74	4.72	5.34	5.69	4.92	4.78	4.50	4.50	4.76	5.41	5.65
INT	5.65	5.26	4.91	4.86	4.78	5.30	5.97	5.63	5.32	4.86	4.66	5.04	5.31	5.55
ART INT	6.47	6.00	5.56	5.50	5.25	5.81	6.40	6.88	6.27	5.55	5.46	5.83	6.01	6.38
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.74	6.14	5.47	5.20	4.97	5.56	5.90	10.36	8.36	6.62	6.36	5.75	5.41	5.54
large design (4*6)														
parametric	5.27	5.30	5.17	5.25	5.86	5.20	5.20	5.15	5.16	4.99	5.10	5.63	5.28	5.13
parametric HF-adj	4.88	4.95	4.94	5.10	5.69	5.10	5.15	4.75	4.81	4.76	4.99	5.64	5.28	5.13
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	4.33	4.76	4.97	5.11	5.56	5.31	4.95	4.40	4.69	4.90	5.10	5.38	5.30	5.07
Puri & Sen	4.23	4.66	5.00	5.28	5.39	5.14	5.39	4.45	4.86	5.06	5.19	5.42	4.95	5.25
INT	5.10	5.06	5.01	5.24	5.73	5.45	5.08	5.10	5.17	5.08	5.16	5.41	5.44	5.18
ART INT	6.05	6.10	6.01	6.29	6.85	6.53	6.28	6.45	6.51	6.32	6.39	6.85	6.70	6.45
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.83	4.94	5.06	5.30	5.39	5.14	5.37	5.03	4.94	4.71	4.78	5.54	5.05	4.95



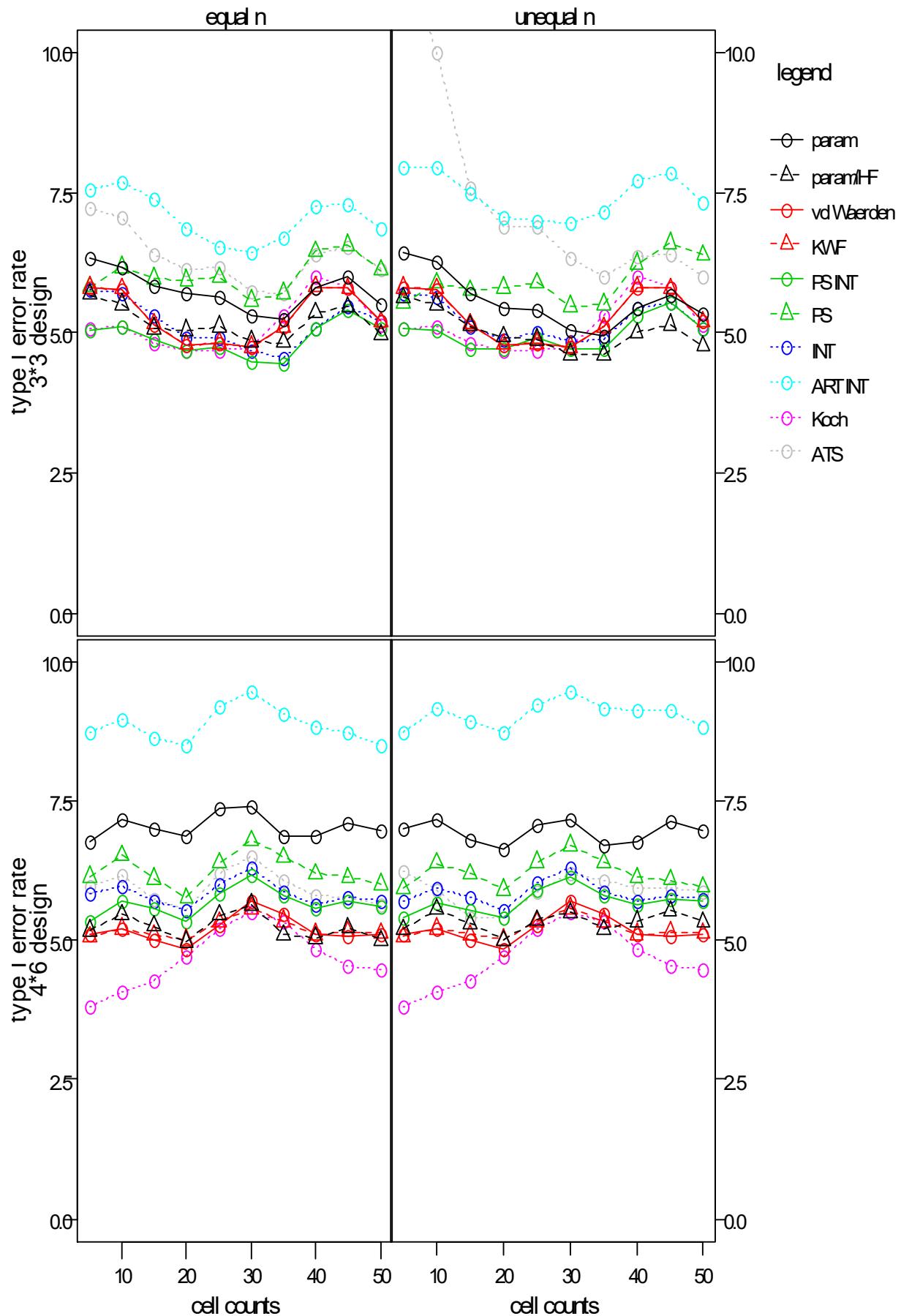
1. 4. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.88	5.80	5.72	5.70	5.22	5.90	5.64	5.85	5.82	5.66	5.56	5.15	5.86	5.63
parametric HF-adj	5.35	5.35	5.35	5.35	4.64	5.21	5.11	5.48	5.60	5.46	5.31	4.70	5.20	5.01
van der Waerden	5.80	5.78	5.15	4.79	4.74	5.81	5.20	5.80	5.78	5.15	4.79	4.74	5.81	5.20
KWF	5.80	5.78	5.15	4.79	4.74	5.81	5.20	5.80	5.78	5.15	4.79	4.74	5.81	5.20
Puri & Sen INT	4.95	5.09	4.91	4.71	4.38	5.34	5.00	4.95	5.09	4.91	4.71	4.38	5.34	5.00
Puri & Sen	5.70	6.00	5.93	5.89	5.44	6.36	6.36	5.70	6.00	5.93	5.89	5.44	6.36	6.36
INT	5.48	5.33	5.09	4.90	4.45	5.42	5.10	5.37	5.43	5.14	4.85	4.47	5.42	5.06
ART INT	5.58	5.60	5.21	4.96	4.54	5.43	5.10	5.50	5.54	5.19	4.88	4.46	5.41	4.71
Koch	5.06	5.09	4.80	4.67	4.74	5.99	5.13	5.06	5.09	4.80	4.67	4.74	5.99	5.13
ATS	7.13	6.89	6.33	6.09	5.38	6.32	6.28	11.59	9.66	7.54	6.85	6.40	6.45	6.16
large design (4*6)														
parametric	7.13	7.44	7.09	6.66	7.36	6.69	6.66	6.88	7.36	7.12	6.66	7.33	6.60	6.61
parametric HF-adj	5.63	6.03	5.75	5.26	5.47	5.09	5.11	5.61	6.01	5.79	5.34	5.52	5.11	5.16
van der Waerden	5.10	5.20	5.01	4.85	5.70	5.10	5.12	5.10	5.20	5.01	4.85	5.70	5.10	5.12
KWF	5.06	5.21	5.10	5.01	5.58	5.11	5.13	5.06	5.21	5.10	5.01	5.58	5.11	5.13
Puri & Sen INT	5.78	6.10	5.82	5.65	6.19	5.36	5.33	5.78	6.10	5.82	5.65	6.19	5.36	5.33
Puri & Sen	6.24	6.76	6.55	6.36	7.29	6.25	6.17	6.24	6.76	6.55	6.36	7.29	6.25	6.17
INT	6.14	6.44	6.10	5.85	6.24	5.41	5.33	6.26	6.51	6.12	5.85	6.24	5.38	5.30
ART INT	6.25	6.38	5.99	5.86	6.31	5.56	5.35	5.93	6.39	6.02	5.70	6.36	5.55	5.53
Koch	3.80	4.08	4.29	4.69	5.50	4.83	4.47	3.80	4.08	4.29	4.69	5.50	4.83	4.47
ATS	6.50	6.66	6.17	5.95	6.78	5.90	5.65	6.77	6.19	5.69	5.64	6.28	5.65	5.62



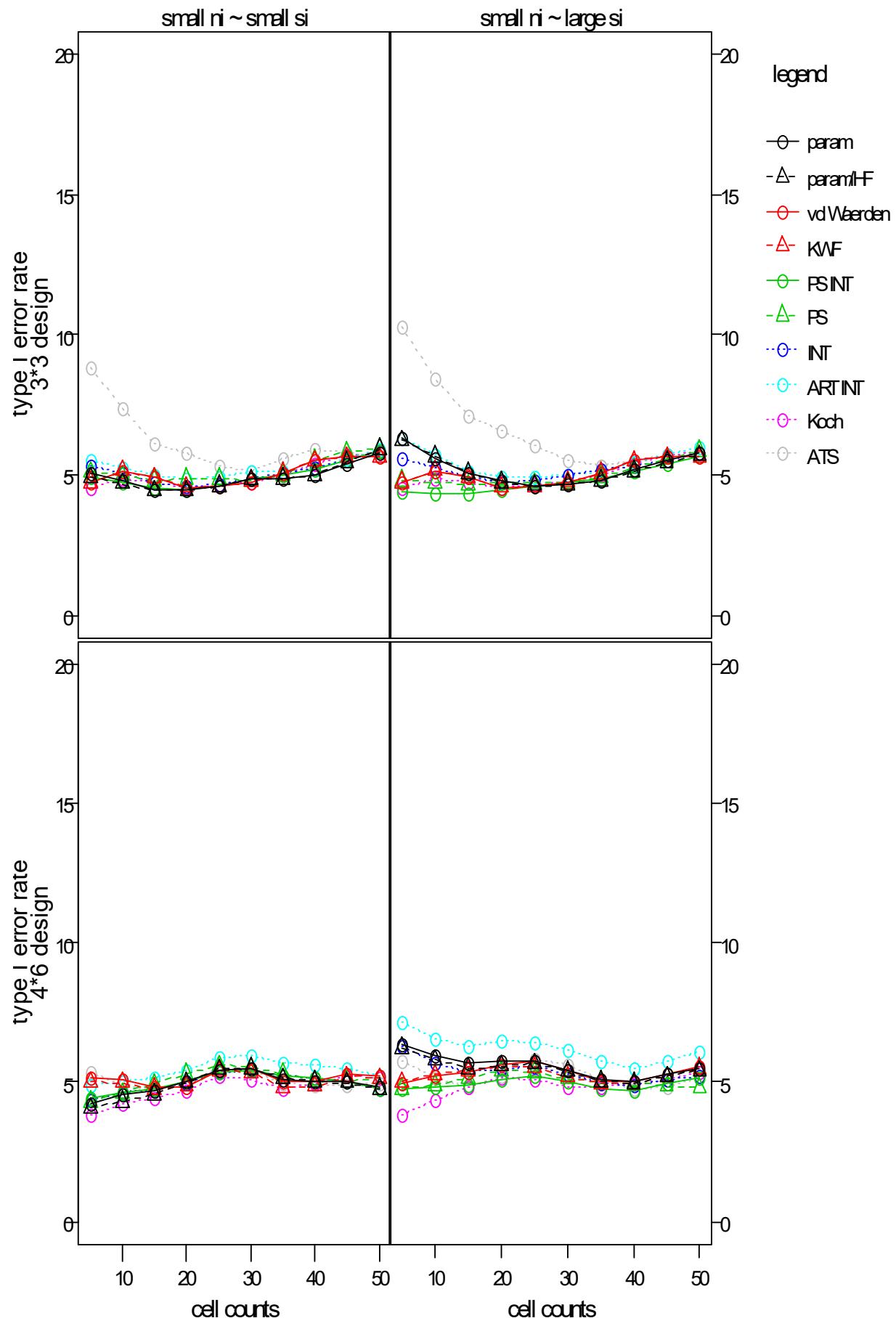
1. 4. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.33	6.16	5.84	5.71	5.29	5.81	5.51	6.42	6.26	5.70	5.44	5.04	5.44	5.33
parametric HF-adj	5.68	5.50	5.08	5.04	4.84	5.35	4.96	5.62	5.51	5.12	4.92	4.62	5.00	4.76
van der Waerden	5.80	5.78	5.15	4.79	4.74	5.81	5.20	5.80	5.78	5.15	4.79	4.74	5.81	5.20
KWF	5.80	5.78	5.15	4.79	4.74	5.81	5.20	5.80	5.78	5.15	4.79	4.74	5.81	5.20
Puri & Sen INT	5.03	5.12	4.88	4.69	4.49	5.08	5.08	5.07	5.03	4.72	4.72	4.71	5.32	5.06
Puri & Sen	5.81	6.16	5.97	5.94	5.57	6.45	6.11	5.54	5.88	5.75	5.80	5.47	6.23	6.38
INT	5.77	5.71	5.30	4.92	4.69	5.08	5.20	5.71	5.64	5.12	4.89	4.84	5.43	5.06
ART INT	7.55	7.67	7.40	6.86	6.43	7.26	6.85	7.93	7.94	7.47	7.06	6.95	7.72	7.33
Koch	5.06	5.09	4.80	4.67	4.74	5.99	5.13	5.06	5.09	4.80	4.67	4.74	5.99	5.13
ATS	7.23	7.07	6.39	6.14	5.72	6.39	6.13	11.98	9.99	7.59	6.88	6.32	6.35	6.01
large design (4*6)														
parametric	6.76	7.16	7.00	6.88	7.41	6.85	6.95	7.00	7.15	6.81	6.64	7.16	6.78	6.98
parametric HF-adj	5.18	5.46	5.25	4.97	5.64	5.04	5.00	5.20	5.55	5.30	4.99	5.49	5.34	5.33
van der Waerden	5.10	5.20	5.01	4.85	5.70	5.10	5.12	5.10	5.20	5.01	4.85	5.70	5.10	5.12
KWF	5.06	5.21	5.10	5.01	5.58	5.11	5.13	5.06	5.21	5.10	5.01	5.58	5.11	5.13
Puri & Sen INT	5.33	5.71	5.56	5.34	6.17	5.56	5.61	5.41	5.67	5.53	5.40	6.14	5.64	5.70
Puri & Sen	6.14	6.53	6.11	5.76	6.79	6.19	6.01	5.93	6.38	6.19	5.91	6.70	6.13	5.96
INT	5.85	5.96	5.70	5.53	6.29	5.62	5.71	5.71	5.95	5.76	5.55	6.29	5.70	5.73
ART INT	8.73	8.97	8.61	8.50	9.46	8.82	8.48	8.73	9.15	8.91	8.71	9.45	9.11	8.83
Koch	3.80	4.08	4.29	4.69	5.50	4.83	4.47	3.80	4.08	4.29	4.69	5.50	4.83	4.47
ATS	5.96	6.16	5.75	5.54	6.50	5.80	5.63	6.25	5.90	5.41	5.40	6.19	5.95	5.87



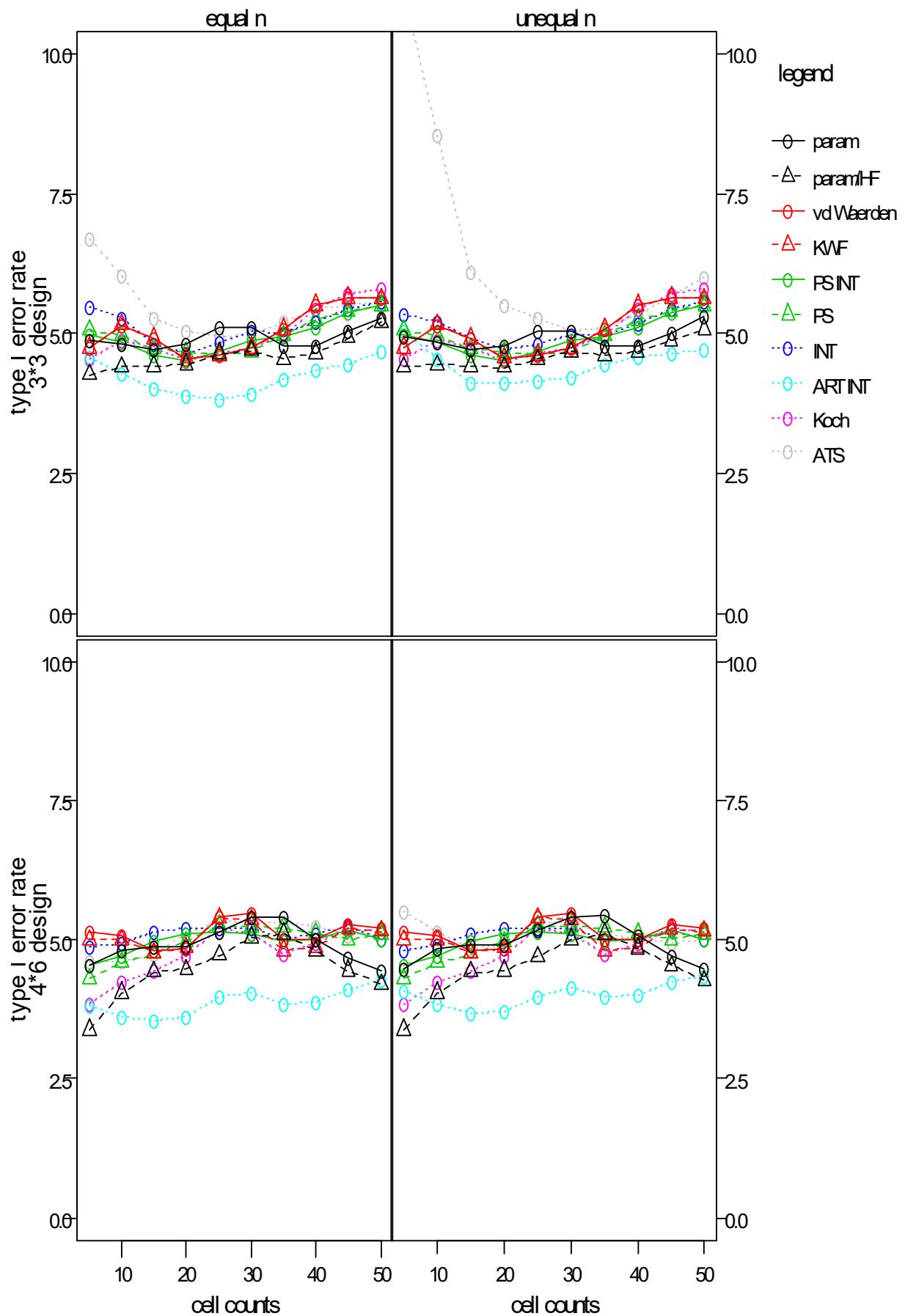
1. 4. 1. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.07	4.78	4.49	4.44	4.83	4.96	5.79	6.30	5.60	5.06	4.78	4.66	5.16	5.77
parametric HF-adj	4.90	4.69	4.44	4.44	4.83	5.01	5.92	6.22	5.65	5.07	4.74	4.66	5.14	5.70
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.92	4.74	4.55	4.47	4.86	5.16	5.84	4.42	4.33	4.30	4.46	4.74	5.10	5.67
Puri & Sen	5.10	4.96	4.81	4.88	4.78	5.54	5.92	4.80	4.70	4.65	4.75	4.74	5.25	5.87
INT	5.35	5.09	4.72	4.60	4.89	5.24	5.84	5.62	5.29	4.90	4.74	4.97	5.31	5.80
ART INT	5.55	5.29	4.99	4.89	5.12	5.22	5.90	6.34	5.71	5.14	4.91	4.99	5.44	6.00
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	8.84	7.39	6.14	5.76	5.15	5.89	5.68	10.26	8.44	7.09	6.57	5.54	5.51	5.78
large design (4*6)														
parametric	4.25	4.53	4.71	5.00	5.47	5.05	4.83	6.37	5.96	5.69	5.74	5.45	5.05	5.47
parametric HF-adj	4.08	4.31	4.58	4.99	5.50	5.03	4.76	6.22	5.81	5.50	5.58	5.39	4.97	5.40
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	4.96	5.24	5.39	5.65	5.43	5.03	5.53
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.01	5.26	5.41	5.58	5.19	4.94	5.50
Puri & Sen INT	4.40	4.64	4.79	5.04	5.42	5.15	4.78	4.73	4.81	4.89	5.07	5.04	4.71	5.17
Puri & Sen	4.31	4.61	4.94	5.31	5.53	5.07	5.13	4.78	4.89	5.15	5.40	5.12	5.00	4.80
INT	4.35	4.62	4.75	4.99	5.44	5.17	4.78	6.27	5.70	5.35	5.51	5.28	4.89	5.25
ART INT	4.87	5.05	5.16	5.42	5.95	5.62	5.23	7.14	6.57	6.31	6.51	6.14	5.50	6.08
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.81	4.34	4.81	5.19	4.80	4.94	5.34
ATS	5.34	4.90	4.70	5.03	5.40	4.88	4.93	5.74	5.19	4.80	5.25	5.62	4.77	5.17



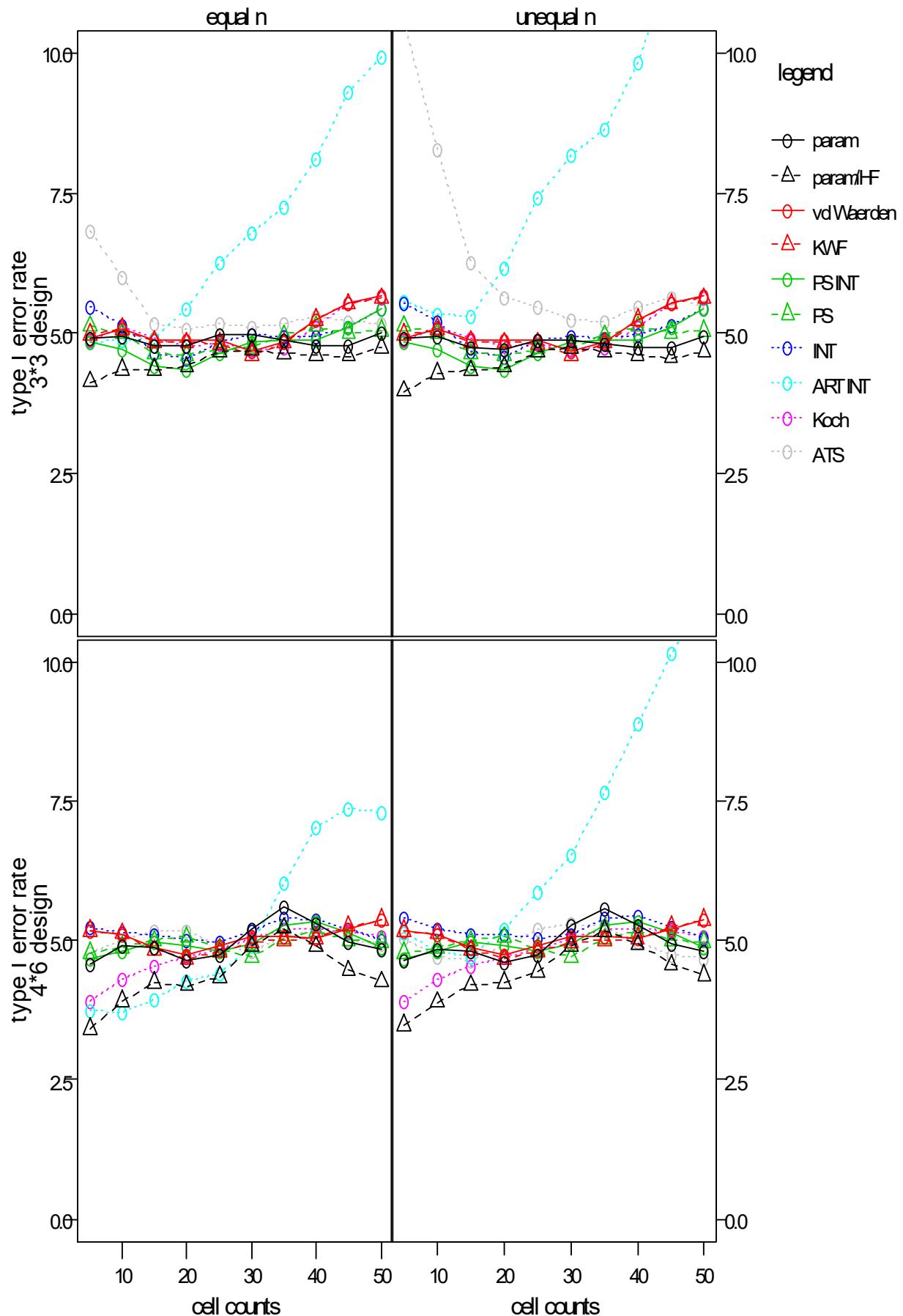
1. 4. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.87	4.81	4.71	4.80	5.09	4.79	5.27	4.93	4.83	4.70	4.77	5.04	4.76	5.29
parametric HF-adj	4.26	4.40	4.42	4.45	4.69	4.65	5.19	4.40	4.44	4.41	4.39	4.67	4.68	5.07
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.97	4.85	4.60	4.51	4.89	5.12	5.50	4.97	4.85	4.60	4.51	4.89	5.12	5.50
Puri & Sen	5.05	4.97	4.72	4.66	4.66	5.24	5.50	5.05	4.97	4.72	4.66	4.66	5.24	5.50
INT	5.47	5.26	4.81	4.64	5.03	5.19	5.58	5.33	5.22	4.91	4.71	4.96	5.18	5.58
ART INT	4.59	4.28	4.03	3.90	3.92	4.34	4.69	5.05	4.54	4.12	4.11	4.22	4.58	4.72
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.69	6.02	5.28	5.04	4.99	5.42	5.57	11.18	8.55	6.11	5.49	5.03	5.34	6.00
large design (4*6)														
parametric	4.53	4.80	4.88	4.88	5.39	5.02	4.45	4.48	4.85	4.91	4.89	5.41	5.06	4.48
parametric HF-adj	3.38	4.04	4.42	4.47	5.04	4.79	4.20	3.38	4.05	4.42	4.44	5.01	4.84	4.26
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	4.55	4.71	4.96	5.12	5.12	5.01	5.01	4.55	4.71	4.96	5.12	5.12	5.01	5.01
Puri & Sen	4.30	4.59	4.75	4.96	5.24	5.12	5.10	4.30	4.59	4.75	4.96	5.24	5.12	5.10
INT	4.88	4.95	5.14	5.20	5.19	5.10	5.01	4.82	4.91	5.12	5.21	5.19	5.01	5.00
ART INT	3.80	3.62	3.53	3.62	4.05	3.86	4.28	4.07	3.84	3.68	3.71	4.14	4.01	4.35
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.60	4.61	4.74	5.10	5.29	5.23	5.13	5.49	5.15	4.84	4.92	5.31	5.00	5.00



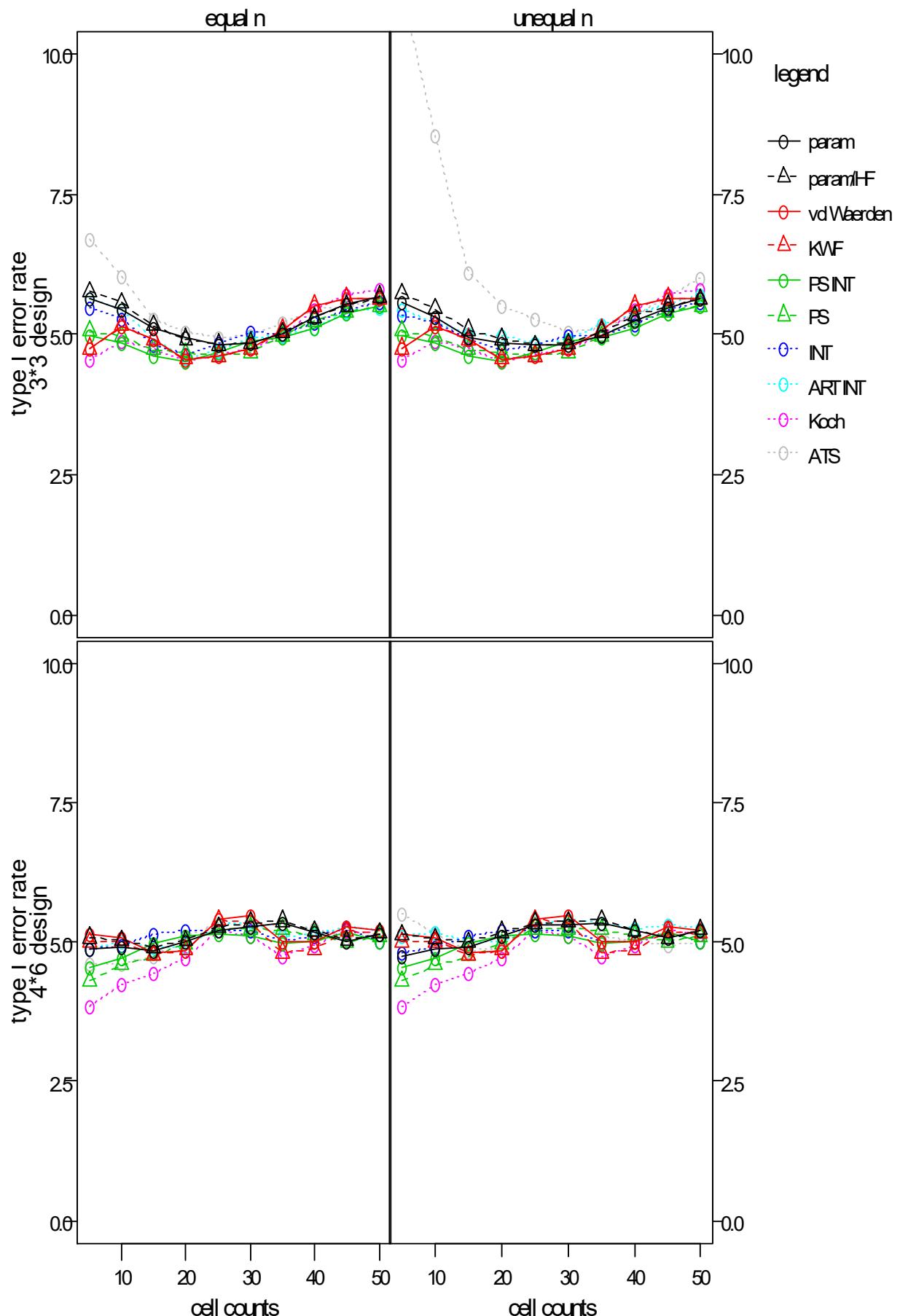
1. 4. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.92	4.94	4.79	4.78	4.97	4.76	5.00	4.92	4.93	4.75	4.70	4.89	4.74	4.94
parametric HF-adj	4.13	4.35	4.35	4.40	4.69	4.61	4.74	3.96	4.28	4.34	4.39	4.74	4.61	4.67
van der Waerden	4.91	5.06	4.86	4.86	4.66	5.25	5.67	4.91	5.06	4.86	4.86	4.66	5.25	5.67
KWF	4.98	5.08	4.84	4.83	4.62	5.24	5.63	4.98	5.08	4.84	4.83	4.62	5.24	5.63
Puri & Sen INT	4.83	4.72	4.40	4.35	4.83	4.89	5.44	4.83	4.72	4.40	4.35	4.83	4.89	5.44
Puri & Sen	5.13	4.99	4.64	4.61	4.75	5.12	5.04	5.13	4.99	4.64	4.61	4.75	5.12	5.04
INT	5.47	5.15	4.65	4.55	4.97	4.95	5.45	5.53	5.22	4.66	4.58	4.93	4.97	5.42
ART INT	4.85	4.86	4.92	5.44	6.80	8.11	9.92	5.57	5.34	5.29	6.16	8.17	9.82	12.60
Koch	4.86	5.09	4.90	4.79	4.70	5.12	5.65	4.86	5.09	4.90	4.79	4.70	5.12	5.65
ATS	6.82	6.01	5.16	5.06	5.12	5.29	5.17	10.55	8.29	6.25	5.65	5.25	5.47	5.48
large design (4*6)														
parametric	4.58	4.90	4.88	4.65	5.22	5.31	4.83	4.65	4.85	4.80	4.61	5.28	5.28	4.80
parametric HF-adj	3.41	3.91	4.24	4.19	4.90	4.90	4.27	3.48	3.89	4.20	4.25	4.89	4.93	4.38
van der Waerden	5.17	5.11	4.86	4.74	5.06	5.04	5.37	5.17	5.11	4.86	4.74	5.06	5.04	5.37
KWF	5.17	5.12	4.83	4.66	4.96	5.04	5.37	5.17	5.12	4.83	4.66	4.96	5.04	5.37
Puri & Sen INT	4.68	4.82	4.96	4.92	4.94	5.35	4.88	4.68	4.82	4.96	4.92	4.94	5.35	4.88
Puri & Sen	4.77	4.88	4.99	5.06	4.69	5.17	4.98	4.77	4.88	4.99	5.06	4.69	5.17	4.98
INT	5.25	5.15	5.09	5.01	5.16	5.38	5.01	5.40	5.20	5.10	5.12	5.10	5.45	5.05
ART INT	3.75	3.72	3.95	4.26	4.89	7.04	7.30	5.15	4.80	4.70	5.21	6.54	8.89	11.14
Koch	3.90	4.30	4.55	4.70	5.03	5.19	5.08	3.90	4.30	4.55	4.70	5.03	5.19	5.08
ATS	4.76	4.99	5.16	5.16	4.80	5.18	4.93	5.05	4.71	4.65	4.92	5.30	4.97	4.68



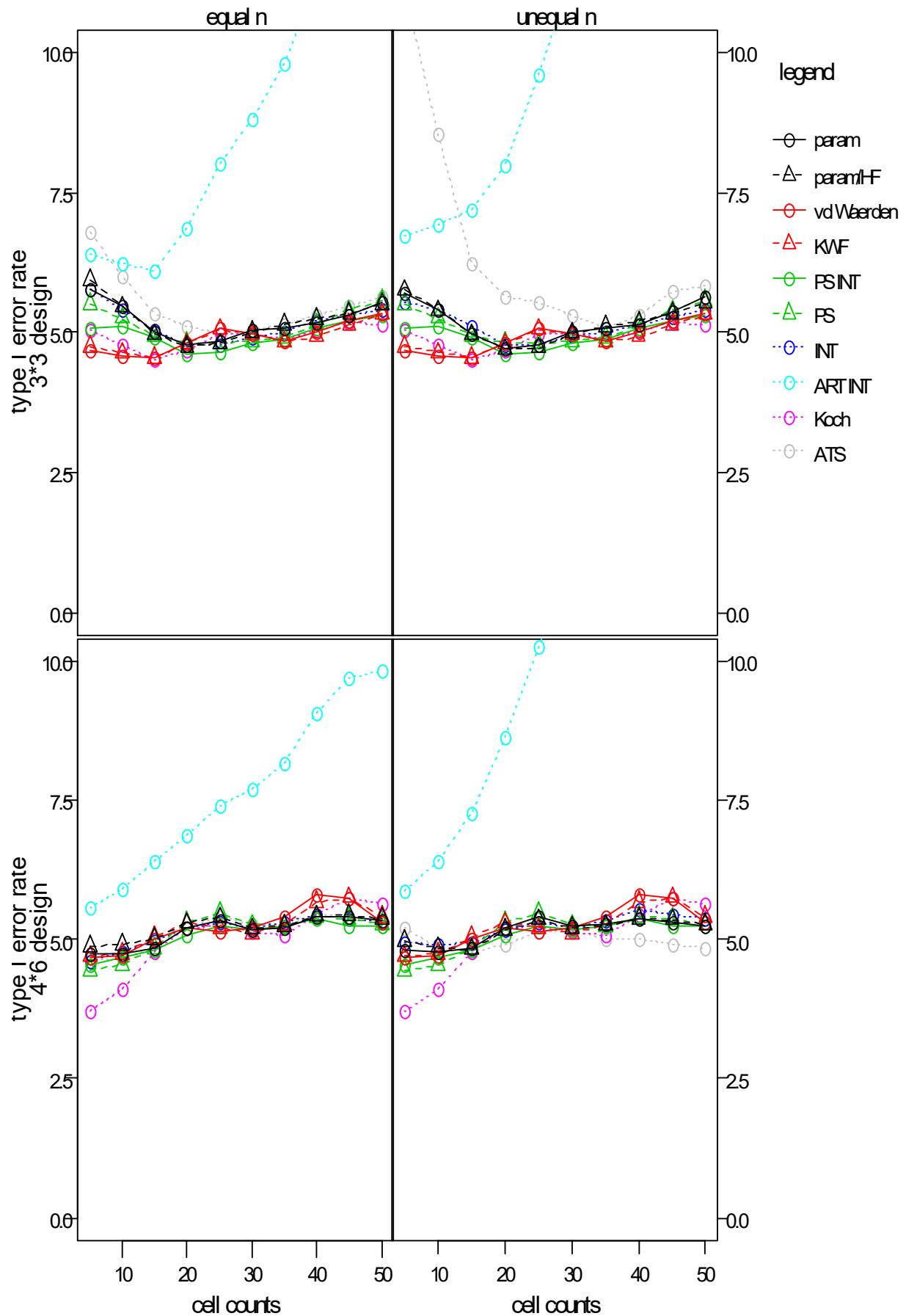
1. 4. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.62	5.44	5.09	4.93	4.83	5.30	5.68	5.57	5.32	4.95	4.85	4.81	5.25	5.62
parametric HF-adj	5.75	5.56	5.15	4.91	4.84	5.30	5.67	5.72	5.45	5.07	4.91	4.83	5.33	5.62
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.97	4.85	4.60	4.51	4.89	5.12	5.50	4.97	4.85	4.60	4.51	4.89	5.12	5.50
Puri & Sen	5.05	4.97	4.72	4.66	4.66	5.24	5.50	5.05	4.97	4.72	4.66	4.66	5.24	5.50
INT	5.47	5.26	4.81	4.64	5.03	5.19	5.58	5.33	5.22	4.91	4.71	4.96	5.18	5.58
ART INT	5.63	5.45	4.91	4.59	4.95	5.11	5.47	5.45	5.22	5.01	4.96	4.90	5.36	5.70
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.69	6.02	5.28	5.04	4.99	5.42	5.57	11.18	8.55	6.11	5.49	5.03	5.34	6.00
large design (4*6)														
parametric	4.87	4.90	4.85	4.99	5.26	5.16	5.14	4.75	4.86	4.90	5.12	5.30	5.19	5.22
parametric HF-adj	5.07	5.03	4.90	5.03	5.35	5.19	5.15	5.13	5.05	5.00	5.17	5.36	5.21	5.22
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	4.55	4.71	4.96	5.12	5.12	5.01	5.01	4.55	4.71	4.96	5.12	5.12	5.01	5.01
Puri & Sen	4.30	4.59	4.75	4.96	5.24	5.12	5.10	4.30	4.59	4.75	4.96	5.24	5.12	5.10
INT	4.88	4.95	5.14	5.20	5.19	5.10	5.01	4.82	4.91	5.12	5.21	5.19	5.01	5.00
ART INT	4.87	5.00	4.90	4.92	5.36	5.15	5.22	5.10	5.16	5.01	5.01	5.42	5.25	5.25
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.60	4.61	4.74	5.10	5.29	5.23	5.13	5.49	5.15	4.84	4.92	5.31	5.00	5.00



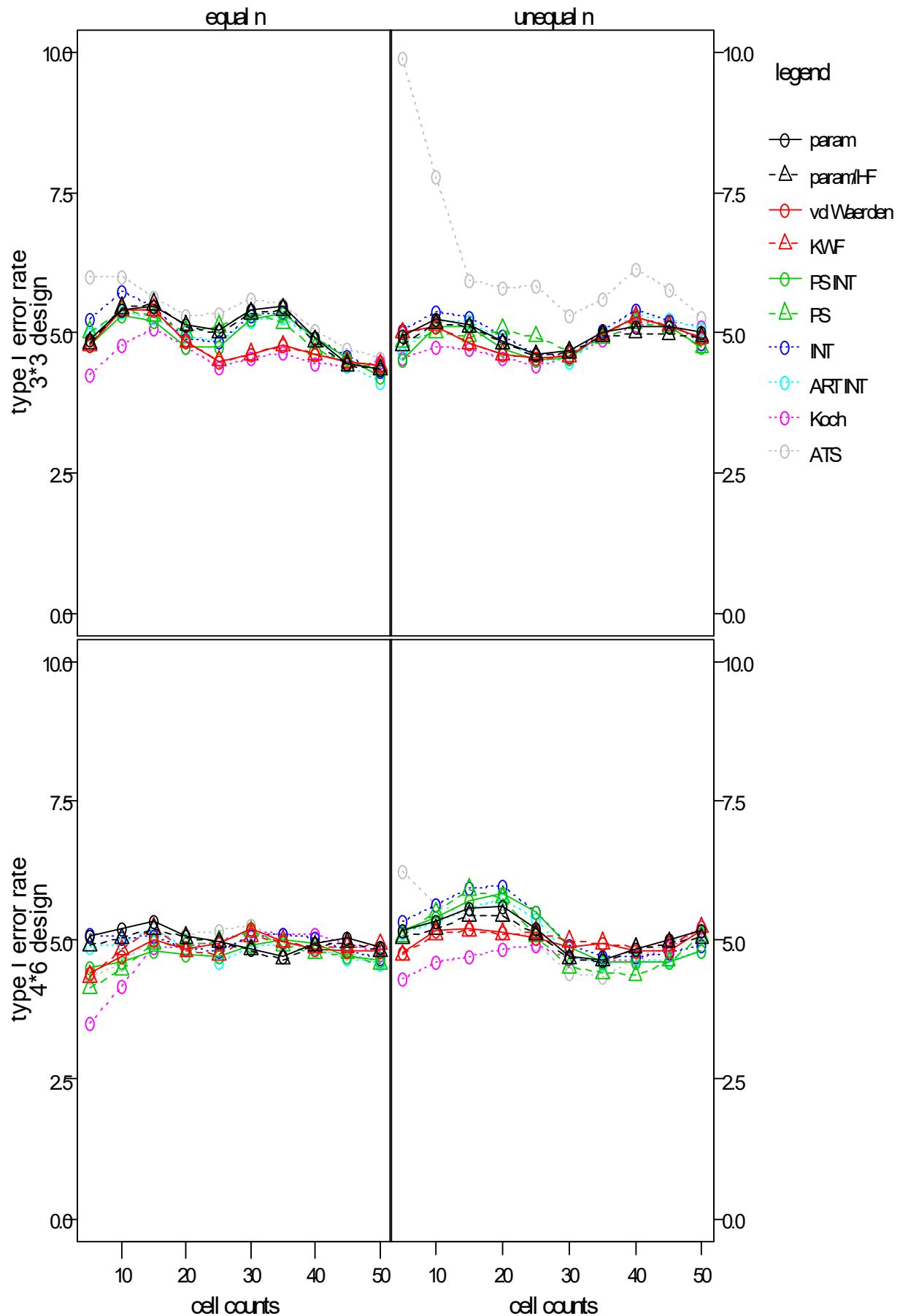
1. 4. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.78	5.47	5.01	4.76	5.03	5.16	5.55	5.70	5.39	4.96	4.70	5.00	5.15	5.65
parametric HF-adj	5.94	5.46	4.96	4.75	5.01	5.24	5.50	5.75	5.39	4.96	4.70	4.99	5.20	5.54
van der Waerden	4.67	4.59	4.54	4.81	4.96	5.00	5.35	4.67	4.59	4.54	4.81	4.96	5.00	5.35
KWF	4.75	4.64	4.55	4.80	4.97	4.92	5.32	4.75	4.64	4.55	4.80	4.97	4.92	5.32
Puri & Sen INT	5.07	5.10	4.92	4.62	4.81	5.07	5.30	5.07	5.10	4.92	4.62	4.81	5.07	5.30
Puri & Sen	5.50	5.25	4.95	4.81	4.85	5.15	5.57	5.50	5.25	4.95	4.81	4.85	5.15	5.57
INT	5.75	5.40	5.03	4.76	4.91	5.22	5.39	5.53	5.39	5.12	4.79	4.95	5.14	5.39
ART INT	6.40	6.24	6.10	6.84	8.80	11.30	12.15	6.71	6.91	7.19	7.97	11.36	13.10	15.78
Koch	5.05	4.79	4.50	4.67	4.96	5.03	5.15	5.05	4.79	4.50	4.67	4.96	5.03	5.15
ATS	6.80	6.00	5.35	5.10	5.03	5.31	5.65	11.12	8.55	6.24	5.62	5.31	5.30	5.82
large design (4*6)														
parametric	4.75	4.74	4.85	5.19	5.18	5.40	5.35	4.82	4.78	4.85	5.21	5.25	5.36	5.23
parametric HF-adj	4.87	4.91	5.01	5.30	5.20	5.42	5.38	4.98	4.85	4.82	5.17	5.21	5.38	5.28
van der Waerden	4.67	4.70	4.99	5.19	5.20	5.80	5.31	4.67	4.70	4.99	5.19	5.20	5.80	5.31
KWF	4.70	4.74	5.04	5.29	5.11	5.67	5.41	4.70	4.74	5.04	5.29	5.11	5.67	5.41
Puri & Sen INT	4.53	4.67	4.81	5.06	5.18	5.36	5.23	4.53	4.67	4.81	5.06	5.18	5.36	5.23
Puri & Sen	4.45	4.54	4.84	5.31	5.26	5.41	5.27	4.45	4.54	4.84	5.31	5.26	5.41	5.27
INT	4.62	4.78	4.96	5.20	5.22	5.45	5.30	4.93	4.91	4.94	5.17	5.21	5.53	5.37
ART INT	5.58	5.91	6.39	6.86	7.69	9.07	9.82	5.86	6.39	7.26	8.64	11.54	14.39	16.11
Koch	3.71	4.11	4.76	5.19	5.15	5.44	5.62	3.71	4.11	4.76	5.19	5.15	5.44	5.62
ATS	4.62	4.66	4.84	5.22	5.26	5.44	5.23	5.20	4.83	4.76	4.91	5.17	5.00	4.83



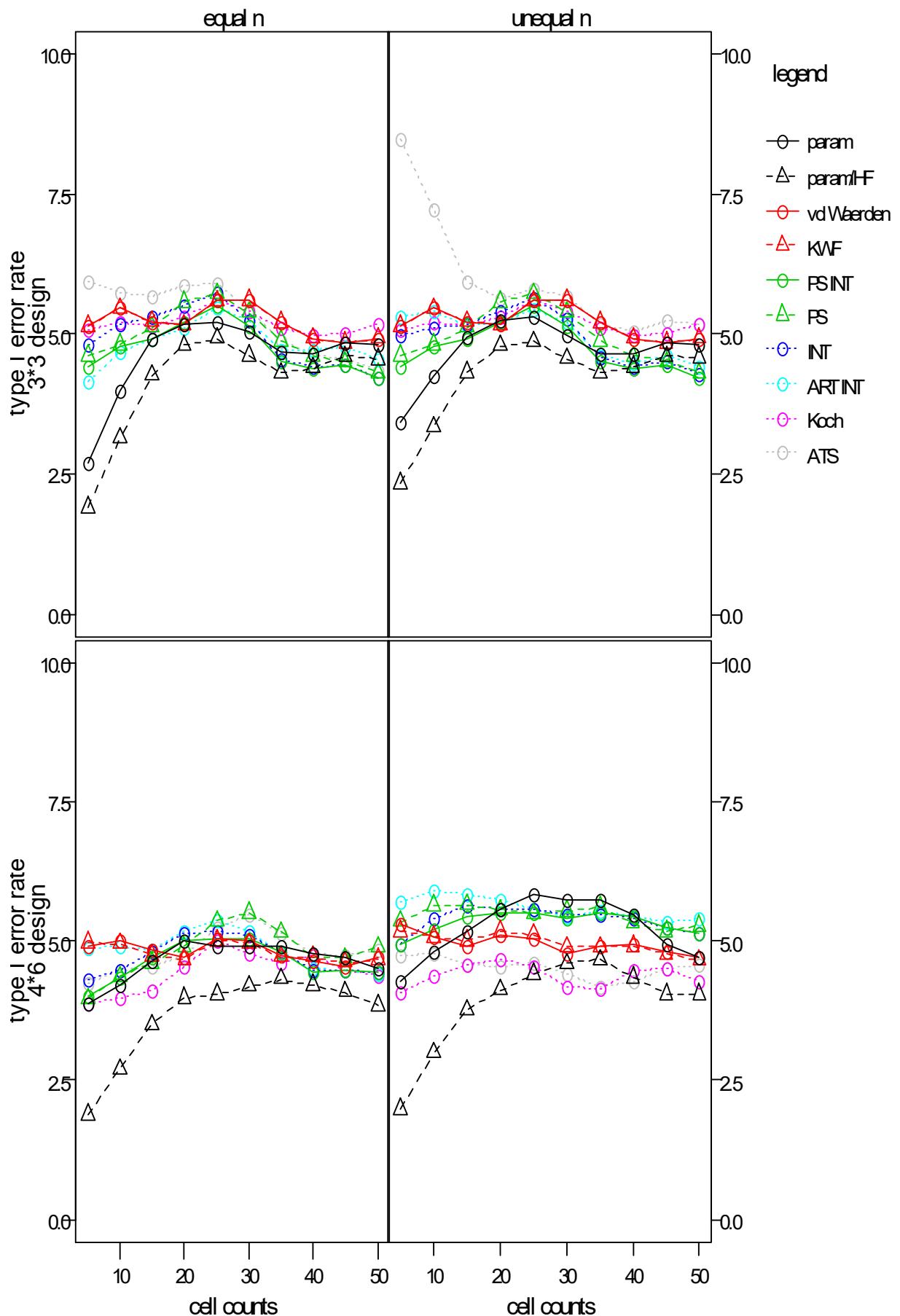
1. 4. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.88	5.40	5.47	5.14	5.39	4.91	4.35	4.93	5.25	5.15	4.84	4.68	5.11	5.01
parametric HF-adj	4.81	5.44	5.51	5.12	5.34	4.85	4.33	4.78	5.16	5.10	4.80	4.65	4.99	4.92
van der Waerden	4.76	5.41	5.40	4.85	4.61	4.61	4.42	5.00	5.12	4.81	4.62	4.58	5.28	4.90
KWF	4.76	5.41	5.40	4.85	4.61	4.61	4.42	5.00	5.12	4.81	4.62	4.58	5.28	4.90
Puri & Sen INT	4.76	5.29	5.19	4.74	5.25	4.92	4.23	4.51	5.10	5.09	4.71	4.55	5.26	4.73
Puri & Sen	5.01	5.39	5.29	5.01	5.36	4.71	4.37	4.83	5.01	4.92	5.05	4.66	5.17	4.73
INT	5.23	5.74	5.47	4.88	5.31	4.92	4.30	5.05	5.38	5.26	4.93	4.58	5.39	4.80
ART INT	4.99	5.36	5.28	4.93	5.19	4.86	4.10	4.64	5.20	5.19	4.85	4.49	5.30	5.06
Koch	4.25	4.79	5.06	4.74	4.54	4.45	4.48	4.55	4.74	4.70	4.53	4.54	5.15	5.10
ATS	6.00	6.01	5.65	5.30	5.59	5.05	4.55	9.91	7.77	5.93	5.81	5.32	6.14	5.28
large design (4*6)														
parametric	5.07	5.20	5.33	5.08	4.84	4.95	4.87	5.18	5.35	5.57	5.61	4.70	4.84	5.17
parametric HF-adj	4.90	5.03	5.20	5.04	4.82	4.89	4.80	5.03	5.20	5.44	5.44	4.66	4.85	5.03
van der Waerden	4.40	4.70	5.01	4.83	5.19	4.83	4.82	4.78	5.17	5.22	5.14	4.86	4.80	5.17
KWF	4.35	4.83	5.21	4.80	5.08	4.88	4.92	4.73	5.11	5.17	5.11	4.97	4.86	5.22
Puri & Sen INT	4.52	4.61	4.81	4.74	4.92	4.94	4.64	5.16	5.42	5.71	5.85	4.86	4.60	4.80
Puri & Sen	4.15	4.46	4.94	4.92	5.16	4.78	4.58	5.06	5.49	5.90	5.75	4.51	4.36	5.07
INT	5.10	5.03	5.08	4.85	5.06	5.05	4.68	5.35	5.65	5.92	5.96	4.89	4.71	4.92
ART INT	4.87	4.94	5.19	4.86	4.86	4.88	4.57	5.13	5.31	5.58	5.74	4.71	4.64	4.80
Koch	3.50	4.19	4.88	4.86	5.16	5.09	4.75	4.31	4.60	4.71	4.85	4.67	4.65	5.25
ATS	4.33	4.58	5.06	5.12	5.28	4.79	4.62	6.22	5.65	5.45	5.44	4.42	4.67	5.10



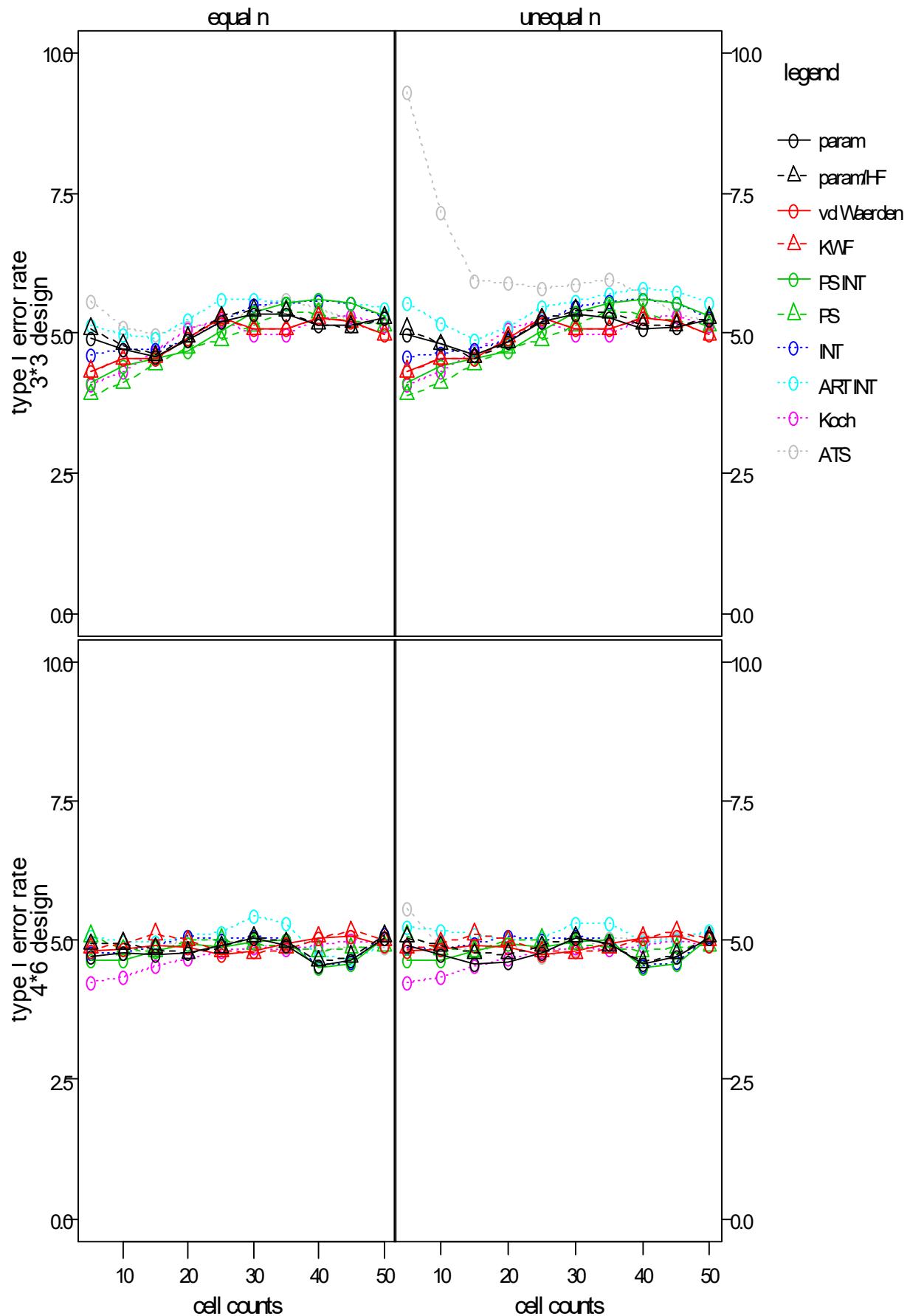
1. 4. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.69	3.99	4.92	5.16	5.03	4.65	4.80	3.41	4.26	4.94	5.25	4.99	4.65	4.82
parametric HF-adj	1.91	3.14	4.26	4.80	4.62	4.39	4.55	2.33	3.34	4.31	4.79	4.56	4.41	4.58
van der Waerden	5.14	5.46	5.22	5.16	5.61	4.92	4.92	5.14	5.46	5.22	5.16	5.61	4.92	4.92
KWF	5.14	5.46	5.22	5.16	5.61	4.92	4.92	5.14	5.46	5.22	5.16	5.61	4.92	4.92
Puri & Sen INT	4.40	4.79	4.92	5.20	5.15	4.39	4.21	4.40	4.79	4.92	5.20	5.15	4.39	4.21
Puri & Sen	4.62	4.81	5.12	5.57	5.38	4.60	4.30	4.62	4.81	5.12	5.57	5.38	4.60	4.30
INT	4.80	5.16	5.29	5.51	5.24	4.42	4.21	4.96	5.10	5.16	5.41	5.26	4.41	4.28
ART INT	4.14	4.69	4.90	5.10	5.24	4.71	4.53	5.31	5.39	5.15	5.21	5.19	4.49	4.40
Koch	5.08	5.21	5.14	5.31	5.40	4.99	5.17	5.08	5.21	5.14	5.31	5.40	4.99	5.17
ATS	5.93	5.74	5.66	5.88	5.44	4.64	4.36	8.47	7.21	5.94	5.62	5.67	5.04	5.16
large design (4*6)														
parametric	3.88	4.20	4.65	5.00	4.90	4.77	4.50	4.26	4.80	5.16	5.56	5.75	5.47	4.72
parametric HF-adj	1.89	2.70	3.50	3.98	4.19	4.21	3.85	1.99	2.99	3.77	4.12	4.60	4.35	4.05
van der Waerden	4.92	5.00	4.83	4.72	5.00	4.64	4.69	5.30	5.08	4.90	5.10	4.78	4.95	4.72
KWF	4.97	4.95	4.74	4.67	4.96	4.72	4.67	5.17	5.08	5.01	5.17	4.89	4.91	4.65
Puri & Sen INT	4.01	4.34	4.70	5.00	5.03	4.45	4.45	4.95	5.22	5.44	5.51	5.42	5.43	5.15
Puri & Sen	3.96	4.36	4.61	4.90	5.51	4.72	4.90	5.35	5.64	5.65	5.56	5.54	5.32	5.28
INT	4.30	4.49	4.80	5.14	5.10	4.46	4.45	4.95	5.42	5.62	5.56	5.47	5.41	5.13
ART INT	4.88	4.89	4.85	5.17	5.16	4.50	4.40	5.70	5.91	5.85	5.74	5.44	5.43	5.42
Koch	3.87	3.96	4.12	4.55	4.77	4.74	4.37	4.06	4.39	4.56	4.66	4.16	4.46	4.28
ATS	4.25	4.46	4.53	4.74	5.47	4.78	4.83	4.75	4.76	4.56	4.55	4.41	4.26	4.58



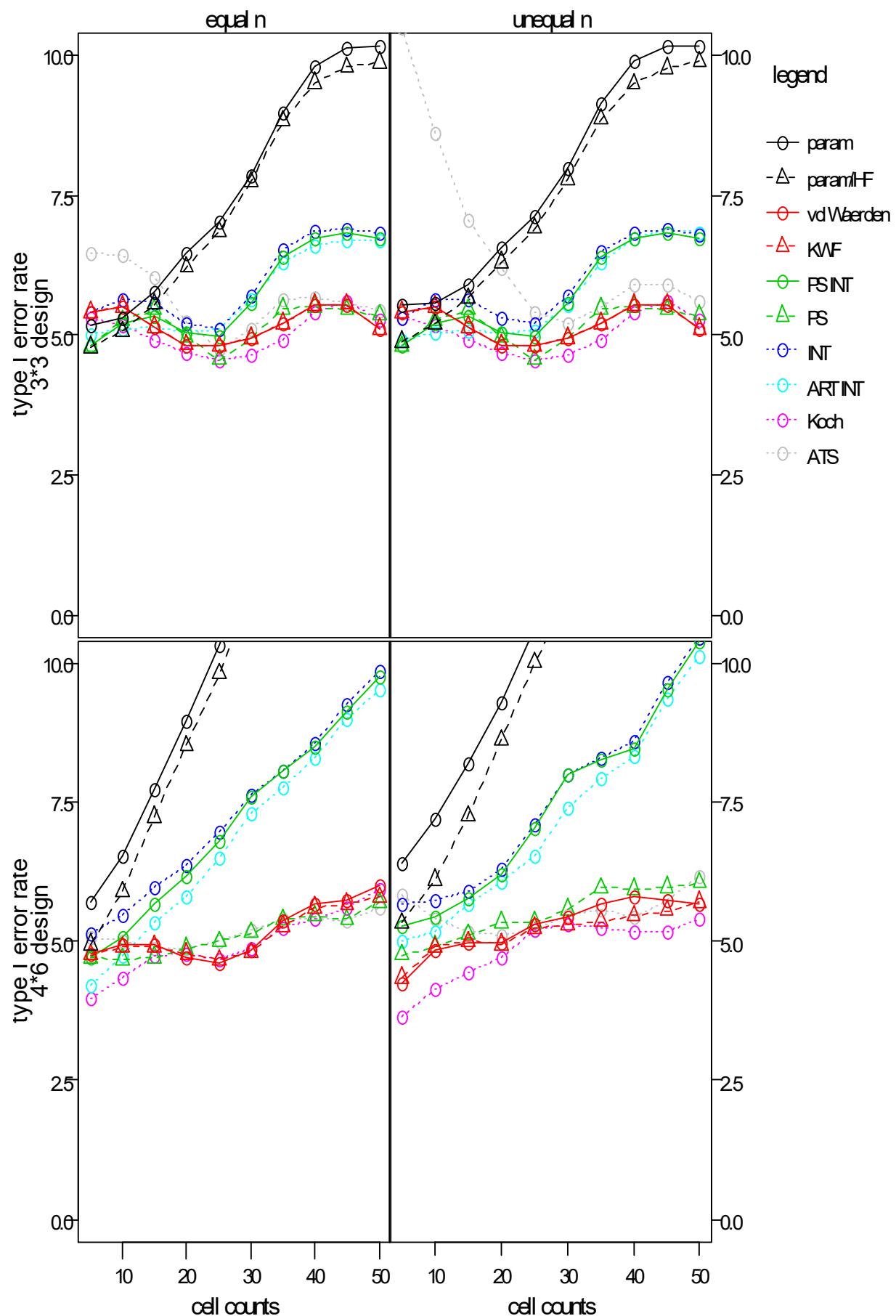
1. 4. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.92	4.71	4.57	4.88	5.35	5.15	5.28	4.98	4.80	4.60	4.85	5.34	5.07	5.25
parametric HF-adj	5.07	4.79	4.60	4.92	5.41	5.15	5.27	5.08	4.80	4.56	4.85	5.40	5.15	5.27
van der Waerden	4.31	4.53	4.56	4.92	5.06	5.28	4.98	4.31	4.53	4.56	4.92	5.06	5.28	4.98
KWF	4.31	4.53	4.56	4.92	5.06	5.28	4.98	4.31	4.53	4.56	4.92	5.06	5.28	4.98
Puri & Sen INT	4.10	4.40	4.54	4.66	5.36	5.59	5.30	4.10	4.40	4.54	4.66	5.36	5.59	5.30
Puri & Sen	3.90	4.10	4.45	4.74	5.14	5.35	5.13	3.90	4.10	4.45	4.74	5.14	5.35	5.13
INT	4.62	4.70	4.72	4.88	5.49	5.56	5.28	4.58	4.65	4.71	4.89	5.48	5.61	5.28
ART INT	5.15	4.97	4.90	5.24	5.61	5.60	5.42	5.54	5.16	4.88	5.12	5.58	5.79	5.55
Koch	4.08	4.30	4.66	5.07	4.97	5.26	5.13	4.08	4.30	4.66	5.07	4.97	5.26	5.13
ATS	5.57	5.11	4.96	5.10	5.41	5.43	5.15	9.30	7.16	5.92	5.90	5.85	5.70	5.22
large design (4*6)														
parametric	4.72	4.76	4.75	4.78	5.05	4.55	5.04	4.90	4.75	4.59	4.60	5.03	4.59	5.04
parametric HF-adj	4.93	4.94	4.85	4.78	5.06	4.62	5.07	5.05	4.90	4.76	4.75	5.06	4.61	5.05
van der Waerden	4.82	4.83	4.92	4.88	4.81	5.05	4.91	4.82	4.83	4.92	4.88	4.81	5.05	4.91
KWF	4.85	4.95	5.11	5.00	4.78	5.05	5.00	4.85	4.95	5.11	5.00	4.78	5.05	5.00
Puri & Sen INT	4.65	4.65	4.81	4.95	4.97	4.51	5.05	4.65	4.65	4.81	4.95	4.97	4.51	5.05
Puri & Sen	5.07	4.83	4.81	5.00	4.94	4.81	4.90	5.07	4.83	4.81	5.00	4.94	4.81	4.90
INT	4.78	4.76	4.91	5.06	5.06	4.55	5.10	4.87	4.83	4.95	5.08	5.06	4.53	5.07
ART INT	5.08	4.97	4.97	5.06	5.44	4.69	4.90	5.25	5.18	5.10	5.01	5.30	4.97	5.18
Koch	4.23	4.35	4.53	4.66	4.86	4.92	4.90	4.23	4.35	4.53	4.66	4.86	4.92	4.90
ATS	4.78	4.78	4.88	4.99	4.92	4.83	4.87	5.57	4.86	4.80	4.93	4.85	4.99	5.13



1. 4. 1. 13 normal distribution - equal variances - contaminated III

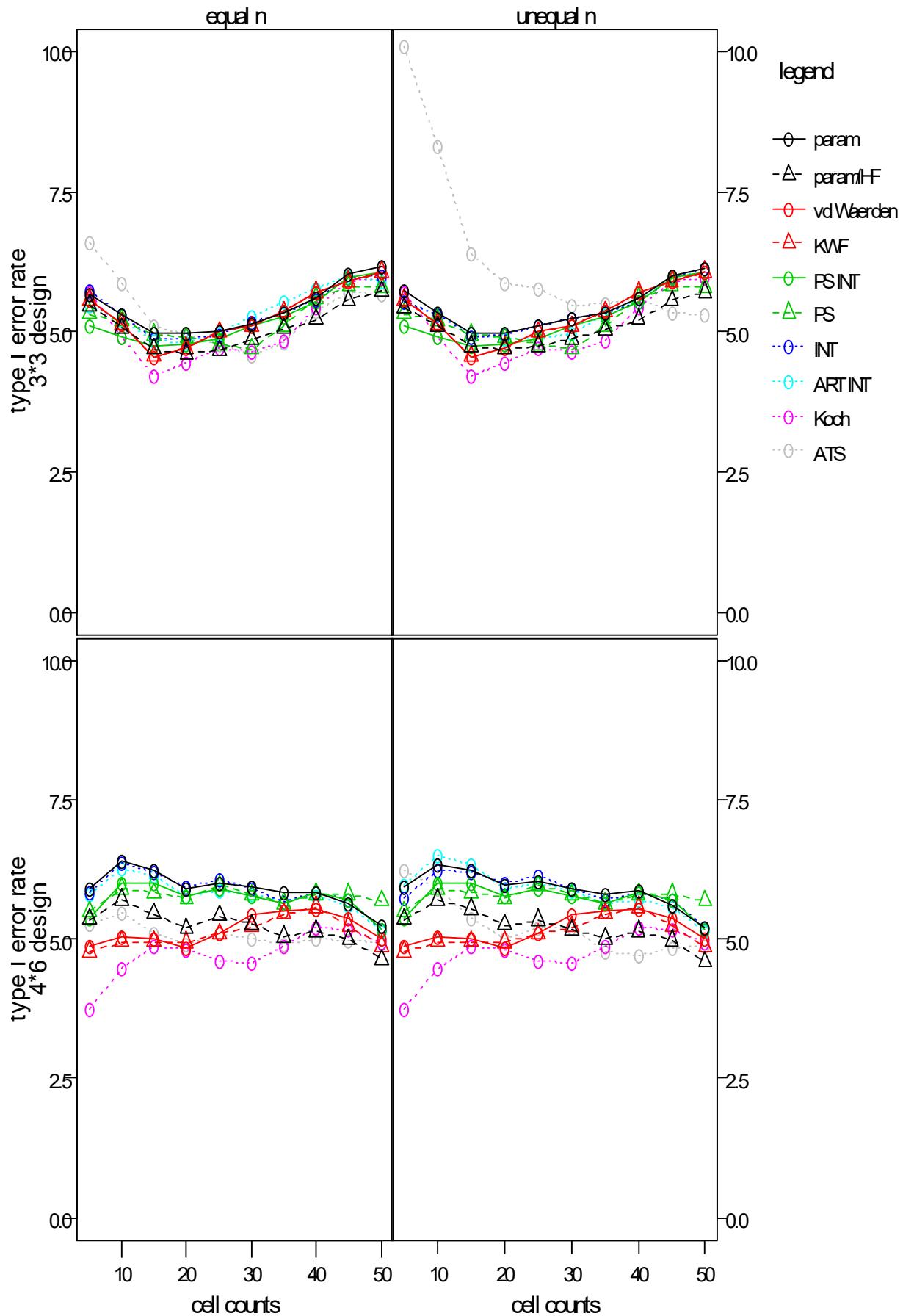
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.18	5.32	5.76	6.46	7.85	9.79	10.15	5.55	5.56	5.91	6.55	7.99	9.90	10.15
parametric HF-adj	4.78	5.06	5.55	6.21	7.74	9.50	9.87	4.88	5.19	5.66	6.30	7.79	9.49	9.88
van der Waerden	5.41	5.51	5.14	4.82	4.95	5.54	5.11	5.41	5.51	5.14	4.82	4.95	5.54	5.11
KWF	5.41	5.51	5.14	4.82	4.95	5.54	5.11	5.41	5.51	5.14	4.82	4.95	5.54	5.11
Puri & Sen INT	4.80	5.22	5.35	5.04	5.58	6.74	6.73	4.80	5.22	5.35	5.04	5.58	6.74	6.73
Puri & Sen	4.80	5.26	5.45	4.96	4.95	5.51	5.35	4.80	5.26	5.45	4.96	4.95	5.51	5.35
INT	5.40	5.65	5.56	5.21	5.71	6.84	6.83	5.30	5.62	5.62	5.31	5.70	6.83	6.78
ART INT	5.00	5.11	5.14	5.04	5.65	6.59	6.68	4.90	5.04	5.07	5.04	5.55	6.72	6.82
Koch	5.32	5.16	4.91	4.66	4.65	5.40	5.26	5.32	5.16	4.91	4.66	4.65	5.40	5.26
ATS	6.47	6.42	6.04	5.25	5.11	5.68	5.43	10.48	8.60	7.04	6.19	5.19	5.91	5.61
large design (4*6)														
parametric	5.69	6.54	7.74	8.96	11.84	14.21	16.39	6.39	7.19	8.18	9.29	11.89	14.75	17.82
parametric HF-adj	4.94	5.89	7.24	8.52	11.24	13.60	15.79	5.33	6.11	7.26	8.61	11.20	13.95	17.14
van der Waerden	4.78	4.95	4.94	4.70	4.85	5.66	6.00	4.23	4.84	4.97	4.97	5.45	5.80	5.68
KWF	4.75	4.90	4.91	4.78	4.80	5.61	5.79	4.35	4.90	5.00	4.94	5.30	5.46	5.70
Puri & Sen INT	4.71	5.07	5.68	6.16	7.60	8.48	9.77	5.27	5.45	5.76	6.20	8.00	8.45	10.40
Puri & Sen	4.70	4.67	4.71	4.88	5.15	5.45	5.69	4.75	4.91	5.12	5.34	5.57	5.94	6.05
INT	5.13	5.47	5.96	6.36	7.64	8.56	9.87	5.68	5.72	5.90	6.31	8.00	8.59	10.47
ART INT	4.21	4.74	5.34	5.81	7.30	8.30	9.52	5.00	5.17	5.66	6.07	7.40	8.34	10.12
Koch	3.98	4.34	4.74	4.76	4.88	5.40	5.95	3.65	4.14	4.44	4.72	5.30	5.17	5.40
ATS	5.08	4.99	4.86	4.88	5.22	5.42	5.60	5.82	5.39	5.16	5.12	5.46	5.45	6.18



1. 4. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

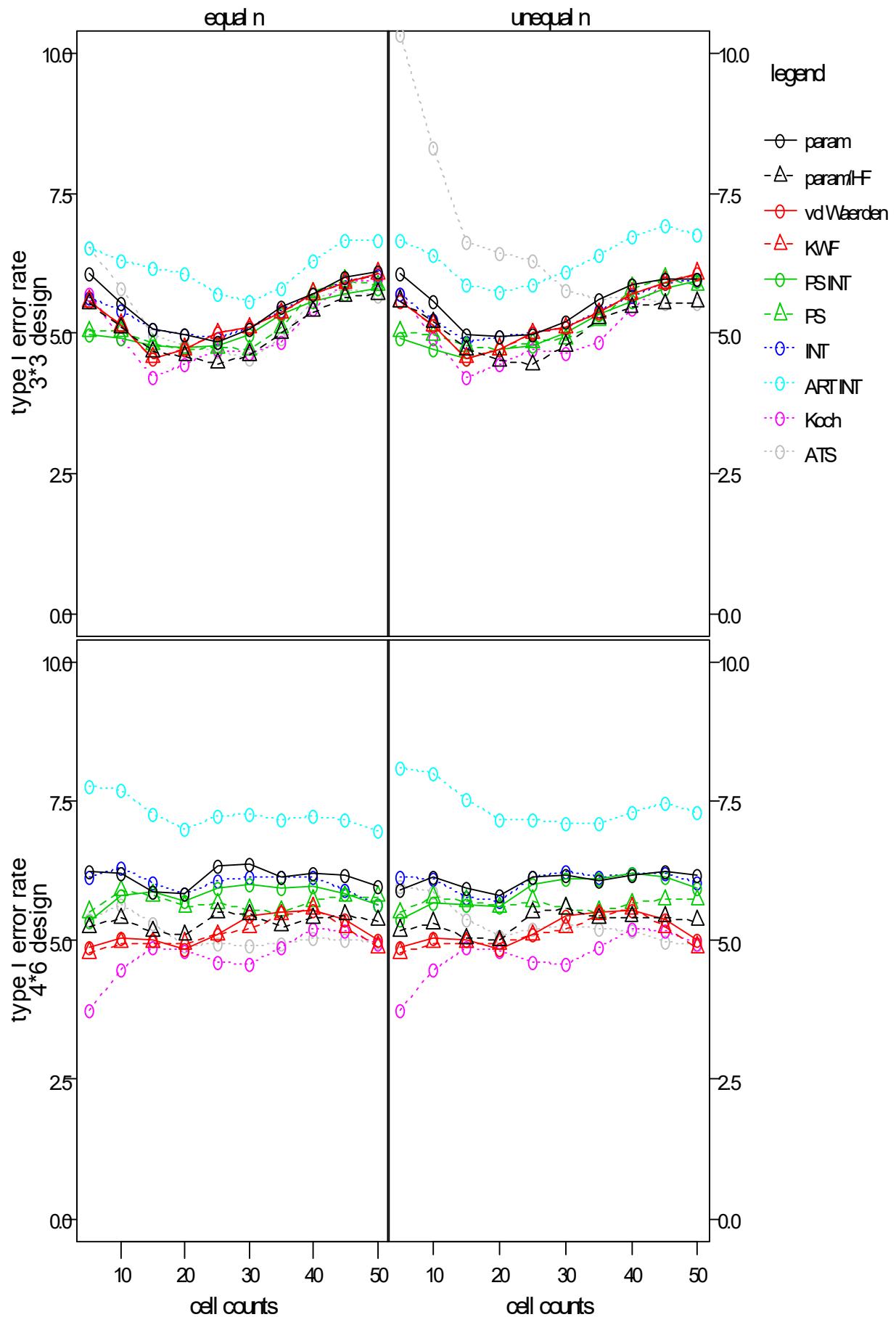
1. 4. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.67	5.30	4.99	4.97	5.14	5.61	6.15	5.72	5.35	4.97	4.96	5.23	5.60	6.12
parametric HF-adj	5.47	5.06	4.69	4.61	4.86	5.22	5.72	5.43	5.10	4.74	4.69	4.86	5.22	5.70
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	5.12	4.92	4.74	4.78	5.10	5.53	6.05	5.12	4.92	4.74	4.78	5.10	5.53	6.05
Puri & Sen	5.32	5.21	4.95	4.90	4.69	5.60	5.80	5.32	5.21	4.95	4.90	4.69	5.60	5.80
INT	5.74	5.30	4.89	4.86	5.17	5.58	6.01	5.55	5.30	4.91	4.94	5.25	5.55	6.12
ART INT	5.47	5.19	4.83	4.81	5.27	5.78	5.90	5.53	5.30	4.96	4.89	4.97	5.61	6.07
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.60	5.85	5.09	4.93	4.59	5.38	5.67	10.08	8.32	6.41	5.85	5.47	5.59	5.30
large design (4*6)														
parametric	5.89	6.39	6.24	5.90	5.94	5.85	5.23	5.93	6.35	6.25	5.97	5.90	5.86	5.20
parametric HF-adj	5.35	5.71	5.45	5.19	5.26	5.14	4.63	5.35	5.71	5.54	5.25	5.16	5.14	4.60
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	5.38	6.01	5.99	5.76	5.76	5.84	5.18	5.38	6.01	5.99	5.76	5.76	5.84	5.18
Puri & Sen	5.50	5.91	5.83	5.72	5.79	5.80	5.68	5.50	5.91	5.83	5.72	5.79	5.80	5.68
INT	5.83	6.36	6.21	5.93	5.89	5.82	5.18	5.73	6.22	6.19	6.00	5.90	5.84	5.20
ART INT	5.81	6.26	6.14	5.78	5.81	5.76	5.15	5.96	6.50	6.34	5.90	5.86	5.71	5.15
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.26	5.47	5.12	4.90	5.00	4.99	4.95	6.25	5.89	5.36	4.99	5.22	4.69	4.88



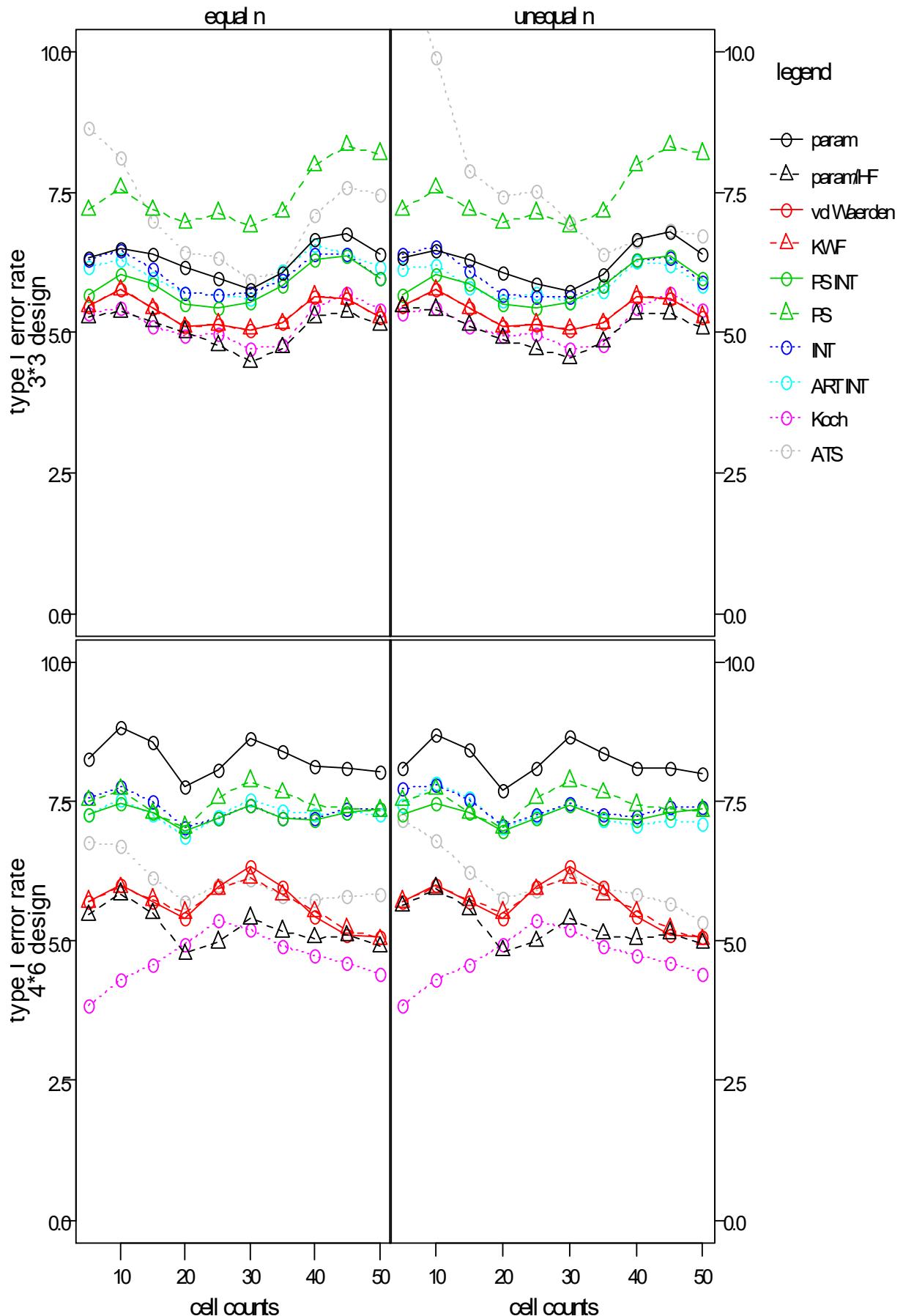
1. 4. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.05	5.54	5.08	4.96	5.08	5.71	6.10	6.05	5.58	4.99	4.94	5.19	5.85	5.97
parametric HF-adj	5.52	5.09	4.67	4.59	4.61	5.38	5.70	5.57	5.20	4.70	4.50	4.78	5.46	5.55
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	4.98	4.91	4.76	4.75	4.99	5.56	5.80	4.90	4.70	4.55	4.72	5.01	5.56	5.92
Puri & Sen	5.03	5.03	4.80	4.72	4.70	5.72	5.85	5.02	4.97	4.76	4.71	4.90	5.80	5.85
INT	5.65	5.40	5.08	4.96	5.09	5.70	6.02	5.70	5.25	4.84	4.95	5.10	5.66	5.98
ART INT	6.52	6.29	6.16	6.07	5.58	6.30	6.65	6.67	6.39	5.88	5.73	6.11	6.74	6.75
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.52	5.81	4.99	4.76	4.55	5.59	5.68	10.31	8.31	6.64	6.44	5.75	5.67	5.52
large design (4*6)														
parametric	6.22	6.20	5.86	5.85	6.36	6.20	5.98	5.90	6.14	5.92	5.81	6.16	6.18	6.17
parametric HF-adj	5.23	5.40	5.15	5.09	5.46	5.40	5.35	5.18	5.31	5.03	5.00	5.57	5.42	5.35
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	5.35	5.81	5.86	5.71	6.00	5.97	5.65	5.36	5.68	5.62	5.61	6.10	6.19	5.95
Puri & Sen	5.51	5.89	5.80	5.61	5.54	5.70	5.78	5.50	5.77	5.70	5.59	5.58	5.66	5.73
INT	6.15	6.31	6.05	5.85	6.15	6.12	5.65	6.15	6.11	5.76	5.71	6.25	6.21	6.03
ART INT	7.77	7.70	7.25	6.99	7.28	7.22	6.95	8.10	7.99	7.54	7.16	7.09	7.31	7.31
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.36	5.65	5.30	4.89	4.91	5.04	4.97	5.97	5.86	5.36	5.06	5.27	5.16	4.90



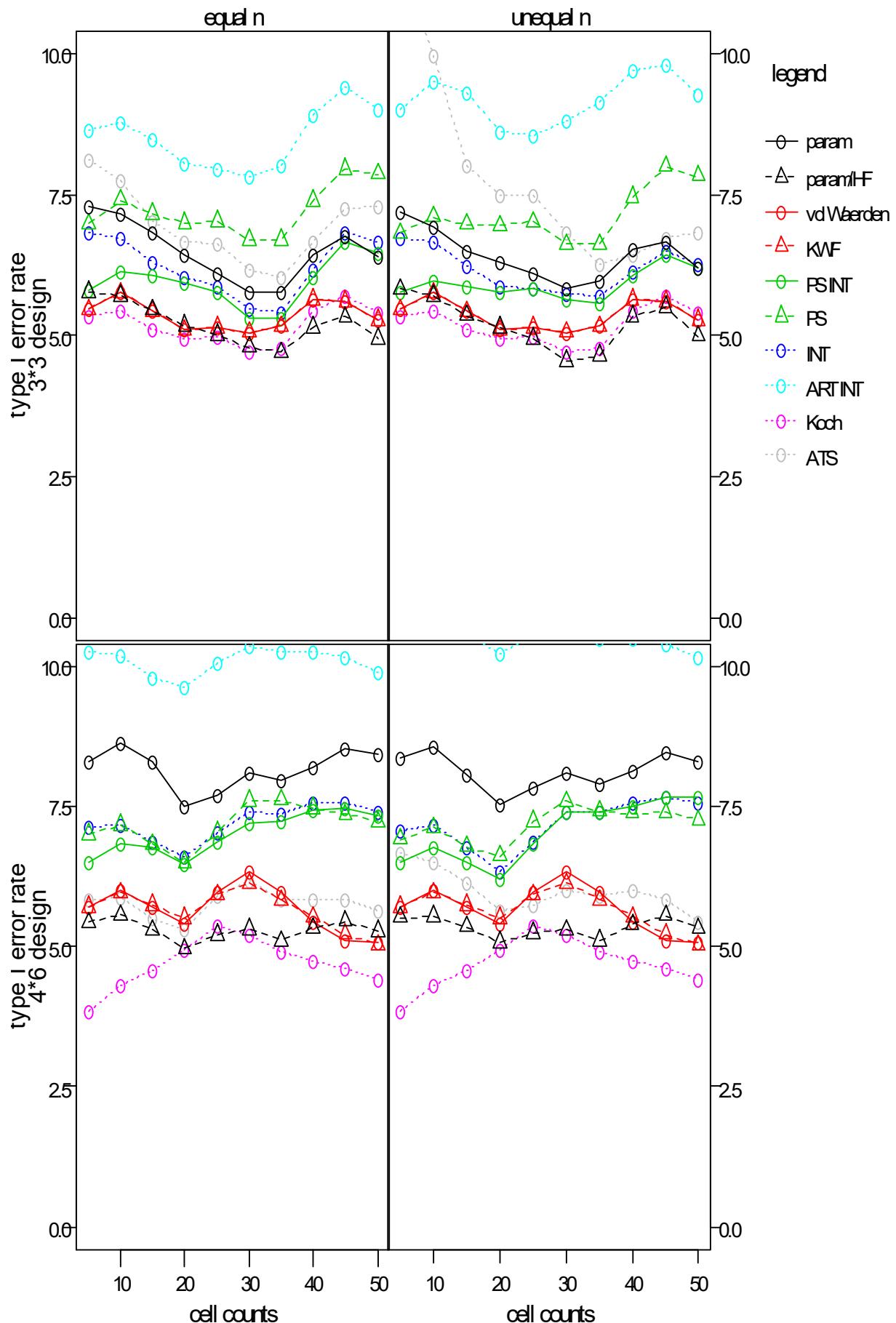
1. 4. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.32	6.49	6.40	6.16	5.78	6.65	6.41	6.33	6.45	6.31	6.05	5.74	6.67	6.38
parametric HF-adj	5.28	5.36	5.20	5.01	4.47	5.28	5.13	5.45	5.41	5.12	4.89	4.53	5.33	5.08
van der Waerden	5.46	5.75	5.43	5.09	5.05	5.64	5.28	5.46	5.75	5.43	5.09	5.05	5.64	5.28
KWF	5.46	5.75	5.43	5.09	5.05	5.64	5.28	5.46	5.75	5.43	5.09	5.05	5.64	5.28
Puri & Sen INT	5.68	6.03	5.88	5.50	5.52	6.31	5.95	5.68	6.03	5.88	5.50	5.52	6.31	5.95
Puri & Sen	7.18	7.56	7.17	6.95	6.89	7.97	8.18	7.18	7.56	7.17	6.95	6.89	7.97	8.18
INT	6.30	6.46	6.12	5.71	5.70	6.38	5.96	6.40	6.53	6.10	5.66	5.64	6.31	5.91
ART INT	6.16	6.29	5.95	5.71	5.60	6.55	6.15	6.13	6.21	5.79	5.58	5.52	6.25	5.83
Koch	5.35	5.44	5.11	4.95	4.70	5.45	5.40	5.35	5.44	5.11	4.95	4.70	5.45	5.40
ATS	8.63	8.12	7.00	6.43	5.93	7.08	7.45	11.79	9.90	7.89	7.43	6.96	6.64	6.72
large design (4*6)														
parametric	8.26	8.81	8.57	7.76	8.62	8.12	8.03	8.08	8.69	8.43	7.69	8.66	8.10	7.98
parametric HF-adj	5.46	5.84	5.49	4.76	5.41	5.05	4.90	5.63	5.94	5.58	4.82	5.39	5.04	4.95
van der Waerden	5.71	5.99	5.69	5.41	6.35	5.44	5.07	5.71	5.99	5.69	5.41	6.35	5.44	5.07
KWF	5.71	5.96	5.74	5.51	6.12	5.53	5.03	5.71	5.96	5.74	5.51	6.12	5.53	5.03
Puri & Sen INT	7.25	7.47	7.30	6.98	7.43	7.16	7.35	7.25	7.47	7.30	6.98	7.43	7.16	7.35
Puri & Sen	7.51	7.71	7.29	7.04	7.86	7.44	7.33	7.51	7.71	7.29	7.04	7.86	7.44	7.33
INT	7.58	7.75	7.50	7.04	7.44	7.20	7.37	7.72	7.81	7.53	7.08	7.47	7.24	7.40
ART INT	7.28	7.54	7.28	6.88	7.54	7.25	7.27	7.43	7.83	7.56	7.03	7.46	7.06	7.10
Koch	3.84	4.32	4.58	4.95	5.22	4.75	4.42	3.84	4.32	4.58	4.95	5.22	4.75	4.42
ATS	6.75	6.71	6.12	5.70	6.11	5.72	5.82	7.17	6.80	6.25	5.76	6.17	5.84	5.33



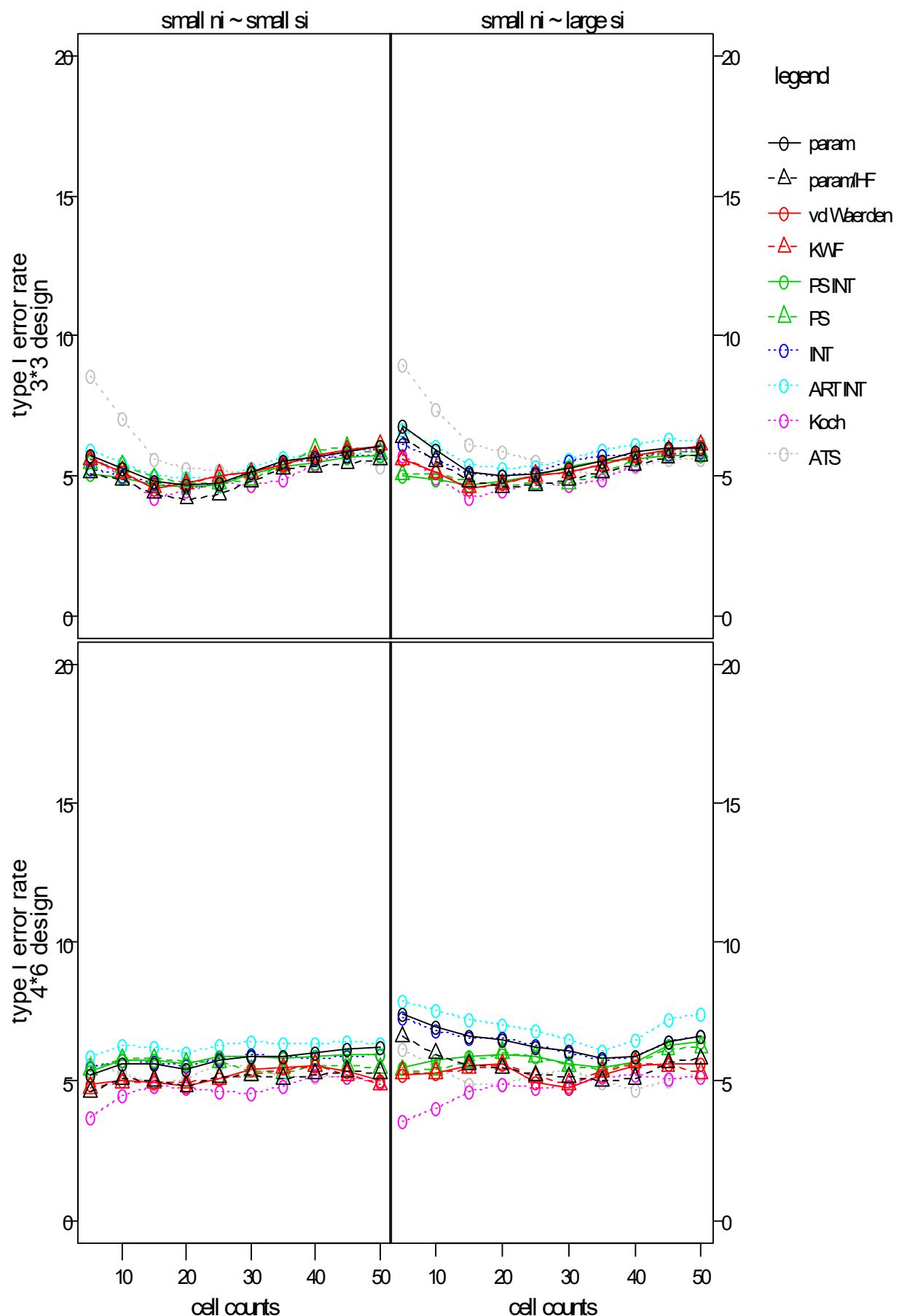
1. 4. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	7.28	7.16	6.82	6.44	5.76	6.44	6.40	7.20	6.91	6.49	6.28	5.84	6.54	6.19
parametric HF-adj	5.77	5.71	5.45	5.17	4.79	5.14	4.95	5.82	5.70	5.35	5.14	4.55	5.34	4.99
van der Waerden	5.46	5.75	5.43	5.09	5.05	5.64	5.28	5.46	5.75	5.43	5.09	5.05	5.64	5.28
KWF	5.46	5.75	5.43	5.09	5.05	5.64	5.28	5.46	5.75	5.43	5.09	5.05	5.64	5.28
Puri & Sen INT	5.81	6.13	6.06	5.94	5.32	6.04	6.46	5.76	5.98	5.85	5.75	5.64	6.06	6.20
Puri & Sen	6.98	7.40	7.16	6.99	6.69	7.39	7.86	6.81	7.10	6.97	6.95	6.61	7.46	7.83
INT	6.82	6.72	6.31	6.04	5.47	6.17	6.65	6.72	6.66	6.24	5.86	5.72	6.14	6.26
ART INT	8.63	8.78	8.47	8.06	7.81	8.90	8.99	9.00	9.51	9.31	8.60	8.81	9.70	9.26
Koch	5.35	5.44	5.11	4.95	4.70	5.45	5.40	5.35	5.44	5.11	4.95	4.70	5.45	5.40
ATS	8.10	7.76	7.01	6.67	6.17	6.67	7.28	11.68	9.96	8.01	7.50	6.81	6.44	6.82
large design (4*6)														
parametric	8.30	8.62	8.28	7.51	8.10	8.20	8.43	8.35	8.55	8.07	7.53	8.10	8.14	8.28
parametric HF-adj	5.43	5.56	5.30	4.96	5.31	5.33	5.27	5.52	5.54	5.35	5.08	5.30	5.39	5.33
van der Waerden	5.71	5.99	5.69	5.41	6.35	5.44	5.07	5.71	5.99	5.69	5.41	6.35	5.44	5.07
KWF	5.71	5.96	5.74	5.51	6.12	5.53	5.03	5.71	5.96	5.74	5.51	6.12	5.53	5.03
Puri & Sen INT	6.50	6.83	6.78	6.47	7.21	7.42	7.32	6.51	6.75	6.51	6.21	7.41	7.51	7.65
Puri & Sen	7.00	7.17	6.82	6.51	7.60	7.47	7.22	6.91	7.12	6.78	6.61	7.59	7.38	7.25
INT	7.12	7.15	6.86	6.59	7.39	7.55	7.40	7.08	7.17	6.78	6.34	7.41	7.55	7.58
ART INT	10.25	10.19	9.79	9.61	10.34	10.25	9.88	10.74	11.02	10.56	10.22	10.68	10.49	10.15
Koch	3.84	4.32	4.58	4.95	5.22	4.75	4.42	3.84	4.32	4.58	4.95	5.22	4.75	4.42
ATS	5.85	5.86	5.49	5.31	6.16	5.85	5.63	6.65	6.50	6.12	5.62	6.00	6.01	5.43



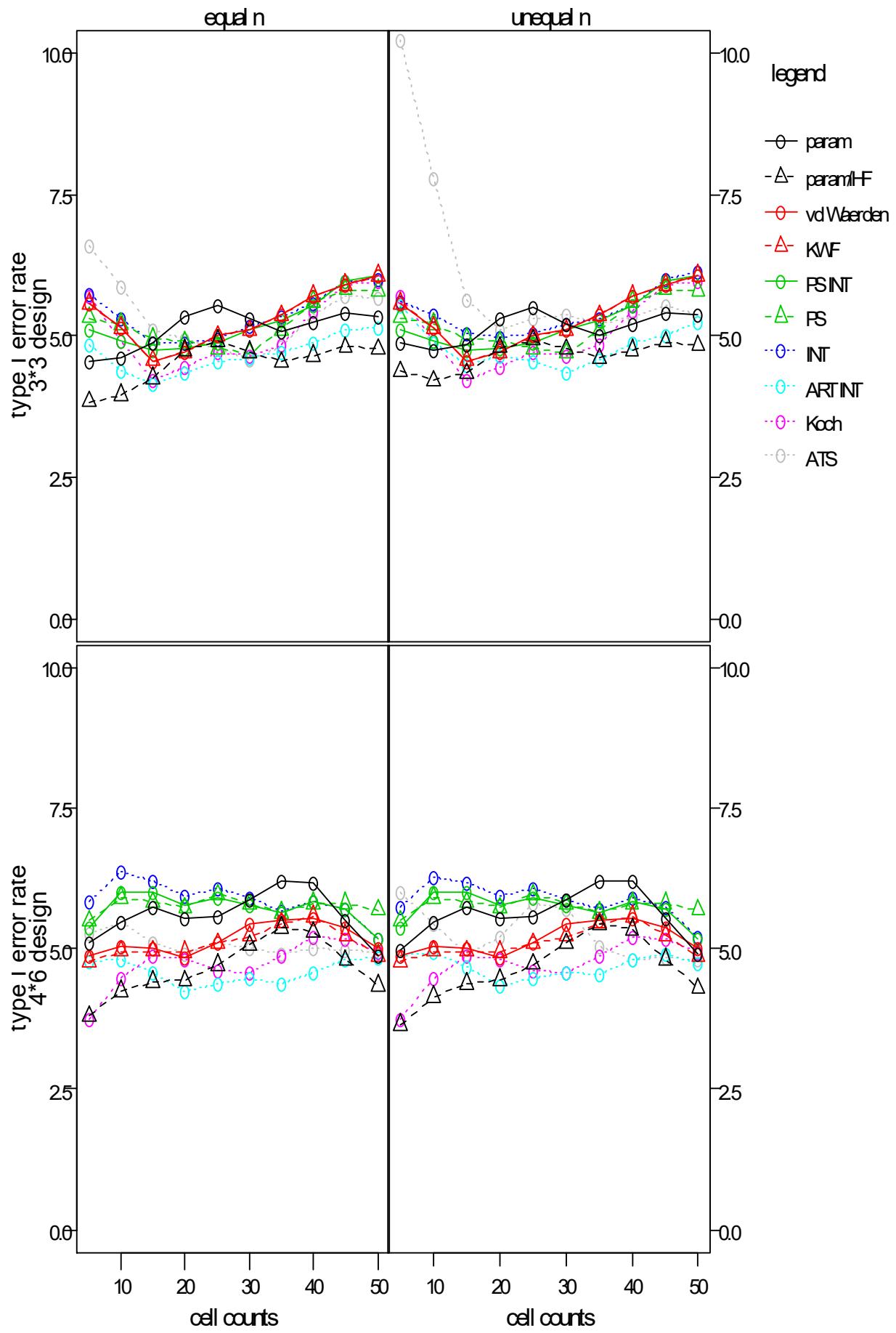
1. 4. 2. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.70	5.26	4.78	4.65	5.11	5.65	6.02	6.79	5.92	5.11	4.96	5.25	5.83	6.00
parametric HF-adj	5.08	4.84	4.36	4.16	4.81	5.34	5.58	6.35	5.54	4.79	4.59	4.85	5.40	5.72
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	5.07	4.90	4.66	4.57	5.05	5.44	5.70	4.97	4.84	4.69	4.78	5.35	5.59	5.75
Puri & Sen	5.46	5.34	4.91	4.75	4.84	5.93	5.80	5.03	5.06	4.80	4.69	4.71	5.61	5.83
INT	5.25	4.97	4.70	4.59	5.10	5.56	5.75	6.12	5.56	5.04	4.96	5.53	5.74	5.82
ART INT	5.90	5.46	5.00	4.90	5.28	5.72	5.83	6.67	6.05	5.42	5.28	5.56	6.14	6.21
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	8.59	7.04	5.62	5.29	5.09	5.75	5.33	8.98	7.36	6.12	5.85	5.14	5.34	5.58
large design (4*6)														
parametric	5.20	5.65	5.62	5.44	5.91	6.00	6.23	7.45	6.96	6.65	6.47	6.06	5.88	6.60
parametric HF-adj	4.61	5.08	5.03	4.81	5.24	5.25	5.30	6.59	5.99	5.59	5.46	5.14	5.11	5.81
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	5.23	5.28	5.54	5.61	4.74	5.59	5.60
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	5.30	5.30	5.45	5.60	4.90	5.65	5.30
Puri & Sen INT	5.36	5.75	5.75	5.62	5.92	5.86	5.93	5.46	5.73	5.89	5.99	5.62	5.71	6.45
Puri & Sen	5.43	5.81	5.81	5.66	5.36	5.56	5.47	5.38	5.42	5.69	6.04	5.55	5.71	6.23
INT	5.51	5.75	5.70	5.58	5.94	5.85	5.93	7.30	6.85	6.55	6.54	6.01	5.88	6.62
ART INT	5.90	6.29	6.24	6.00	6.41	6.38	6.33	7.89	7.54	7.24	7.01	6.51	6.47	7.45
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.56	4.01	4.65	4.91	4.86	5.20	5.13
ATS	5.62	5.28	4.88	5.12	5.50	5.15	4.95	6.14	5.46	4.90	4.90	5.40	4.70	5.30



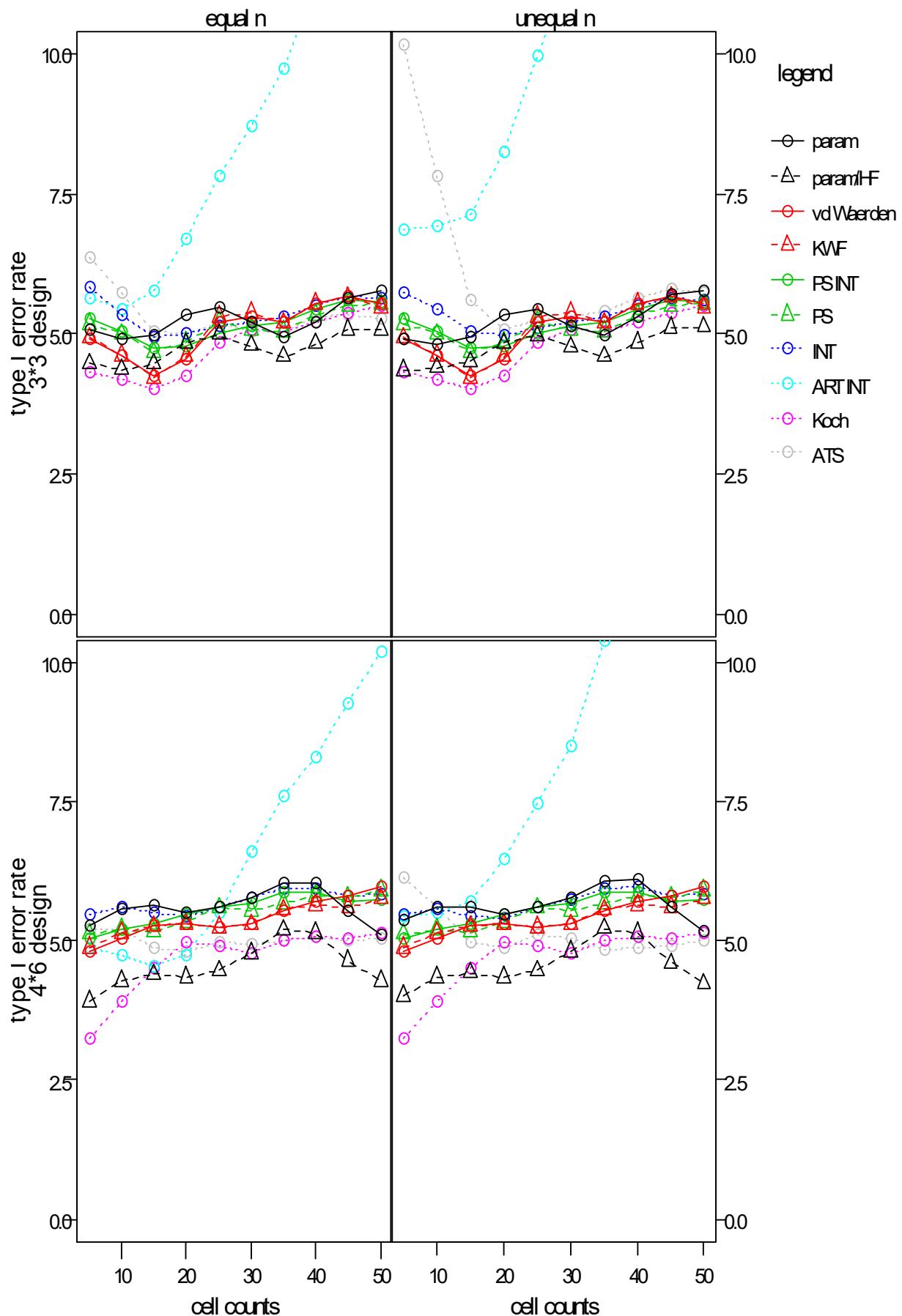
1. 4. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.55	4.62	4.86	5.34	5.30	5.25	5.35	4.87	4.74	4.84	5.31	5.21	5.21	5.38
parametric HF-adj	3.83	3.95	4.25	4.75	4.71	4.65	4.77	4.37	4.21	4.34	4.79	4.76	4.74	4.83
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	5.12	4.92	4.74	4.78	5.10	5.53	6.05	5.12	4.92	4.74	4.78	5.10	5.53	6.05
Puri & Sen	5.32	5.21	4.95	4.90	4.69	5.60	5.80	5.32	5.21	4.95	4.90	4.69	5.60	5.80
INT	5.74	5.30	4.89	4.86	5.17	5.58	6.01	5.60	5.37	5.05	4.99	5.20	5.55	6.12
ART INT	4.84	4.39	4.14	4.36	4.61	4.88	5.15	5.54	4.88	4.49	4.64	4.35	4.88	5.24
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.60	5.85	5.09	4.93	4.59	5.38	5.67	10.23	7.78	5.64	5.11	5.38	5.35	5.36
large design (4*6)														
parametric	5.12	5.47	5.72	5.54	5.86	6.16	4.86	4.96	5.46	5.74	5.54	5.86	6.19	4.91
parametric HF-adj	3.80	4.24	4.41	4.43	5.06	5.29	4.35	3.65	4.14	4.38	4.44	5.09	5.34	4.30
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	5.38	6.01	5.99	5.76	5.76	5.84	5.18	5.38	6.01	5.99	5.76	5.76	5.84	5.18
Puri & Sen	5.50	5.91	5.83	5.72	5.79	5.80	5.68	5.50	5.91	5.83	5.72	5.79	5.80	5.68
INT	5.83	6.36	6.21	5.93	5.89	5.82	5.18	5.74	6.27	6.17	5.93	5.87	5.89	5.21
ART INT	4.78	4.81	4.56	4.24	4.46	4.56	4.83	4.88	4.94	4.66	4.33	4.56	4.81	4.73
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.26	5.47	5.12	4.90	5.00	4.99	4.95	5.99	5.44	4.92	5.19	5.69	4.79	4.82



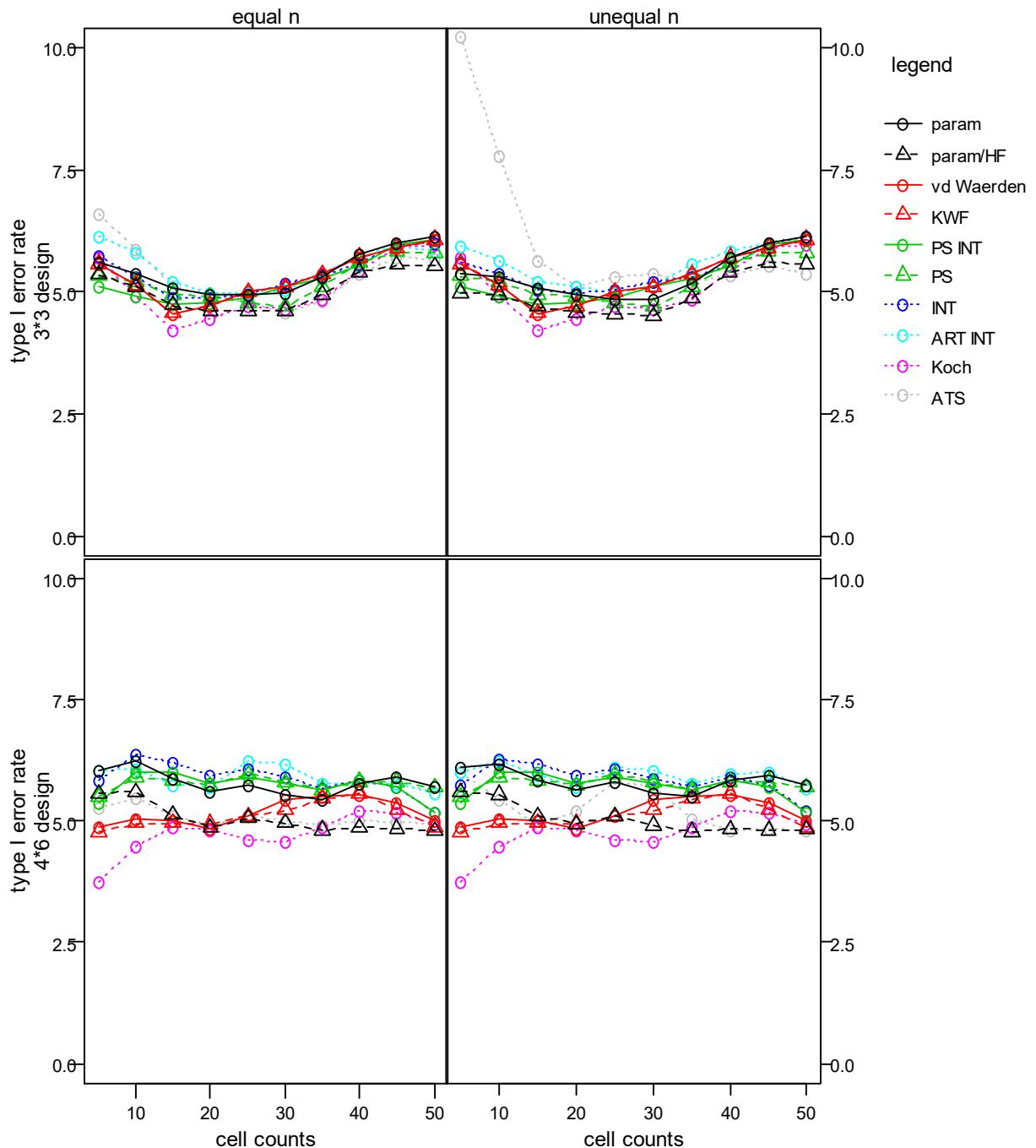
1. 4. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.07	4.90	4.96	5.35	5.19	5.21	5.77	4.90	4.81	4.93	5.35	5.15	5.30	5.77
parametric HF-adj	4.47	4.36	4.46	4.83	4.79	4.82	5.07	4.35	4.39	4.50	4.83	4.76	4.84	5.12
van der Waerden	4.90	4.62	4.24	4.55	5.30	5.55	5.52	4.90	4.62	4.24	4.55	5.30	5.55	5.52
KWF	4.93	4.62	4.22	4.59	5.37	5.54	5.47	4.93	4.62	4.22	4.59	5.37	5.54	5.47
Puri & Sen INT	5.28	5.04	4.75	4.79	5.14	5.44	5.58	5.28	5.04	4.75	4.79	5.14	5.44	5.58
Puri & Sen	5.18	5.00	4.66	4.85	5.08	5.34	5.53	5.18	5.00	4.66	4.85	5.08	5.34	5.53
INT	5.82	5.34	4.94	5.00	5.22	5.50	5.63	5.72	5.44	5.03	4.96	5.20	5.51	5.60
ART INT	5.62	5.45	5.76	6.68	8.72	11.23	13.45	6.85	6.92	7.12	8.25	11.49	15.24	18.67
Koch	4.32	4.19	4.03	4.26	5.08	5.22	5.50	4.32	4.19	4.03	4.26	5.08	5.22	5.50
ATS	6.35	5.72	5.04	5.01	5.04	5.29	5.27	10.15	7.80	5.60	5.08	5.30	5.65	5.73
large design (4*6)														
parametric	5.28	5.58	5.62	5.49	5.76	6.04	5.10	5.37	5.61	5.59	5.46	5.76	6.09	5.16
parametric HF-adj	3.91	4.28	4.40	4.34	4.78	5.14	4.28	4.01	4.35	4.42	4.34	4.81	5.14	4.23
van der Waerden	4.80	5.05	5.26	5.31	5.29	5.70	5.97	4.80	5.05	5.26	5.31	5.29	5.70	5.97
KWF	4.88	5.14	5.26	5.29	5.30	5.64	5.75	4.88	5.14	5.26	5.29	5.30	5.64	5.75
Puri & Sen INT	5.03	5.20	5.32	5.46	5.66	5.86	5.75	5.03	5.20	5.32	5.46	5.66	5.86	5.75
Puri & Sen	5.12	5.21	5.15	5.33	5.54	5.81	5.90	5.12	5.21	5.15	5.33	5.54	5.81	5.90
INT	5.47	5.59	5.52	5.44	5.76	5.95	5.84	5.48	5.58	5.45	5.39	5.74	5.96	5.84
ART INT	4.87	4.73	4.55	4.74	6.60	8.31	10.19	5.43	5.49	5.69	6.48	8.51	12.05	14.63
Koch	3.26	3.90	4.50	4.96	4.77	5.06	5.15	3.26	3.90	4.50	4.96	4.77	5.06	5.15
ATS	5.20	5.19	4.88	4.80	4.93	5.08	5.03	6.12	5.59	4.97	4.86	5.04	4.88	5.00



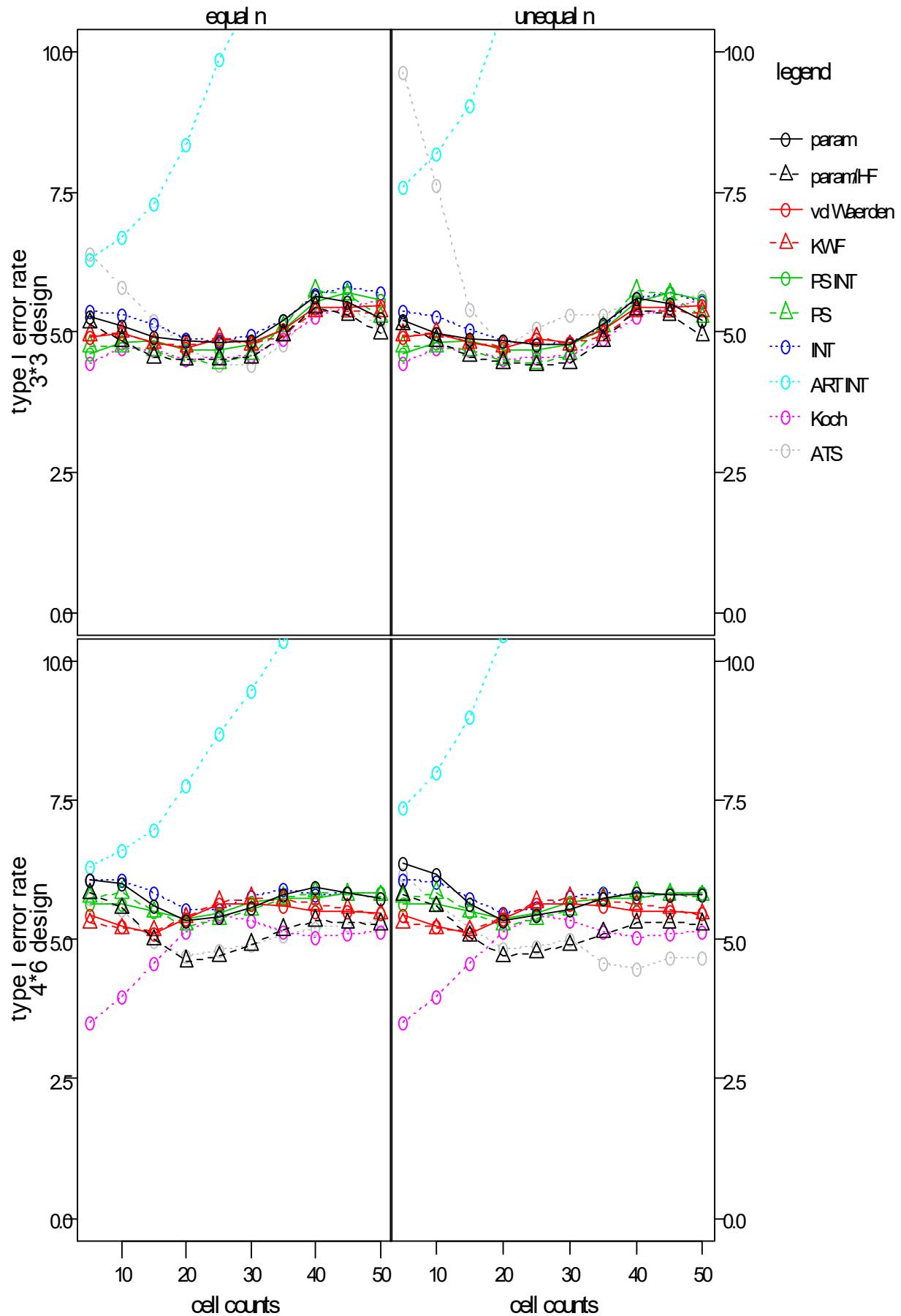
1. 4. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.60	5.36	5.06	4.95	4.96	5.76	6.12	5.38	5.30	5.08	4.93	4.84	5.69	6.12
parametric HF-adj	5.35	5.09	4.72	4.61	4.62	5.41	5.53	4.98	4.95	4.69	4.57	4.50	5.41	5.57
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	5.12	4.92	4.74	4.78	5.10	5.53	6.05	5.12	4.92	4.74	4.78	5.10	5.53	6.05
Puri & Sen	5.32	5.21	4.95	4.90	4.69	5.60	5.80	5.32	5.21	4.95	4.90	4.69	5.60	5.80
INT	5.74	5.30	4.89	4.86	5.17	5.58	6.01	5.60	5.37	5.05	4.99	5.20	5.55	6.12
ART INT	6.13	5.79	5.21	4.96	5.05	5.75	5.83	5.92	5.62	5.22	5.10	5.11	5.84	6.08
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.60	5.85	5.09	4.93	4.59	5.38	5.67	10.23	7.78	5.64	5.11	5.38	5.35	5.36
large design (4*6)														
parametric	6.03	6.24	5.86	5.59	5.53	5.77	5.70	6.10	6.17	5.83	5.65	5.56	5.83	5.75
parametric HF-adj	5.56	5.59	5.12	4.86	4.95	4.86	4.80	5.60	5.54	5.09	4.93	4.91	4.83	4.82
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	5.38	6.01	5.99	5.76	5.76	5.84	5.18	5.38	6.01	5.99	5.76	5.76	5.84	5.18
Puri & Sen	5.50	5.91	5.83	5.72	5.79	5.80	5.68	5.50	5.91	5.83	5.72	5.79	5.80	5.68
INT	5.83	6.36	6.21	5.93	5.89	5.82	5.18	5.74	6.27	6.17	5.93	5.87	5.89	5.21
ART INT	6.02	6.07	5.75	5.71	6.16	5.78	5.56	6.00	6.25	5.95	5.71	6.03	5.96	5.66
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.26	5.47	5.12	4.90	5.00	4.99	4.95	5.99	5.44	4.92	5.19	5.69	4.79	4.82



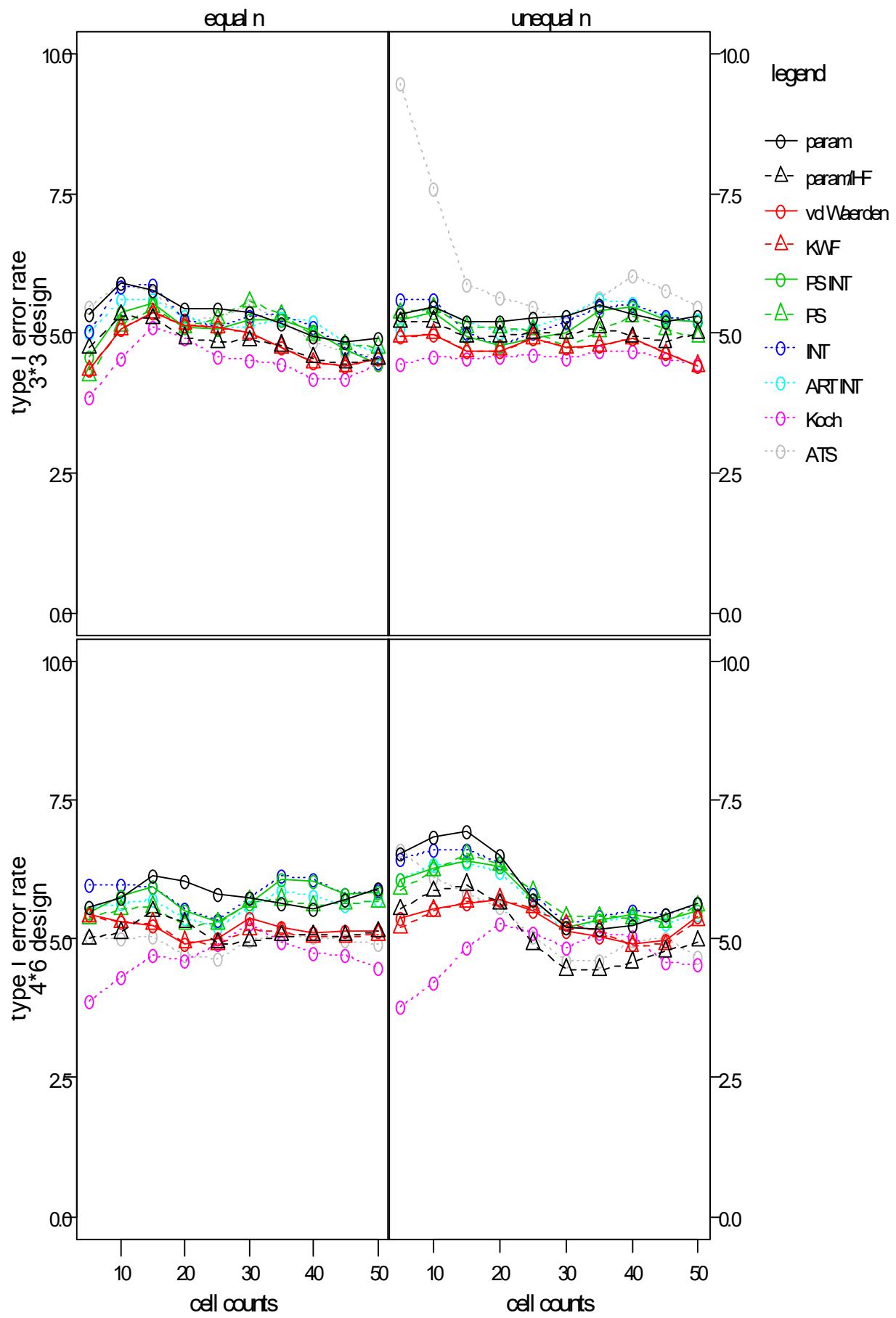
1. 4. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.28	5.10	4.91	4.83	4.85	5.65	5.23	5.22	4.99	4.86	4.85	4.78	5.59	5.20
parametric HF-adj	5.15	4.84	4.55	4.50	4.55	5.44	4.98	5.12	4.84	4.56	4.45	4.43	5.40	4.95
van der Waerden	4.92	4.99	4.80	4.70	4.81	5.43	5.47	4.92	4.99	4.80	4.70	4.81	5.43	5.47
KWF	4.95	4.99	4.80	4.75	4.77	5.36	5.35	4.95	4.99	4.80	4.75	4.77	5.36	5.35
Puri & Sen INT	4.60	4.81	4.84	4.66	4.76	5.54	5.58	4.60	4.81	4.84	4.66	4.76	5.54	5.58
Puri & Sen	4.75	4.75	4.66	4.49	4.59	5.74	5.26	4.75	4.75	4.66	4.49	4.59	5.74	5.26
INT	5.38	5.31	5.14	4.88	4.94	5.66	5.70	5.37	5.26	5.04	4.83	4.82	5.60	5.55
ART INT	6.30	6.69	7.29	8.35	10.93	13.76	14.85	7.58	8.18	9.05	10.71	15.09	18.30	21.71
Koch	4.46	4.70	4.66	4.51	4.59	5.27	5.57	4.46	4.70	4.66	4.51	4.59	5.27	5.57
ATS	6.39	5.81	5.21	4.72	4.40	5.40	5.12	9.64	7.60	5.39	4.71	5.30	5.56	5.62
large design (4*6)														
parametric	6.08	6.01	5.61	5.33	5.56	5.93	5.75	6.37	6.17	5.64	5.34	5.55	5.85	5.80
parametric HF-adj	5.82	5.56	5.00	4.61	4.91	5.34	5.27	5.80	5.60	5.05	4.70	4.89	5.30	5.28
van der Waerden	5.45	5.24	5.10	5.36	5.65	5.50	5.48	5.45	5.24	5.10	5.36	5.65	5.50	5.48
KWF	5.30	5.19	5.15	5.39	5.74	5.62	5.45	5.30	5.19	5.15	5.39	5.74	5.62	5.45
Puri & Sen INT	5.62	5.64	5.51	5.36	5.66	5.75	5.82	5.62	5.64	5.51	5.36	5.66	5.75	5.82
Puri & Sen	5.75	5.84	5.50	5.25	5.53	5.85	5.78	5.75	5.84	5.50	5.25	5.53	5.85	5.78
INT	6.07	6.06	5.84	5.53	5.77	5.81	5.85	6.08	6.05	5.75	5.47	5.78	5.78	5.82
ART INT	6.30	6.59	6.96	7.76	9.46	11.38	12.38	7.35	8.00	9.00	10.45	13.71	17.33	19.50
Koch	3.50	3.99	4.58	5.15	5.34	5.04	5.13	3.50	3.99	4.58	5.15	5.34	5.04	5.13
ATS	5.75	5.53	4.97	4.71	4.91	5.21	5.33	6.17	5.65	5.22	4.84	4.99	4.47	4.68



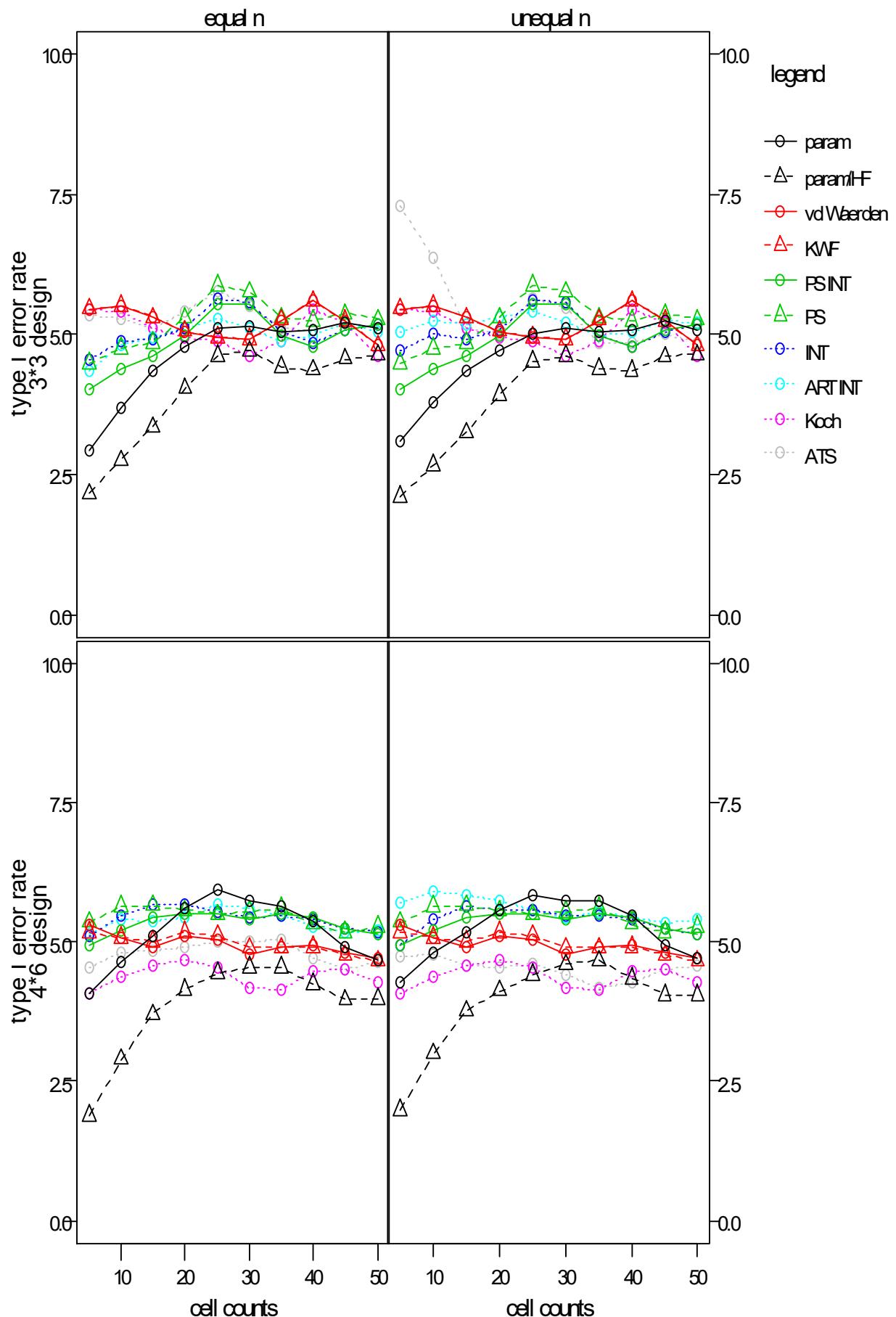
1. 4. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.89	5.76	5.45	5.38	4.94	4.92	5.35	5.46	5.20	5.19	5.31	5.33	5.32
parametric HF-adj	4.73	5.32	5.26	4.91	4.86	4.56	4.55	5.20	5.21	4.92	4.94	4.99	4.93	5.00
van der Waerden	4.33	5.07	5.36	5.15	5.01	4.47	4.55	4.93	4.99	4.67	4.69	4.75	4.90	4.42
KWF	4.33	5.07	5.36	5.15	5.01	4.47	4.55	4.93	4.99	4.67	4.69	4.75	4.90	4.42
Puri & Sen INT	4.58	5.38	5.53	5.12	5.24	5.05	4.45	5.25	5.36	4.93	4.76	5.01	5.48	5.20
Puri & Sen	4.23	5.14	5.45	5.10	5.56	4.96	4.75	5.36	5.45	5.10	5.09	4.75	5.29	4.92
INT	5.03	5.82	5.86	5.24	5.30	5.11	4.48	5.61	5.60	5.01	4.79	5.19	5.51	5.22
ART INT	5.01	5.59	5.61	5.29	5.10	5.20	4.65	5.06	5.47	5.22	5.00	5.29	5.55	5.23
Koch	3.85	4.56	5.11	4.92	4.52	4.19	4.44	4.43	4.58	4.55	4.59	4.56	4.68	4.43
ATS	5.46	5.89	5.74	5.24	5.49	4.85	4.58	9.48	7.59	5.85	5.62	5.16	6.04	5.46
large design (4*6)														
parametric	5.57	5.75	6.15	6.05	5.75	5.55	5.90	6.53	6.83	6.92	6.49	5.20	5.24	5.63
parametric HF-adj	5.00	5.11	5.49	5.29	4.95	5.06	5.13	5.53	5.86	5.97	5.62	4.45	4.58	4.95
van der Waerden	5.44	5.29	5.25	4.91	5.36	5.11	5.13	5.37	5.53	5.65	5.70	5.14	4.91	5.39
KWF	5.39	5.29	5.28	4.94	5.17	5.04	5.07	5.21	5.51	5.67	5.71	5.26	4.88	5.34
Puri & Sen INT	5.47	5.78	5.95	5.51	5.65	6.05	5.85	6.08	6.26	6.40	6.29	5.19	5.45	5.50
Puri & Sen	5.38	5.53	5.58	5.25	5.67	5.60	5.67	5.88	6.24	6.53	6.33	5.40	5.38	5.60
INT	5.97	5.96	5.95	5.54	5.72	6.06	5.87	6.45	6.60	6.60	6.38	5.28	5.51	5.62
ART INT	5.57	5.62	5.70	5.38	5.56	5.76	5.70	6.08	6.34	6.38	6.19	5.15	5.38	5.44
Koch	3.88	4.32	4.69	4.60	5.28	4.74	4.48	3.78	4.21	4.84	5.28	4.85	5.04	4.55
ATS	5.04	5.01	5.04	4.71	4.96	5.03	4.90	6.60	6.10	5.80	5.57	4.61	4.96	4.66



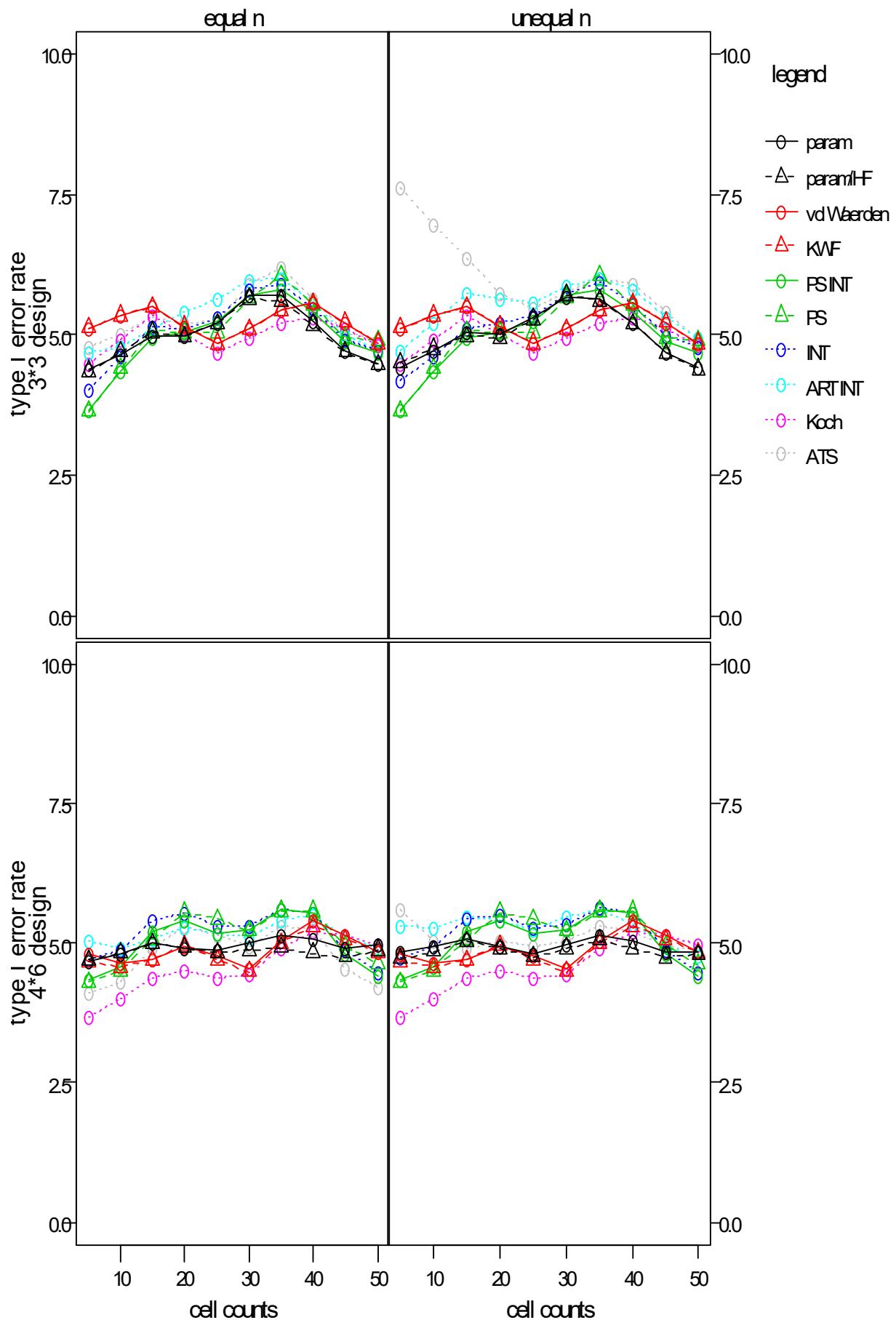
1. 4. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.93	3.70	4.34	4.79	5.15	5.06	5.10	3.09	3.79	4.35	4.71	5.12	5.07	5.08
parametric HF-adj	2.16	2.75	3.34	4.03	4.70	4.36	4.63	2.11	2.66	3.24	3.92	4.62	4.35	4.63
van der Waerden	5.45	5.50	5.29	5.05	4.91	5.59	4.80	5.45	5.50	5.29	5.05	4.91	5.59	4.80
KWF	5.45	5.50	5.29	5.05	4.91	5.59	4.80	5.45	5.50	5.29	5.05	4.91	5.59	4.80
Puri & Sen INT	4.01	4.38	4.60	4.96	5.52	4.76	5.17	4.01	4.38	4.60	4.96	5.52	4.76	5.17
Puri & Sen	4.48	4.75	4.85	5.30	5.76	5.24	5.26	4.48	4.75	4.85	5.30	5.76	5.24	5.26
INT	4.53	4.89	4.92	5.11	5.58	4.84	5.17	4.71	5.00	4.92	5.08	5.56	4.78	5.17
ART INT	4.36	4.81	4.95	5.10	5.09	4.99	5.03	5.05	5.24	5.17	5.30	5.19	5.04	5.21
Koch	5.45	5.40	5.09	4.93	4.61	5.44	4.61	5.45	5.40	5.09	4.93	4.61	5.44	4.61
ATS	5.35	5.28	5.09	5.40	5.51	5.06	5.10	7.29	6.35	5.09	5.01	5.46	4.85	4.83
large design (4*6)														
parametric	4.08	4.64	5.09	5.61	5.74	5.36	4.67	4.26	4.80	5.16	5.56	5.75	5.47	4.72
parametric HF-adj	1.88	2.89	3.70	4.14	4.54	4.24	3.98	1.99	2.99	3.77	4.12	4.60	4.35	4.05
van der Waerden	5.30	5.08	4.90	5.10	4.78	4.95	4.72	5.30	5.08	4.90	5.10	4.78	4.95	4.72
KWF	5.17	5.08	5.01	5.17	4.89	4.91	4.65	5.17	5.08	5.01	5.17	4.89	4.91	4.65
Puri & Sen INT	4.95	5.22	5.44	5.51	5.42	5.43	5.15	4.95	5.22	5.44	5.51	5.42	5.43	5.15
Puri & Sen	5.35	5.64	5.65	5.56	5.54	5.32	5.28	5.35	5.64	5.65	5.56	5.54	5.32	5.28
INT	5.11	5.47	5.67	5.66	5.44	5.39	5.17	4.95	5.42	5.62	5.56	5.47	5.41	5.13
ART INT	5.15	5.42	5.38	5.44	5.60	5.28	5.22	5.70	5.91	5.85	5.74	5.44	5.43	5.42
Koch	4.06	4.39	4.56	4.66	4.16	4.46	4.28	4.06	4.39	4.56	4.66	4.16	4.46	4.28
ATS	4.55	4.80	4.83	4.91	5.01	4.69	4.65	4.75	4.76	4.56	4.55	4.41	4.26	4.58



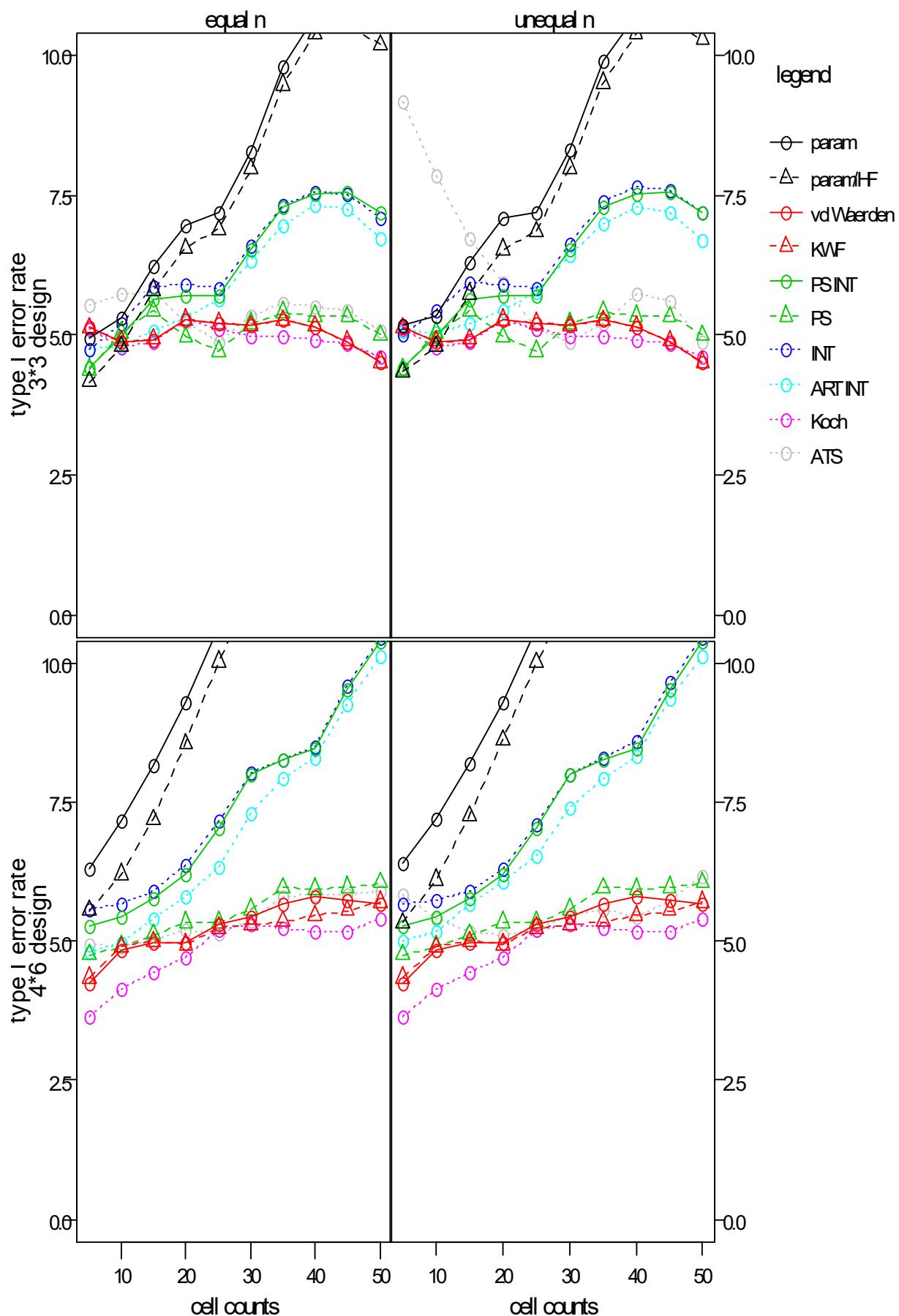
1. 4. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.38	4.64	4.97	4.96	5.70	5.25	4.48	4.40	4.72	5.03	5.00	5.67	5.21	4.40
parametric HF-adj	4.35	4.69	5.04	4.96	5.64	5.18	4.47	4.50	4.75	4.97	4.93	5.70	5.19	4.38
van der Waerden	5.12	5.34	5.49	5.14	5.10	5.56	4.85	5.12	5.34	5.49	5.14	5.10	5.56	4.85
KWF	5.12	5.34	5.49	5.14	5.10	5.56	4.85	5.12	5.34	5.49	5.14	5.10	5.56	4.85
Puri & Sen INT	3.65	4.34	4.95	5.03	5.69	5.41	4.68	3.65	4.34	4.95	5.03	5.69	5.41	4.68
Puri & Sen	3.63	4.39	5.06	5.04	5.65	5.53	4.90	3.63	4.39	5.06	5.04	5.65	5.53	4.90
INT	4.00	4.61	5.14	5.12	5.79	5.46	4.72	4.18	4.62	5.10	5.19	5.72	5.55	4.78
ART INT	4.68	4.79	5.09	5.39	5.95	5.56	4.72	4.70	5.22	5.74	5.65	5.85	5.79	4.95
Koch	4.48	4.90	5.34	5.00	4.93	5.30	4.80	4.48	4.90	5.34	5.00	4.93	5.30	4.80
ATS	4.77	5.01	5.31	5.21	5.89	5.65	4.92	7.62	6.95	6.35	5.74	5.75	5.89	4.91
large design (4*6)														
parametric	4.68	4.80	4.99	4.92	4.99	5.08	4.97	4.83	4.94	5.08	4.93	4.97	5.05	4.85
parametric HF-adj	4.70	4.82	5.00	4.92	4.86	4.82	4.87	4.72	4.85	5.03	4.89	4.91	4.89	4.80
van der Waerden	4.80	4.65	4.71	4.95	4.55	5.39	4.83	4.80	4.65	4.71	4.95	4.55	5.39	4.83
KWF	4.67	4.56	4.69	4.96	4.49	5.30	4.83	4.67	4.56	4.69	4.96	4.49	5.30	4.83
Puri & Sen INT	4.33	4.56	5.19	5.39	5.24	5.53	4.40	4.33	4.56	5.19	5.39	5.24	5.53	4.40
Puri & Sen	4.30	4.50	5.07	5.55	5.22	5.58	4.62	4.30	4.50	5.07	5.55	5.22	5.58	4.62
INT	4.72	4.86	5.40	5.55	5.29	5.54	4.48	4.74	4.93	5.45	5.51	5.33	5.55	4.48
ART INT	5.04	4.89	5.06	5.26	5.11	5.50	4.92	5.30	5.28	5.46	5.39	5.46	5.34	4.78
Koch	3.68	4.00	4.36	4.51	4.44	5.21	4.97	3.68	4.00	4.36	4.51	4.44	5.21	4.97
ATS	4.10	4.31	4.89	5.31	4.94	5.23	4.20	5.59	5.04	4.90	5.03	5.03	5.22	4.88



1. 4. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.95	5.31	6.24	6.97	8.28	10.69	10.68	5.17	5.35	6.31	7.08	8.30	10.71	10.65
parametric HF-adj	4.16	4.79	5.80	6.55	7.96	10.38	10.18	4.33	4.79	5.74	6.53	7.98	10.39	10.28
van der Waerden	5.13	4.89	4.92	5.28	5.16	5.15	4.51	5.13	4.89	4.92	5.28	5.16	5.15	4.51
KWF	5.13	4.89	4.92	5.28	5.16	5.15	4.51	5.13	4.89	4.92	5.28	5.16	5.15	4.51
Puri & Sen INT	4.41	4.96	5.64	5.71	6.53	7.53	7.18	4.41	4.96	5.64	5.71	6.53	7.53	7.18
Puri & Sen	4.38	5.04	5.42	4.97	5.21	5.34	5.00	4.38	5.04	5.42	4.97	5.21	5.34	5.00
INT	4.73	5.22	5.85	5.89	6.60	7.55	7.08	5.00	5.43	5.94	5.90	6.62	7.65	7.20
ART INT	4.75	4.80	5.06	5.32	6.34	7.33	6.73	5.07	5.03	5.20	5.45	6.44	7.30	6.68
Koch	5.12	4.79	4.88	5.26	4.96	4.90	4.60	5.12	4.79	4.88	5.26	4.96	4.90	4.60
ATS	5.53	5.73	5.78	5.24	5.33	5.51	5.08	9.18	7.85	6.74	5.94	4.86	5.74	4.89
large design (4*6)														
parametric	6.31	7.16	8.16	9.29	11.90	14.74	17.97	6.39	7.19	8.18	9.29	11.89	14.75	17.82
parametric HF-adj	5.55	6.20	7.19	8.55	11.25	13.94	17.07	5.33	6.11	7.26	8.61	11.20	13.95	17.14
van der Waerden	4.23	4.84	4.97	4.97	5.45	5.80	5.68	4.23	4.84	4.97	4.97	5.45	5.80	5.68
KWF	4.35	4.90	5.00	4.94	5.30	5.46	5.70	4.35	4.90	5.00	4.94	5.30	5.46	5.70
Puri & Sen INT	5.27	5.45	5.76	6.20	8.00	8.45	10.40	5.27	5.45	5.76	6.20	8.00	8.45	10.40
Puri & Sen	4.75	4.91	5.12	5.34	5.57	5.94	6.05	4.75	4.91	5.12	5.34	5.57	5.94	6.05
INT	5.58	5.66	5.91	6.36	8.03	8.50	10.44	5.68	5.72	5.90	6.31	8.00	8.59	10.47
ART INT	4.80	4.96	5.40	5.81	7.30	8.29	10.12	5.00	5.17	5.66	6.07	7.40	8.34	10.12
Koch	3.65	4.14	4.44	4.72	5.30	5.17	5.40	3.65	4.14	4.44	4.72	5.30	5.17	5.40
ATS	4.93	4.89	4.99	5.20	5.36	5.84	5.90	5.82	5.39	5.16	5.12	5.46	5.45	6.18

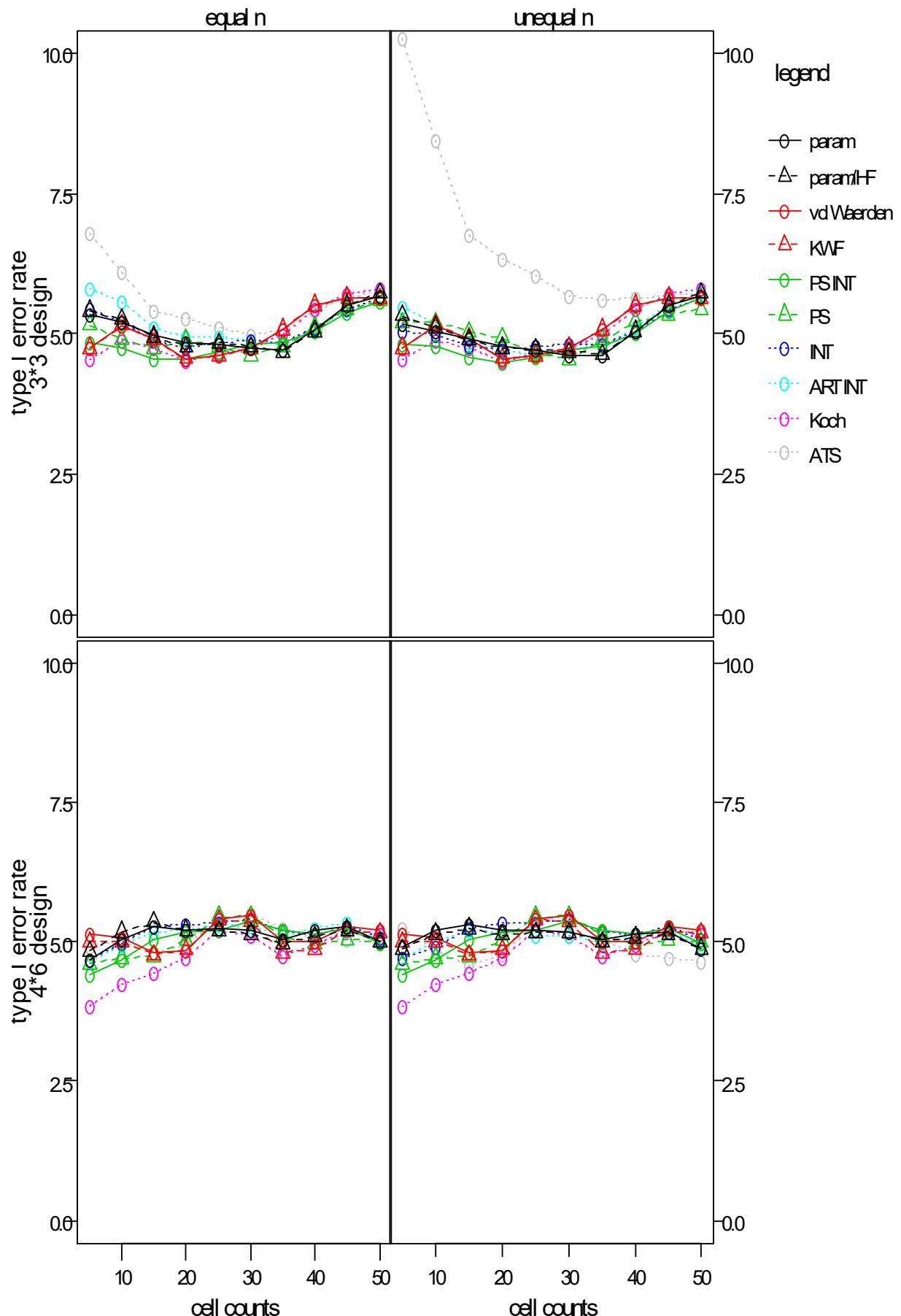


1. 5. Main effect B - A significant (effects $a_i=0.5*s$)

1. 5. 1. equal correlations on B ($r=0.3$)

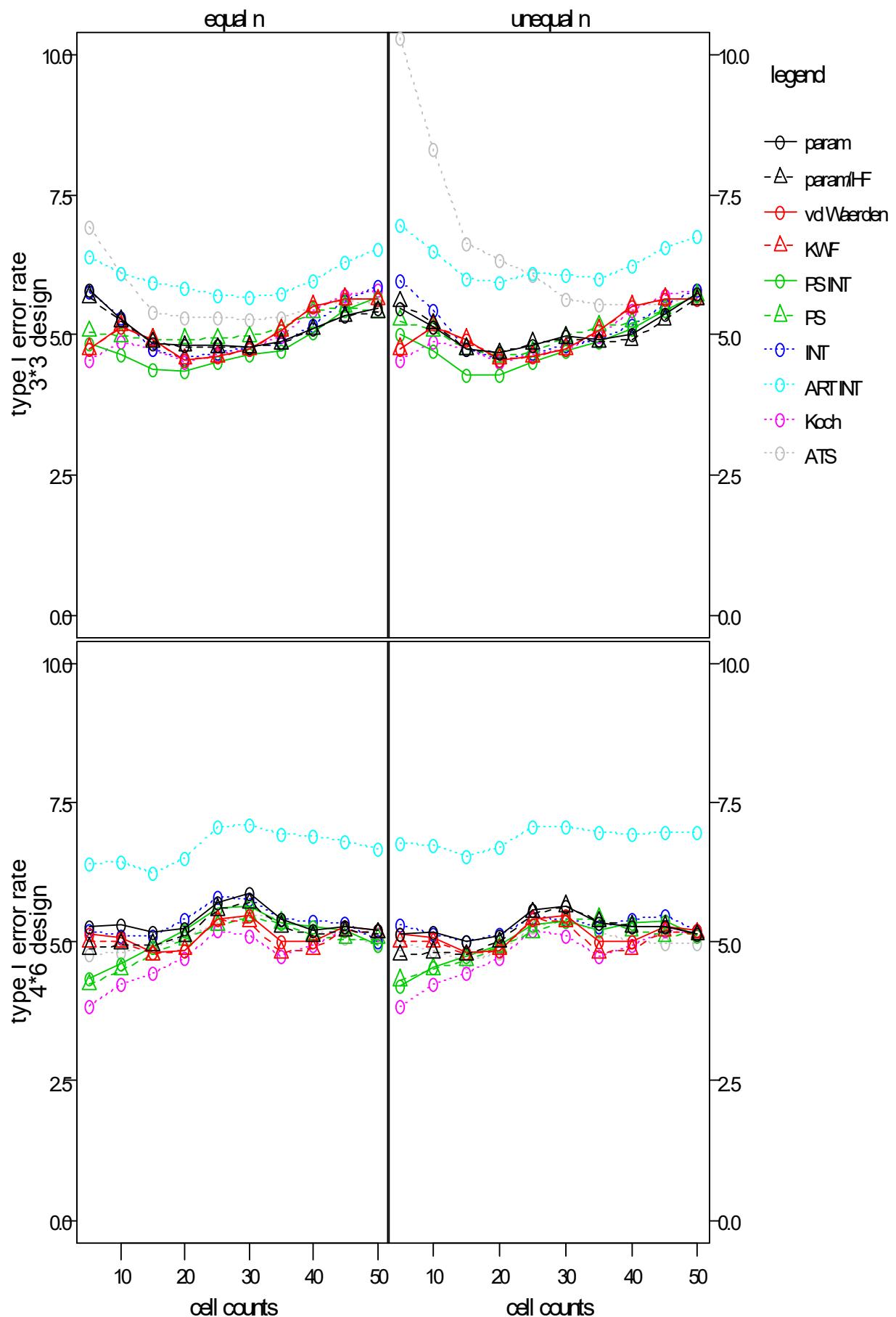
1. 5. 1. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.35	5.20	4.99	4.85	4.73	5.06	5.68	5.18	5.04	4.91	4.78	4.62	5.03	5.68
parametric HF-adj	5.40	5.25	4.94	4.76	4.76	5.04	5.72	5.32	5.11	4.89	4.74	4.66	5.04	5.72
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.85	4.75	4.56	4.53	4.80	5.05	5.57	4.80	4.79	4.58	4.49	4.70	5.01	5.62
Puri & Sen	5.15	4.90	4.75	4.88	4.62	5.11	5.58	5.20	5.20	5.03	4.92	4.53	5.22	5.42
INT	5.43	5.22	4.86	4.75	4.86	5.10	5.62	5.05	4.97	4.78	4.71	4.80	5.05	5.63
ART INT	5.80	5.58	5.12	4.95	4.86	5.06	5.65	5.48	5.16	4.83	4.67	4.74	5.09	5.72
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.80	6.11	5.41	5.26	4.96	5.39	5.75	10.26	8.44	6.76	6.33	5.67	5.65	5.72
large design (4*6)														
parametric	4.68	5.04	5.28	5.21	5.20	5.19	5.00	4.91	5.19	5.30	5.20	5.18	5.15	4.88
parametric HF-adj	4.83	5.17	5.35	5.21	5.14	5.10	5.00	4.86	5.14	5.24	5.12	5.16	5.08	4.88
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	4.42	4.66	5.03	5.16	5.36	5.15	4.98	4.42	4.66	5.03	5.16	5.36	5.15	4.98
Puri & Sen	4.60	4.71	4.74	5.03	5.46	4.95	5.00	4.60	4.71	4.74	5.03	5.46	4.95	5.00
INT	4.68	4.97	5.27	5.31	5.41	5.11	5.08	4.70	4.90	5.24	5.34	5.39	5.15	5.05
ART INT	4.65	4.94	5.16	5.20	5.26	5.25	5.05	4.70	4.99	5.20	5.16	5.09	5.10	4.91
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.90	4.99	4.81	4.94	5.50	5.05	4.98	5.24	4.83	4.59	4.78	5.47	4.78	4.65



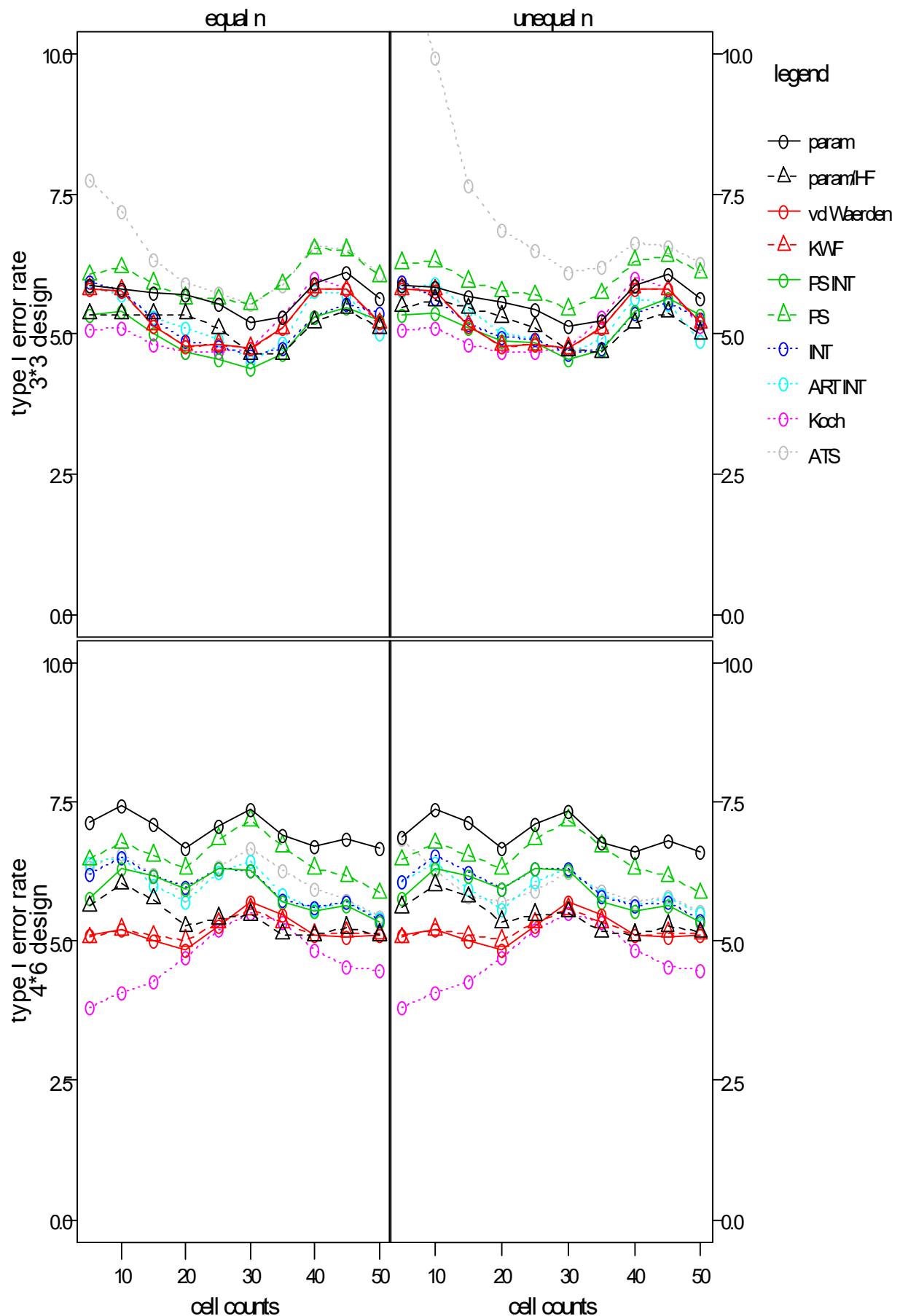
1. 5. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.79	5.26	4.84	4.82	4.79	5.11	5.47	5.47	5.14	4.75	4.68	4.96	5.00	5.72
parametric HF-adj	5.67	5.24	4.86	4.79	4.78	5.10	5.40	5.58	5.20	4.75	4.67	4.95	4.91	5.62
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.85	4.64	4.38	4.36	4.64	5.04	5.68	5.02	4.71	4.29	4.28	4.72	5.10	5.69
Puri & Sen	5.05	4.97	4.91	4.92	4.97	5.40	5.40	5.25	5.07	4.75	4.60	4.97	5.22	5.70
INT	5.75	5.29	4.74	4.57	4.76	5.18	5.87	5.97	5.45	4.73	4.53	4.80	5.18	5.79
ART INT	6.38	6.10	5.93	5.84	5.67	5.96	6.52	6.95	6.49	5.99	5.94	6.07	6.24	6.77
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.92	6.10	5.41	5.31	5.28	5.50	5.53	10.30	8.30	6.61	6.32	5.65	5.54	5.69
large design (4*6)														
parametric	5.27	5.30	5.17	5.25	5.86	5.20	5.20	5.15	5.16	4.99	5.10	5.63	5.28	5.13
parametric HF-adj	4.88	4.95	4.94	5.10	5.69	5.10	5.15	4.75	4.81	4.76	4.99	5.64	5.28	5.13
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	4.33	4.62	4.89	5.21	5.65	5.26	4.93	4.20	4.53	4.74	4.95	5.36	5.34	5.10
Puri & Sen	4.23	4.49	4.78	5.04	5.45	5.12	5.05	4.31	4.51	4.67	4.90	5.40	5.19	5.13
INT	5.20	5.10	5.09	5.40	5.76	5.36	5.01	5.32	5.15	4.99	5.15	5.42	5.39	5.20
ART INT	6.40	6.44	6.25	6.49	7.09	6.89	6.68	6.75	6.74	6.54	6.69	7.07	6.92	6.98
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.77	4.81	4.90	5.06	5.51	5.21	4.98	4.98	4.84	4.65	4.80	5.41	5.01	4.97



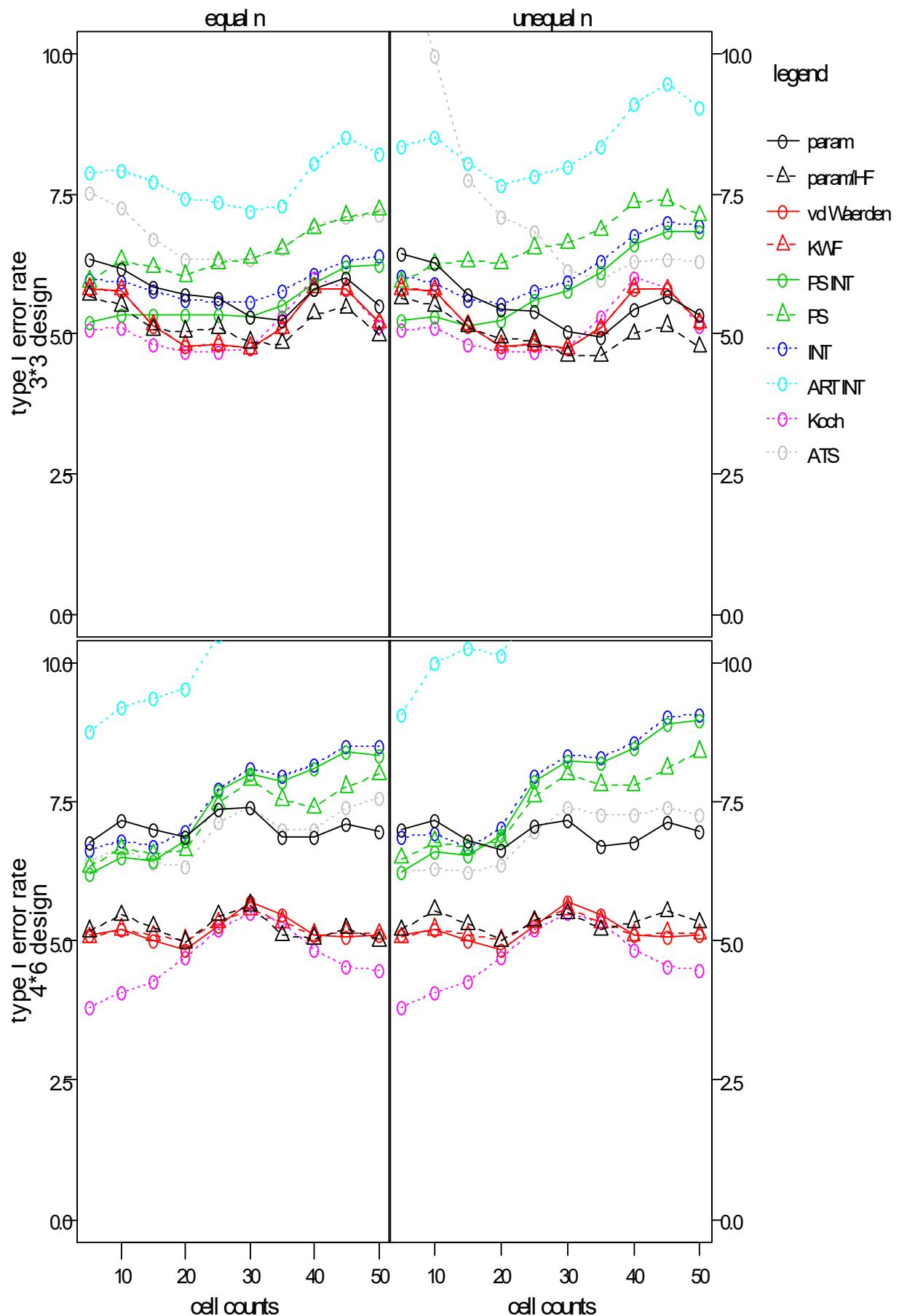
1. 5. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.88	5.80	5.72	5.70	5.22	5.90	5.64	5.85	5.82	5.66	5.56	5.15	5.86	5.63
parametric HF-adj	5.35	5.35	5.35	5.35	4.64	5.21	5.11	5.48	5.60	5.46	5.31	4.70	5.20	5.01
van der Waerden	5.80	5.78	5.15	4.79	4.74	5.81	5.20	5.80	5.78	5.15	4.79	4.74	5.81	5.20
KWF	5.80	5.78	5.15	4.79	4.74	5.81	5.20	5.80	5.78	5.15	4.79	4.74	5.81	5.20
Puri & Sen INT	5.35	5.39	5.00	4.66	4.38	5.29	5.23	5.35	5.36	5.10	4.89	4.56	5.40	5.33
Puri & Sen	6.05	6.19	5.90	5.64	5.54	6.51	6.03	6.26	6.30	5.94	5.75	5.44	6.31	6.08
INT	5.92	5.78	5.26	4.89	4.60	5.31	5.38	5.93	5.64	5.16	4.95	4.65	5.38	5.26
ART INT	5.82	5.70	5.29	5.10	4.51	5.75	5.01	5.76	5.90	5.42	5.00	4.65	5.64	4.88
Koch	5.06	5.09	4.80	4.67	4.74	5.99	5.13	5.06	5.09	4.80	4.67	4.74	5.99	5.13
ATS	7.75	7.20	6.34	5.89	5.55	6.55	6.06	11.94	9.94	7.65	6.84	6.08	6.61	6.26
large design (4*6)														
parametric	7.13	7.44	7.09	6.66	7.36	6.69	6.66	6.88	7.36	7.12	6.66	7.33	6.60	6.61
parametric HF-adj	5.63	6.03	5.75	5.26	5.47	5.09	5.11	5.61	6.01	5.79	5.34	5.52	5.11	5.16
van der Waerden	5.10	5.20	5.01	4.85	5.70	5.10	5.12	5.10	5.20	5.01	4.85	5.70	5.10	5.12
KWF	5.06	5.21	5.10	5.01	5.58	5.11	5.13	5.06	5.21	5.10	5.01	5.58	5.11	5.13
Puri & Sen INT	5.76	6.31	6.17	5.95	6.26	5.54	5.35	5.76	6.31	6.17	5.95	6.26	5.54	5.35
Puri & Sen	6.46	6.76	6.54	6.30	7.17	6.31	5.86	6.46	6.76	6.54	6.30	7.17	6.31	5.86
INT	6.21	6.51	6.17	5.96	6.28	5.59	5.38	6.08	6.55	6.24	5.95	6.31	5.64	5.36
ART INT	6.41	6.51	6.00	5.71	6.44	5.58	5.41	6.08	6.39	5.93	5.58	6.30	5.64	5.51
Koch	3.80	4.08	4.29	4.69	5.50	4.83	4.47	3.80	4.08	4.29	4.69	5.50	4.83	4.47
ATS	6.33	6.56	6.20	5.85	6.66	5.94	5.45	6.84	6.28	5.81	5.69	6.22	5.69	5.55



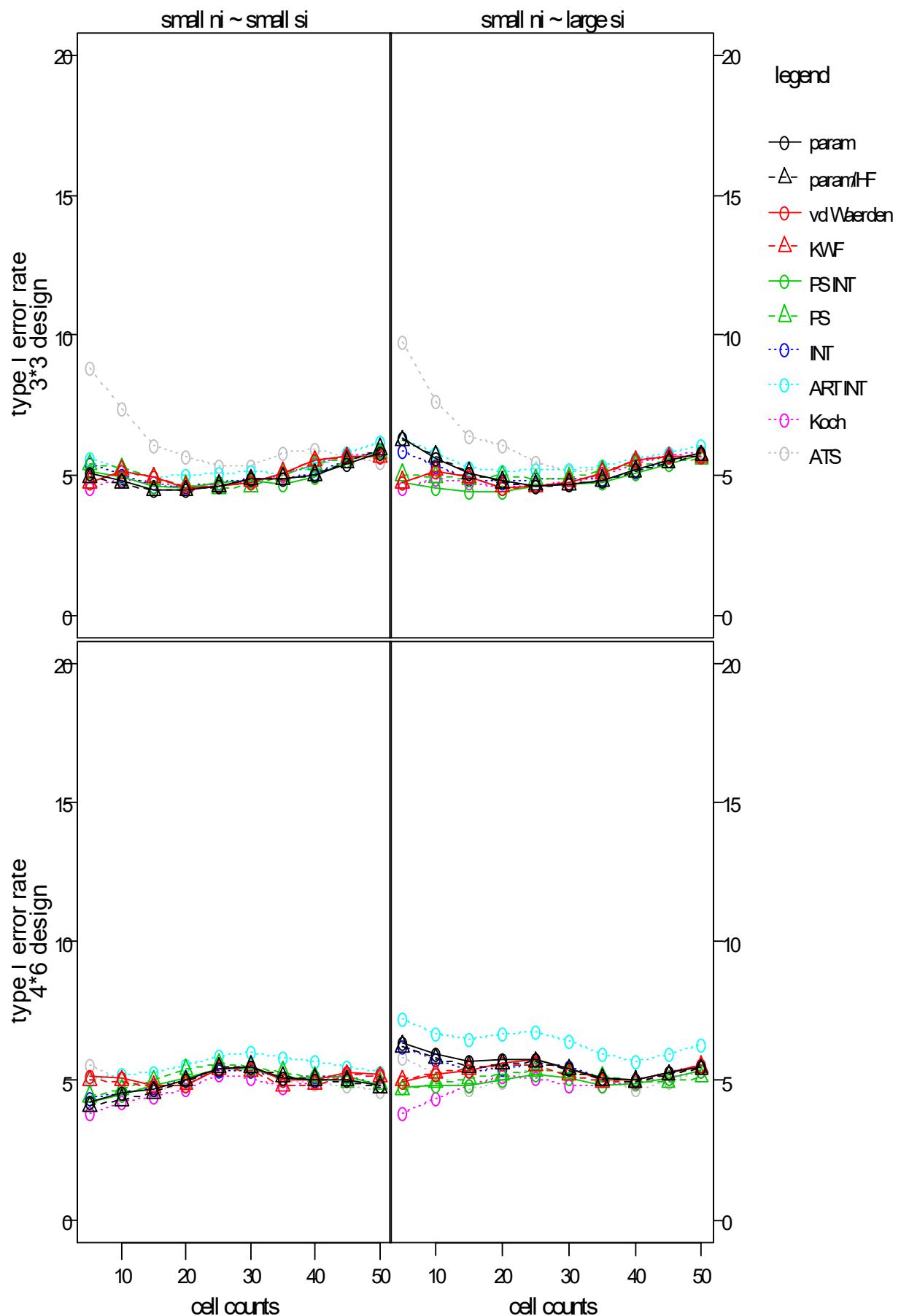
1. 5. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.33	6.16	5.84	5.71	5.29	5.81	5.51	6.42	6.26	5.70	5.44	5.04	5.44	5.33
parametric HF-adj	5.68	5.50	5.08	5.04	4.84	5.35	4.96	5.62	5.51	5.12	4.92	4.62	5.00	4.76
van der Waerden	5.80	5.78	5.15	4.79	4.74	5.81	5.20	5.80	5.78	5.15	4.79	4.74	5.81	5.20
KWF	5.80	5.78	5.15	4.79	4.74	5.81	5.20	5.80	5.78	5.15	4.79	4.74	5.81	5.20
Puri & Sen INT	5.22	5.34	5.34	5.34	5.30	5.91	6.22	5.23	5.29	5.14	5.25	5.78	6.58	6.82
Puri & Sen	5.93	6.31	6.19	6.03	6.34	6.88	7.20	5.91	6.25	6.29	6.25	6.61	7.34	7.11
INT	5.95	5.94	5.76	5.60	5.56	6.06	6.40	6.03	5.90	5.59	5.54	5.94	6.76	6.93
ART INT	7.87	7.91	7.71	7.41	7.20	8.06	8.21	8.33	8.52	8.05	7.65	7.99	9.11	9.03
Koch	5.06	5.09	4.80	4.67	4.74	5.99	5.13	5.06	5.09	4.80	4.67	4.74	5.99	5.13
ATS	7.52	7.26	6.70	6.32	6.34	6.91	7.12	11.91	9.97	7.75	7.08	6.14	6.29	6.30
large design (4*6)														
parametric	6.76	7.16	7.00	6.88	7.41	6.85	6.95	7.00	7.15	6.81	6.64	7.16	6.78	6.98
parametric HF-adj	5.18	5.46	5.25	4.97	5.64	5.04	5.00	5.20	5.55	5.30	4.99	5.49	5.34	5.33
van der Waerden	5.10	5.20	5.01	4.85	5.70	5.10	5.12	5.10	5.20	5.01	4.85	5.70	5.10	5.12
KWF	5.06	5.21	5.10	5.01	5.58	5.11	5.13	5.06	5.21	5.10	5.01	5.58	5.11	5.13
Puri & Sen INT	6.20	6.49	6.44	6.79	8.00	8.10	8.32	6.23	6.60	6.53	6.91	8.24	8.46	8.97
Puri & Sen	6.33	6.65	6.56	6.62	7.90	7.39	7.98	6.48	6.78	6.65	6.79	7.99	7.78	8.40
INT	6.63	6.81	6.70	6.95	8.10	8.16	8.50	6.86	6.94	6.66	7.03	8.34	8.57	9.07
ART INT	8.76	9.19	9.36	9.54	11.38	11.90	12.40	9.06	10.00	10.26	10.11	12.01	12.62	13.42
Koch	3.80	4.08	4.29	4.69	5.50	4.83	4.47	3.80	4.08	4.29	4.69	5.50	4.83	4.47
ATS	6.45	6.66	6.39	6.35	7.41	7.01	7.57	6.25	6.31	6.22	6.36	7.39	7.26	7.26



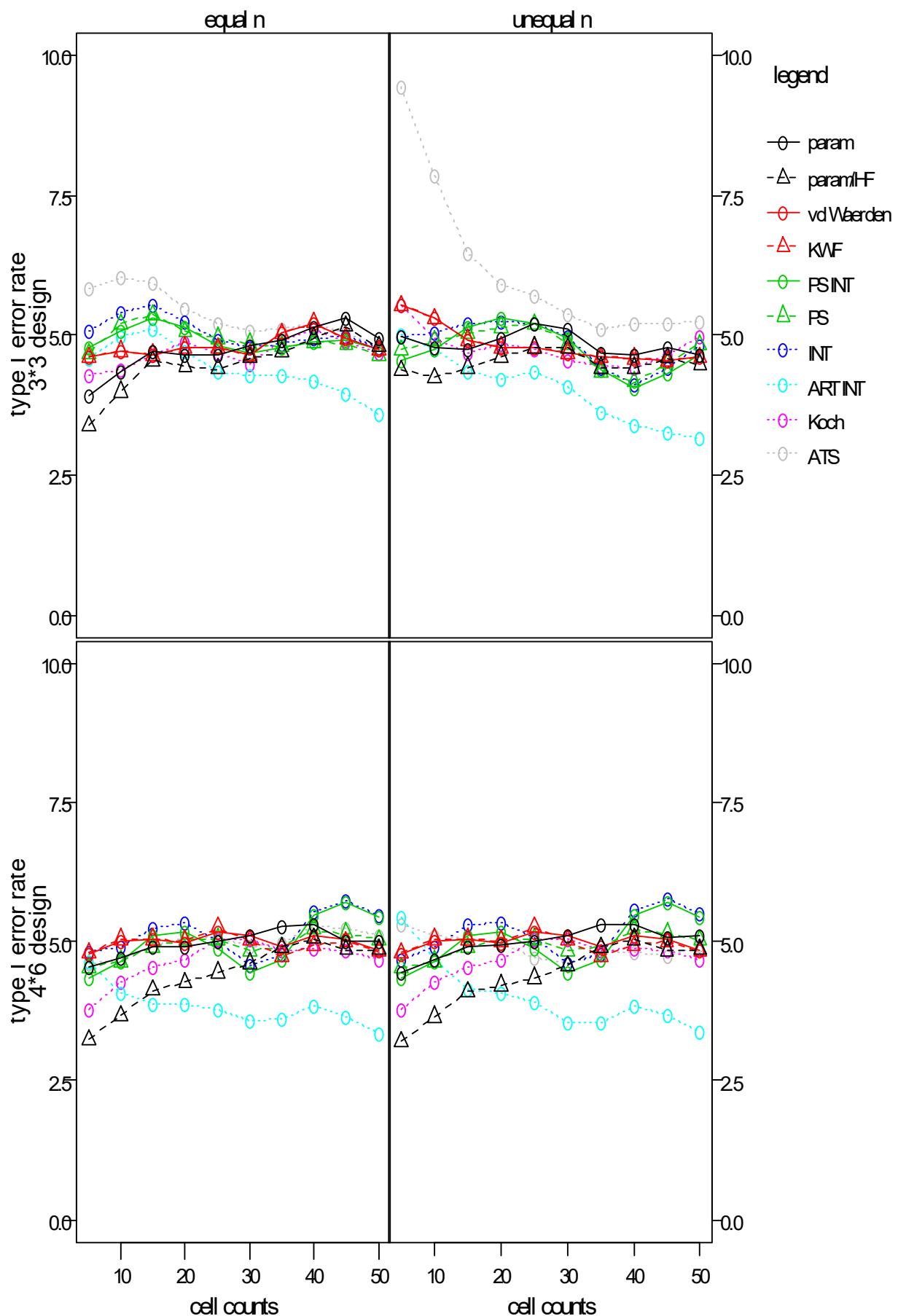
1. 5. 1. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.07	4.78	4.49	4.44	4.83	4.96	5.79	6.30	5.60	5.06	4.78	4.66	5.16	5.77
parametric HF-adj	4.90	4.69	4.44	4.44	4.83	5.01	5.92	6.22	5.65	5.07	4.74	4.66	5.14	5.70
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	5.15	4.94	4.61	4.53	4.79	4.95	5.85	4.70	4.54	4.38	4.42	4.67	5.04	5.70
Puri & Sen	5.37	5.24	4.86	4.62	4.60	5.36	5.74	5.00	4.93	4.88	4.96	4.86	5.38	5.60
INT	5.40	5.01	4.61	4.58	4.89	5.05	5.95	5.85	5.31	4.85	4.76	4.86	5.15	5.74
ART INT	5.62	5.19	4.94	4.97	5.15	5.25	6.17	6.32	5.80	5.26	5.12	5.22	5.56	6.07
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	8.84	7.36	6.06	5.66	5.33	5.90	5.47	9.75	7.66	6.38	6.04	5.15	5.46	5.82
large design (4*6)														
parametric	4.25	4.53	4.71	5.00	5.47	5.05	4.83	6.37	5.96	5.69	5.74	5.45	5.05	5.47
parametric HF-adj	4.08	4.31	4.58	4.99	5.50	5.03	4.76	6.22	5.81	5.50	5.58	5.39	4.97	5.40
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	4.96	5.24	5.39	5.65	5.43	5.03	5.53
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.01	5.26	5.41	5.58	5.19	4.94	5.50
Puri & Sen INT	4.20	4.51	4.82	5.08	5.41	5.12	4.86	4.77	4.85	4.86	5.01	5.10	4.88	5.33
Puri & Sen	4.43	4.67	5.00	5.40	5.49	5.12	4.90	4.68	4.92	5.09	5.21	5.31	4.99	5.12
INT	4.35	4.54	4.75	5.03	5.35	5.16	4.83	6.22	5.76	5.38	5.44	5.49	5.01	5.57
ART INT	5.05	5.20	5.31	5.53	6.00	5.67	5.28	7.19	6.69	6.46	6.71	6.40	5.68	6.32
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.81	4.34	4.81	5.19	4.80	4.94	5.34
ATS	5.54	5.04	4.64	4.88	5.43	4.92	4.62	5.82	5.24	4.69	4.97	5.50	4.70	5.35



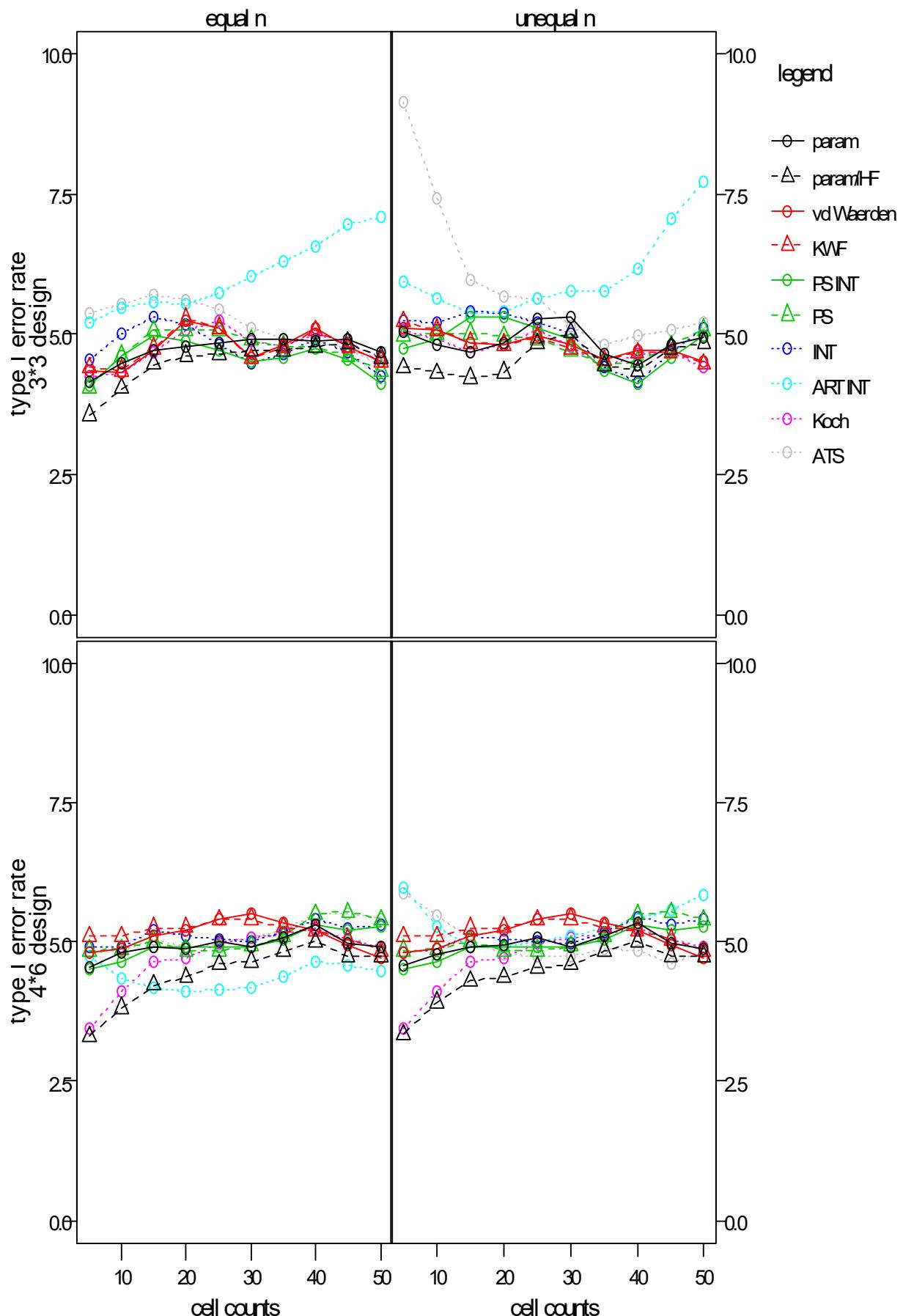
1. 5. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.93	4.36	4.70	4.65	4.81	5.14	4.94	4.99	4.76	4.75	4.95	5.11	4.65	4.63
parametric HF-adj	3.38	3.99	4.53	4.45	4.59	4.95	4.79	4.37	4.24	4.41	4.61	4.76	4.42	4.48
van der Waerden	4.60	4.71	4.65	4.78	4.65	5.22	4.73	5.52	5.30	4.91	4.78	4.68	4.58	4.60
KWF	4.60	4.71	4.65	4.78	4.65	5.22	4.73	5.52	5.30	4.91	4.78	4.68	4.58	4.60
Puri & Sen INT	4.78	5.07	5.32	5.14	4.67	4.86	4.75	4.55	4.75	5.15	5.29	4.95	4.06	4.63
Puri & Sen	4.66	5.19	5.36	5.06	4.84	4.86	4.65	4.73	4.89	5.03	5.14	4.84	4.16	4.83
INT	5.07	5.40	5.53	5.24	4.76	4.94	4.78	4.98	5.04	5.20	5.24	4.96	4.12	4.80
ART INT	4.58	4.97	5.10	4.70	4.28	4.17	3.58	5.02	4.74	4.33	4.22	4.08	3.38	3.17
Koch	4.28	4.38	4.64	4.89	4.49	5.12	4.66	5.54	4.93	4.68	4.83	4.54	4.42	4.97
ATS	5.82	6.04	5.94	5.48	5.06	5.19	4.78	9.44	7.86	6.45	5.89	5.38	5.22	5.25
large design (4*6)														
parametric	4.53	4.69	4.91	4.92	5.09	5.30	5.00	4.45	4.66	4.91	4.94	5.10	5.32	5.09
parametric HF-adj	3.23	3.66	4.12	4.26	4.61	5.05	4.85	3.20	3.64	4.10	4.21	4.56	5.04	4.85
van der Waerden	4.77	5.00	5.04	4.96	5.09	5.09	4.83	4.77	5.00	5.04	4.96	5.09	5.09	4.83
KWF	4.80	5.04	5.04	5.01	5.02	4.93	4.82	4.80	5.04	5.04	5.01	5.02	4.93	4.82
Puri & Sen INT	4.35	4.65	5.11	5.18	4.44	5.48	5.43	4.35	4.65	5.11	5.18	4.44	5.48	5.43
Puri & Sen	4.53	4.64	4.90	5.03	4.83	5.22	5.03	4.53	4.64	4.90	5.03	4.83	5.22	5.03
INT	4.80	4.90	5.25	5.33	4.57	5.54	5.46	4.67	4.90	5.30	5.35	4.62	5.56	5.51
ART INT	4.64	4.08	3.89	3.89	3.58	3.84	3.35	5.44	4.67	4.14	4.07	3.56	3.84	3.37
Koch	3.76	4.28	4.54	4.67	5.04	4.88	4.68	3.76	4.28	4.54	4.67	5.04	4.88	4.68
ATS	4.62	4.67	4.92	5.06	4.91	5.28	5.12	5.30	5.09	5.05	4.96	4.62	4.79	4.94



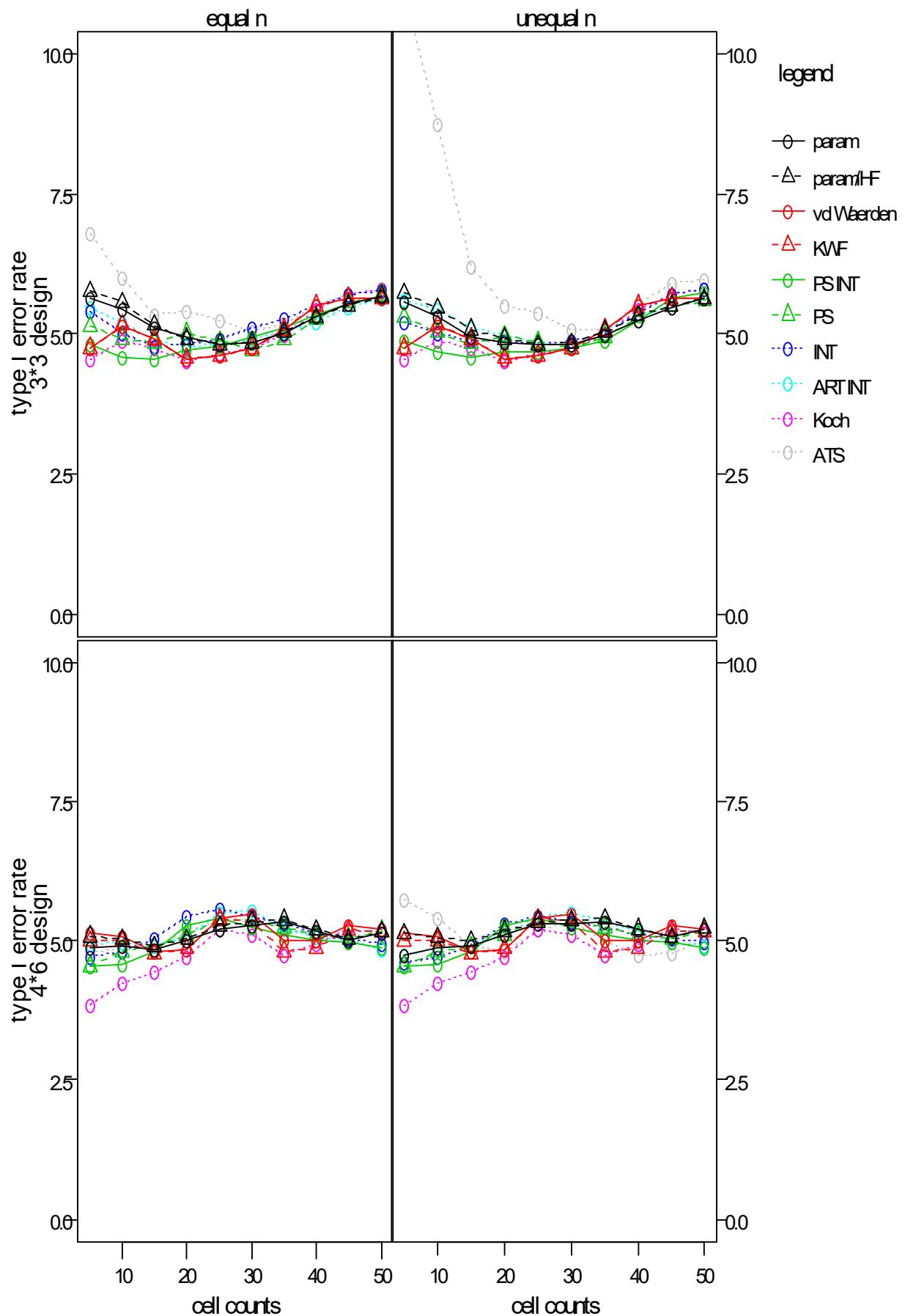
1. 5. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.16	4.49	4.72	4.79	4.90	4.89	4.66	5.05	4.81	4.69	4.84	5.30	4.46	4.93
parametric HF-adj	3.56	4.03	4.46	4.61	4.70	4.77	4.58	4.40	4.30	4.22	4.31	5.02	4.33	4.85
van der Waerden	4.34	4.30	4.70	5.25	4.58	5.10	4.52	5.12	5.08	4.85	4.81	4.80	4.70	4.50
KWF	4.40	4.35	4.75	5.28	4.56	5.06	4.52	5.22	5.08	4.84	4.81	4.75	4.67	4.47
Puri & Sen INT	4.08	4.60	4.97	4.89	4.51	4.74	4.10	4.75	4.92	5.30	5.29	4.92	4.11	4.98
Puri & Sen	4.05	4.62	5.06	5.08	4.89	4.78	4.35	4.97	5.00	5.01	4.96	4.69	4.51	5.08
INT	4.55	5.00	5.29	5.16	4.47	4.90	4.25	5.25	5.22	5.40	5.38	5.00	4.16	5.10
ART INT	5.20	5.47	5.57	5.52	6.04	6.56	7.08	5.93	5.64	5.36	5.40	5.78	6.16	7.70
Koch	4.24	4.31	4.66	5.08	4.88	5.01	4.57	5.08	4.90	4.69	4.81	4.76	4.64	4.41
ATS	5.37	5.54	5.70	5.59	5.11	4.88	4.46	9.14	7.43	5.95	5.68	5.14	4.99	5.22
large design (4*6)														
parametric	4.53	4.79	4.90	4.88	4.89	5.31	4.90	4.57	4.76	4.90	4.94	4.91	5.35	4.87
parametric HF-adj	3.30	3.81	4.22	4.36	4.64	5.00	4.74	3.33	3.91	4.30	4.36	4.59	5.01	4.74
van der Waerden	4.79	4.86	5.10	5.20	5.51	5.20	4.72	4.79	4.86	5.10	5.20	5.51	5.20	4.72
KWF	5.10	5.10	5.24	5.25	5.41	5.21	4.83	5.10	5.10	5.24	5.25	5.41	5.21	4.83
Puri & Sen INT	4.52	4.64	4.92	4.89	4.89	5.31	5.27	4.52	4.64	4.92	4.89	4.89	5.31	5.27
Puri & Sen	4.84	4.86	5.01	4.84	4.92	5.50	5.40	4.84	4.86	5.01	4.84	4.92	5.50	5.40
INT	4.89	4.92	5.21	5.11	5.01	5.41	5.29	4.82	4.88	5.10	5.03	4.96	5.43	5.40
ART INT	4.75	4.35	4.16	4.11	4.19	4.64	4.48	5.97	5.26	4.89	4.90	5.11	5.41	5.85
Koch	3.45	4.12	4.65	4.71	5.07	5.25	4.90	3.45	4.12	4.65	4.71	5.07	5.25	4.90
ATS	4.79	4.84	5.03	4.89	5.06	5.51	5.42	5.87	5.46	5.04	4.78	4.74	4.83	4.84



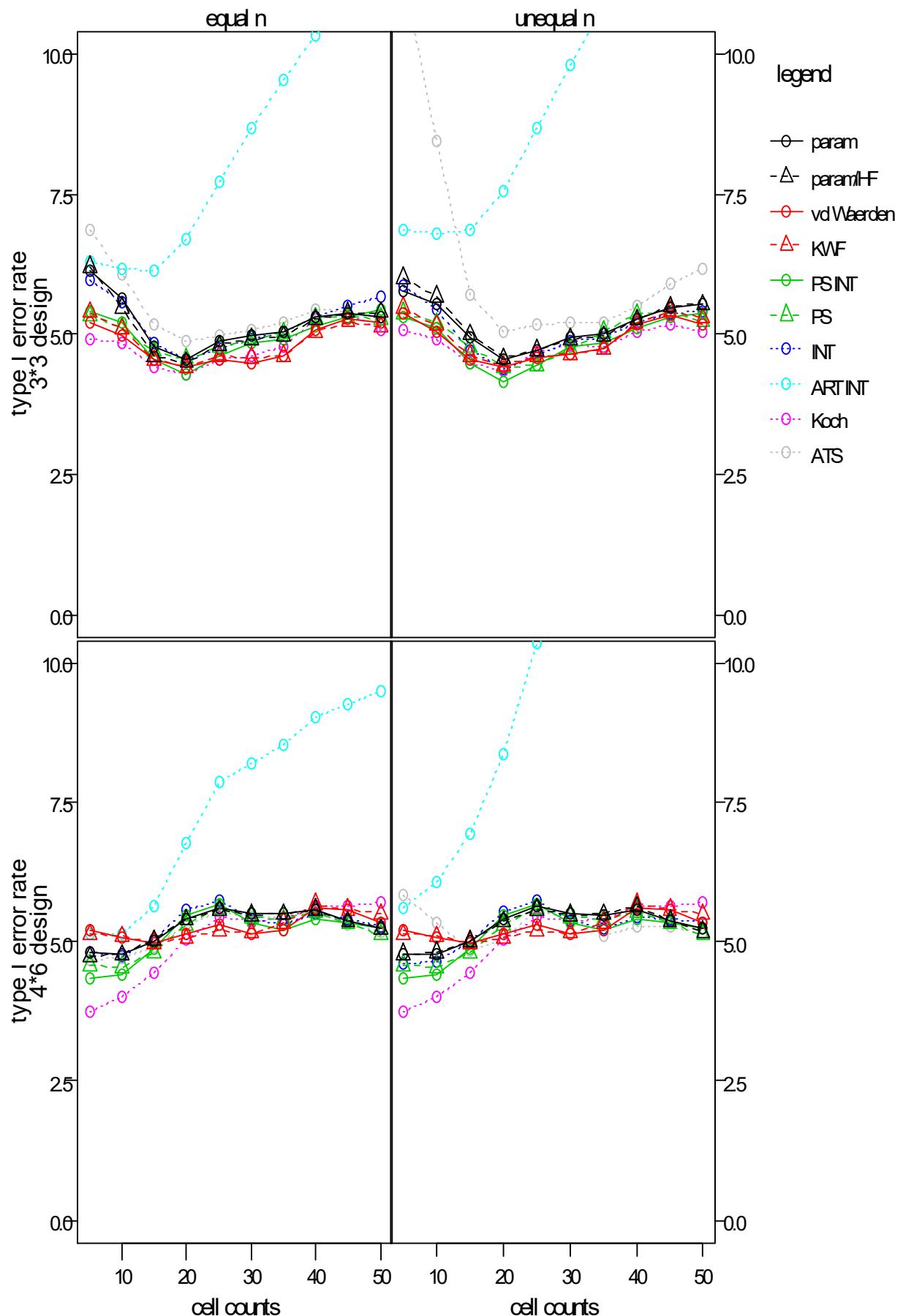
1. 5. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.62	5.44	5.09	4.93	4.83	5.30	5.68	5.57	5.32	4.95	4.85	4.81	5.25	5.62
parametric HF-adj	5.75	5.56	5.15	4.91	4.84	5.30	5.67	5.72	5.45	5.07	4.91	4.83	5.33	5.62
van der Waerden	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.74	5.15	4.91	4.56	4.75	5.50	5.63	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.82	4.58	4.54	4.70	4.95	5.34	5.67	4.87	4.67	4.59	4.66	4.75	5.25	5.72
Puri & Sen	5.13	4.91	4.84	5.01	4.70	5.26	5.70	5.30	5.02	4.82	4.96	4.74	5.29	5.58
INT	5.40	5.01	4.76	4.80	5.12	5.49	5.77	5.20	5.00	4.88	4.86	4.89	5.36	5.80
ART INT	5.47	5.20	4.86	4.79	4.92	5.21	5.62	5.60	5.45	5.10	4.98	4.79	5.33	5.62
Koch	4.56	4.89	4.74	4.51	4.74	5.42	5.80	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.80	5.99	5.35	5.40	5.03	5.50	5.80	11.15	8.74	6.21	5.49	5.06	5.54	5.97
large design (4*6)														
parametric	4.87	4.90	4.85	4.99	5.26	5.16	5.14	4.75	4.86	4.90	5.12	5.30	5.19	5.22
parametric HF-adj	5.07	5.03	4.90	5.03	5.35	5.19	5.15	5.13	5.05	5.00	5.17	5.36	5.21	5.22
van der Waerden	5.13	5.08	4.80	4.85	5.46	5.00	5.21	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	5.00	4.99	4.76	4.85	5.35	4.86	5.15	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	4.53	4.59	4.81	5.26	5.24	4.99	4.88	4.53	4.59	4.81	5.26	5.24	4.99	4.88
Puri & Sen	4.55	4.81	4.90	5.11	5.36	5.09	5.17	4.55	4.81	4.90	5.11	5.36	5.09	5.17
INT	4.70	4.81	5.04	5.45	5.44	5.15	4.95	4.60	4.71	4.92	5.31	5.34	5.10	4.97
ART INT	4.93	4.97	4.89	5.06	5.53	5.08	4.85	4.75	4.88	4.94	5.11	5.51	5.16	4.90
Koch	3.83	4.25	4.43	4.72	5.09	4.94	5.13	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.80	4.85	4.90	5.14	5.38	5.10	5.19	5.74	5.40	4.92	4.79	5.34	4.74	5.00



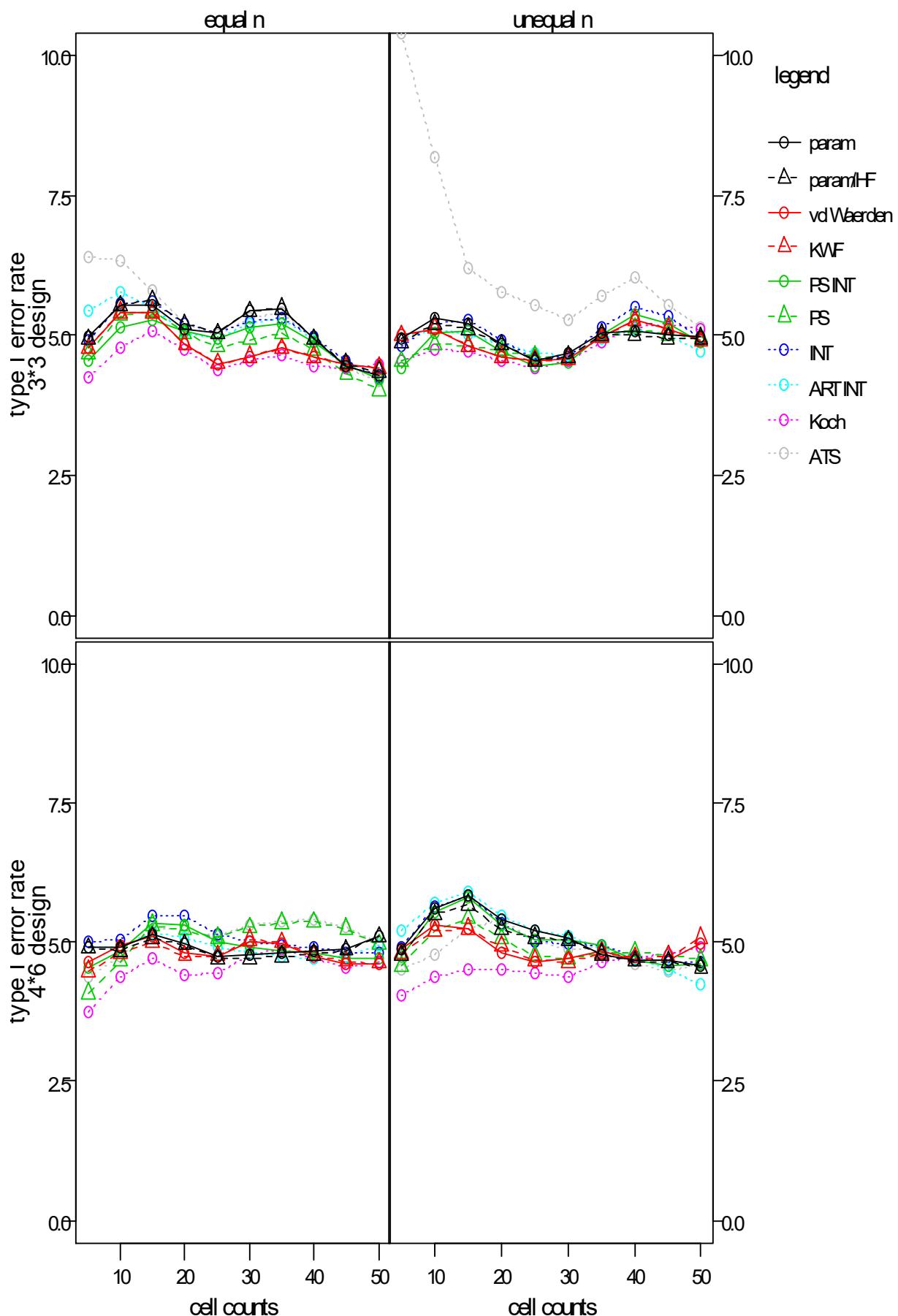
1. 5. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.13	5.62	4.78	4.54	4.96	5.32	5.30	5.75	5.54	4.94	4.54	4.95	5.26	5.53
parametric HF-adj	6.20	5.47	4.62	4.49	4.91	5.26	5.38	6.00	5.67	5.00	4.57	4.91	5.26	5.53
van der Waerden	5.22	4.99	4.54	4.41	4.49	5.06	5.20	5.37	5.05	4.54	4.40	4.64	5.17	5.18
KWF	5.38	5.10	4.54	4.41	4.58	5.03	5.13	5.47	5.15	4.61	4.44	4.64	5.20	5.30
Puri & Sen INT	5.40	5.20	4.56	4.29	4.83	5.14	5.45	5.30	5.12	4.49	4.15	4.76	5.09	5.37
Puri & Sen	5.33	5.11	4.69	4.56	4.89	5.29	5.27	5.37	5.19	4.76	4.42	4.74	5.36	5.22
INT	5.97	5.56	4.84	4.54	4.91	5.29	5.67	5.85	5.42	4.71	4.39	4.89	5.20	5.40
ART INT	6.30	6.16	6.12	6.70	8.68	10.31	11.27	6.87	6.78	6.85	7.56	9.78	12.01	14.11
Koch	4.90	4.84	4.40	4.28	4.61	5.28	5.06	5.07	4.90	4.48	4.35	4.80	5.05	5.03
ATS	6.84	6.06	5.16	4.88	5.06	5.44	5.30	11.42	8.43	5.69	5.04	5.20	5.50	6.15
large design (4*6)														
parametric	4.82	4.78	5.02	5.41	5.50	5.57	5.23	4.78	4.76	4.99	5.41	5.49	5.57	5.23
parametric HF-adj	4.73	4.76	5.03	5.39	5.48	5.57	5.23	4.78	4.81	5.01	5.36	5.47	5.62	5.17
van der Waerden	5.22	5.06	4.96	5.15	5.15	5.61	5.35	5.22	5.06	4.96	5.15	5.15	5.61	5.35
KWF	5.13	5.09	4.97	5.06	5.15	5.67	5.49	5.13	5.09	4.97	5.06	5.15	5.67	5.49
Puri & Sen INT	4.35	4.42	4.88	5.48	5.34	5.40	5.23	4.35	4.42	4.88	5.48	5.34	5.40	5.23
Puri & Sen	4.58	4.54	4.79	5.30	5.44	5.54	5.12	4.58	4.54	4.79	5.30	5.44	5.54	5.12
INT	4.79	4.74	5.04	5.56	5.39	5.49	5.28	4.60	4.64	5.00	5.55	5.38	5.45	5.35
ART INT	5.15	5.15	5.62	6.75	8.20	9.04	9.49	5.60	6.08	6.92	8.36	11.82	15.26	16.11
Koch	3.75	4.00	4.45	5.04	5.36	5.64	5.69	3.75	4.00	4.45	5.04	5.36	5.64	5.69
ATS	4.68	4.69	4.91	5.31	5.43	5.54	5.17	5.85	5.33	4.84	5.04	5.40	5.26	5.13



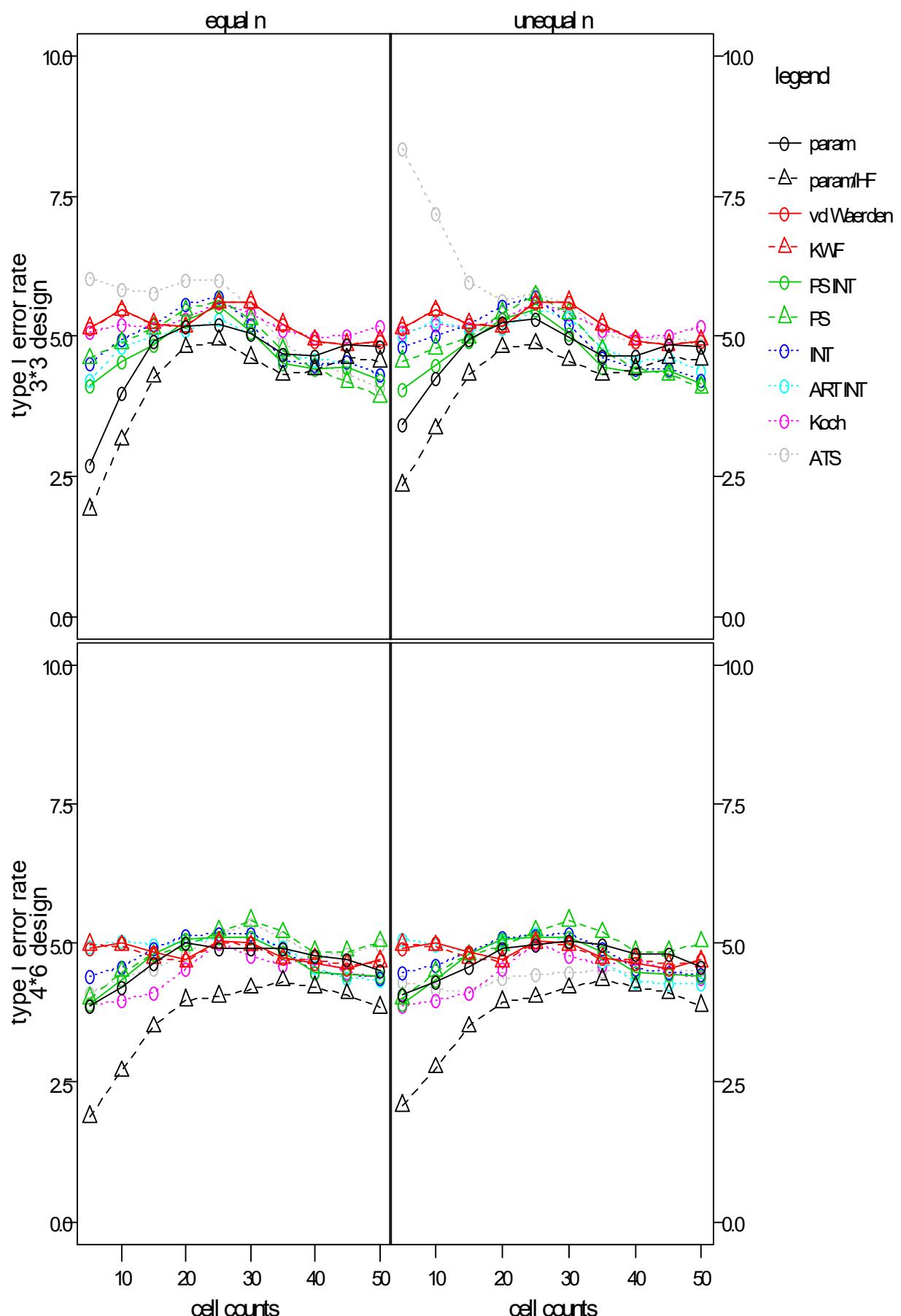
1. 5. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.96	5.54	5.55	5.12	5.42	4.93	4.28	4.93	5.29	5.19	4.83	4.66	5.08	4.97
parametric HF-adj	4.93	5.53	5.62	5.19	5.42	4.93	4.35	4.86	5.19	5.11	4.83	4.61	5.00	4.95
van der Waerden	4.76	5.41	5.40	4.85	4.61	4.61	4.42	5.00	5.12	4.81	4.62	4.58	5.28	4.90
KWF	4.76	5.41	5.40	4.85	4.61	4.61	4.42	5.00	5.12	4.81	4.62	4.58	5.28	4.90
Puri & Sen INT	4.56	5.14	5.26	5.08	5.15	4.86	4.22	4.41	5.03	5.08	4.70	4.51	5.36	4.86
Puri & Sen	4.66	5.35	5.42	5.03	4.92	4.74	4.02	4.53	4.83	4.80	4.72	4.59	5.12	4.97
INT	4.91	5.56	5.59	5.22	5.24	4.96	4.25	4.81	5.22	5.28	4.92	4.61	5.49	4.95
ART INT	5.43	5.75	5.49	5.04	5.22	4.90	4.27	4.93	5.10	5.01	4.85	4.65	5.11	4.71
Koch	4.25	4.79	5.06	4.74	4.54	4.45	4.48	4.55	4.74	4.70	4.53	4.54	5.15	5.10
ATS	6.38	6.34	5.80	5.22	5.29	4.92	4.17	10.38	8.19	6.20	5.75	5.26	6.03	5.15
large design (4*6)														
parametric	4.89	4.92	5.14	4.96	4.76	4.83	5.10	4.88	5.59	5.84	5.41	5.06	4.67	4.57
parametric HF-adj	4.89	4.84	5.08	4.95	4.69	4.78	5.10	4.76	5.50	5.67	5.22	5.03	4.65	4.55
van der Waerden	4.63	4.93	5.10	4.81	4.99	4.75	4.60	4.88	5.30	5.24	4.81	4.70	4.66	4.97
KWF	4.48	4.81	4.99	4.75	5.04	4.76	4.62	4.80	5.19	5.24	4.92	4.64	4.72	5.07
Puri & Sen INT	4.53	4.84	5.34	5.31	4.89	4.80	4.70	4.73	5.53	5.79	5.31	5.05	4.68	4.62
Puri & Sen	4.08	4.65	5.31	5.22	5.26	5.36	4.95	4.56	5.20	5.42	5.06	4.71	4.82	4.68
INT	5.02	5.05	5.46	5.47	4.99	4.91	4.80	4.89	5.65	5.84	5.34	4.96	4.74	4.63
ART INT	4.89	4.92	5.16	5.08	4.80	4.72	4.94	5.20	5.71	5.89	5.47	5.09	4.70	4.25
Koch	3.75	4.39	4.72	4.41	4.78	4.70	4.63	4.03	4.38	4.51	4.50	4.39	4.75	4.90
ATS	4.37	4.75	5.28	5.20	5.29	5.39	4.98	4.50	4.78	5.25	5.39	4.86	4.62	4.60



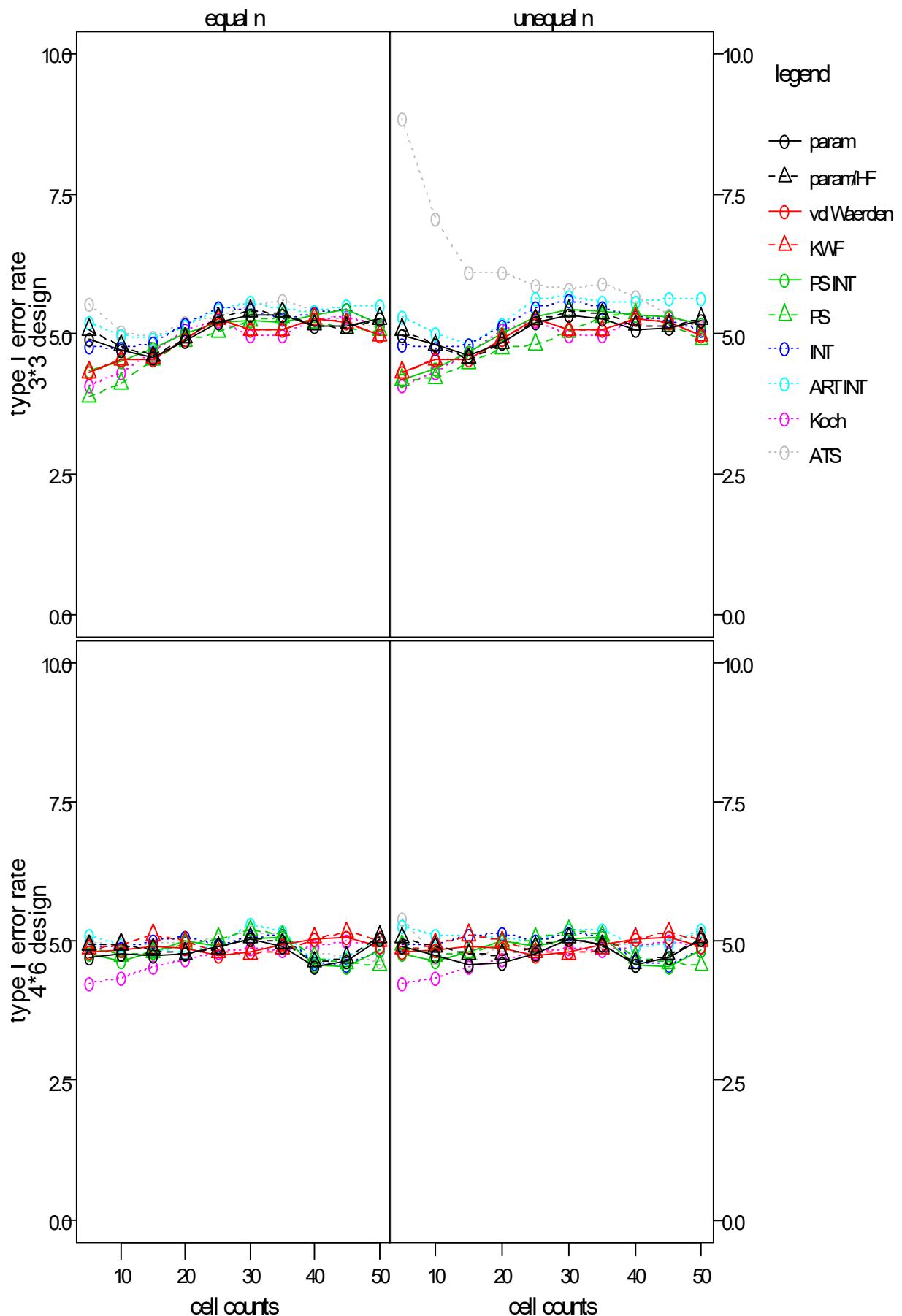
1. 5. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.69	3.99	4.92	5.16	5.03	4.65	4.80	3.41	4.26	4.94	5.25	4.99	4.65	4.82
parametric HF-adj	1.91	3.14	4.26	4.80	4.62	4.39	4.55	2.33	3.34	4.31	4.79	4.56	4.41	4.58
van der Waerden	5.14	5.46	5.22	5.16	5.61	4.92	4.92	5.14	5.46	5.22	5.16	5.61	4.92	4.92
KWF	5.14	5.46	5.22	5.16	5.61	4.92	4.92	5.14	5.46	5.22	5.16	5.61	4.92	4.92
Puri & Sen INT	4.10	4.54	4.85	5.28	5.08	4.42	4.23	4.05	4.49	4.91	5.31	5.04	4.34	4.16
Puri & Sen	4.60	4.88	5.14	5.46	5.29	4.42	3.91	4.55	4.78	4.96	5.40	5.40	4.40	4.08
INT	4.51	4.94	5.22	5.56	5.20	4.47	4.30	4.81	5.01	5.20	5.55	5.22	4.42	4.21
ART INT	4.21	4.82	5.00	5.11	5.05	4.58	4.30	5.01	5.26	5.09	5.14	5.34	4.54	4.38
Koch	5.08	5.21	5.14	5.31	5.40	4.99	5.17	5.08	5.21	5.14	5.31	5.40	4.99	5.17
ATS	6.03	5.84	5.75	5.99	5.50	4.51	4.08	8.34	7.20	5.97	5.64	5.56	4.89	4.83
large design (4*6)														
parametric	3.88	4.20	4.65	5.00	4.90	4.77	4.50	4.08	4.30	4.59	4.92	5.04	4.79	4.56
parametric HF-adj	1.89	2.70	3.50	3.98	4.19	4.21	3.85	2.09	2.76	3.50	3.95	4.20	4.22	3.88
van der Waerden	4.92	5.00	4.83	4.72	5.00	4.64	4.69	4.92	5.00	4.83	4.72	5.00	4.64	4.69
KWF	4.97	4.95	4.74	4.67	4.96	4.72	4.67	4.97	4.95	4.74	4.67	4.96	4.72	4.67
Puri & Sen INT	3.91	4.35	4.81	5.08	5.10	4.46	4.40	3.91	4.35	4.81	5.08	5.10	4.46	4.40
Puri & Sen	4.01	4.49	4.79	4.95	5.41	4.84	5.02	4.01	4.49	4.79	4.95	5.41	4.84	5.02
INT	4.40	4.58	4.89	5.15	5.17	4.47	4.38	4.48	4.60	4.85	5.12	5.16	4.53	4.43
ART INT	4.95	5.03	4.96	5.00	5.11	4.59	4.35	5.07	4.96	4.84	5.03	5.03	4.32	4.28
Koch	3.87	3.96	4.12	4.55	4.77	4.74	4.37	3.87	3.96	4.12	4.55	4.77	4.74	4.37
ATS	4.11	4.38	4.54	4.82	5.34	4.76	4.97	4.32	4.19	4.12	4.38	4.46	4.46	4.53



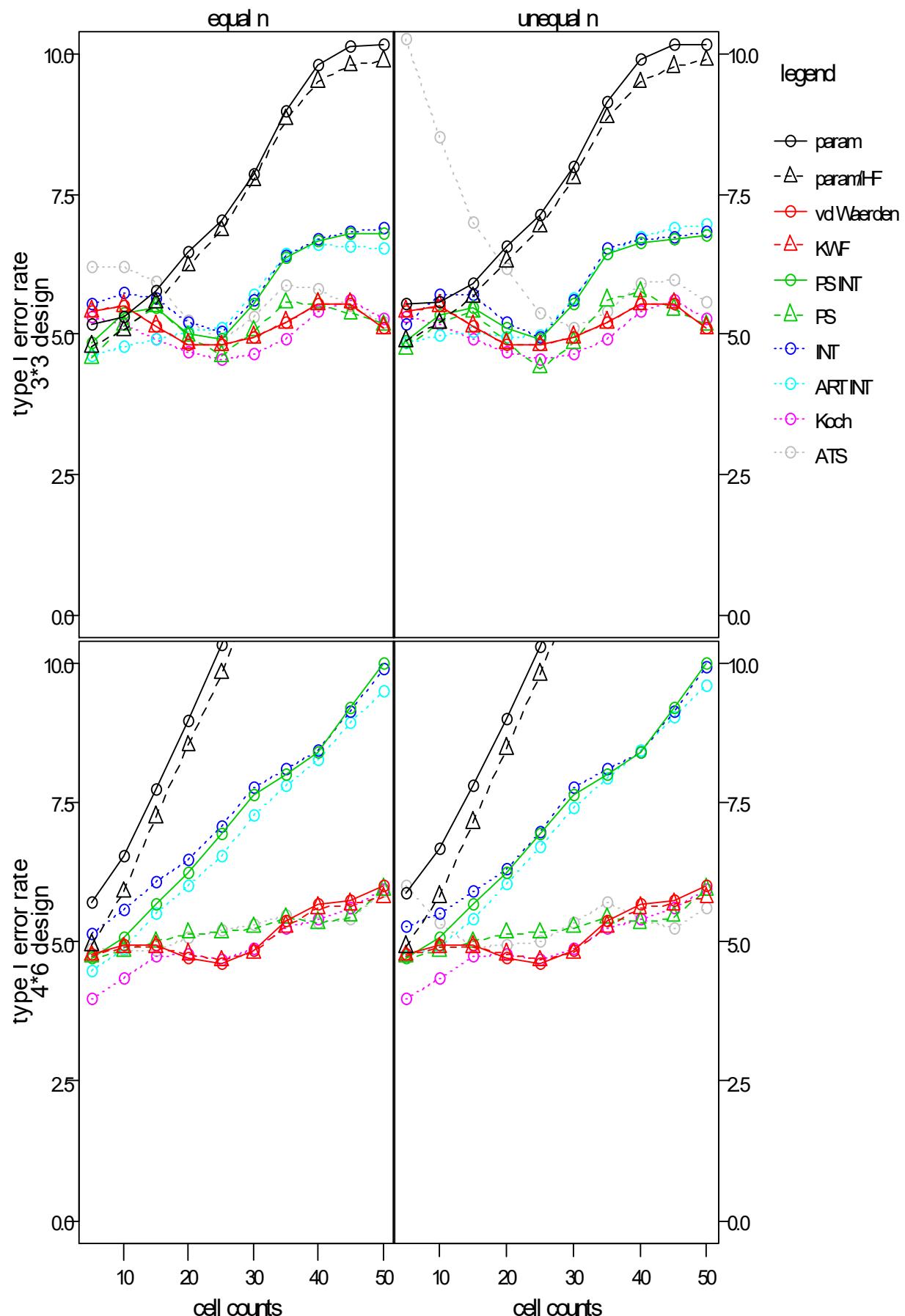
1. 5. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.92	4.71	4.57	4.88	5.35	5.15	5.28	4.98	4.80	4.60	4.85	5.34	5.07	5.25
parametric HF-adj	5.07	4.79	4.60	4.92	5.41	5.15	5.27	5.08	4.80	4.56	4.85	5.40	5.15	5.27
van der Waerden	4.31	4.53	4.56	4.92	5.06	5.28	4.98	4.31	4.53	4.56	4.92	5.06	5.28	4.98
KWF	4.31	4.53	4.56	4.92	5.06	5.28	4.98	4.31	4.53	4.56	4.92	5.06	5.28	4.98
Puri & Sen INT	4.35	4.51	4.74	5.01	5.25	5.35	5.18	4.18	4.39	4.67	5.01	5.45	5.34	5.16
Puri & Sen	3.88	4.12	4.55	4.86	5.24	5.19	5.05	4.18	4.20	4.47	4.75	5.03	5.36	4.90
INT	4.77	4.74	4.84	5.18	5.43	5.36	5.16	4.82	4.73	4.80	5.14	5.60	5.31	5.06
ART INT	5.20	4.99	4.90	5.14	5.56	5.40	5.50	5.30	5.01	4.81	5.17	5.67	5.58	5.63
Koch	4.08	4.30	4.66	5.07	4.97	5.26	5.13	4.08	4.30	4.66	5.07	4.97	5.26	5.13
ATS	5.54	5.05	4.95	5.19	5.51	5.40	5.12	8.83	7.07	6.10	6.11	5.81	5.68	5.10
large design (4*6)														
parametric	4.72	4.76	4.75	4.78	5.05	4.55	5.04	4.90	4.75	4.59	4.60	5.03	4.59	5.04
parametric HF-adj	4.93	4.94	4.85	4.78	5.06	4.62	5.07	5.05	4.90	4.76	4.75	5.06	4.61	5.05
van der Waerden	4.82	4.83	4.92	4.88	4.81	5.05	4.91	4.82	4.83	4.92	4.88	4.81	5.05	4.91
KWF	4.85	4.95	5.11	5.00	4.78	5.05	5.00	4.85	4.95	5.11	5.00	4.78	5.05	5.00
Puri & Sen INT	4.77	4.64	4.82	5.00	5.05	4.58	4.85	4.77	4.64	4.82	5.00	5.05	4.58	4.85
Puri & Sen	4.92	4.74	4.79	4.95	5.19	4.71	4.57	4.92	4.74	4.79	4.95	5.19	4.71	4.57
INT	4.95	4.86	5.00	5.06	5.08	4.62	4.85	4.95	4.94	5.11	5.14	5.14	4.65	4.85
ART INT	5.12	4.93	4.83	4.80	5.30	4.65	5.03	5.27	5.11	5.09	5.05	5.20	4.89	5.22
Koch	4.23	4.35	4.53	4.66	4.86	4.92	4.90	4.23	4.35	4.53	4.66	4.86	4.92	4.90
ATS	5.00	4.89	4.95	5.01	5.16	4.80	4.65	5.42	4.69	4.60	4.93	4.96	4.90	5.13



1. 5. 1. 13 normal distribution - equal variances - contaminated III

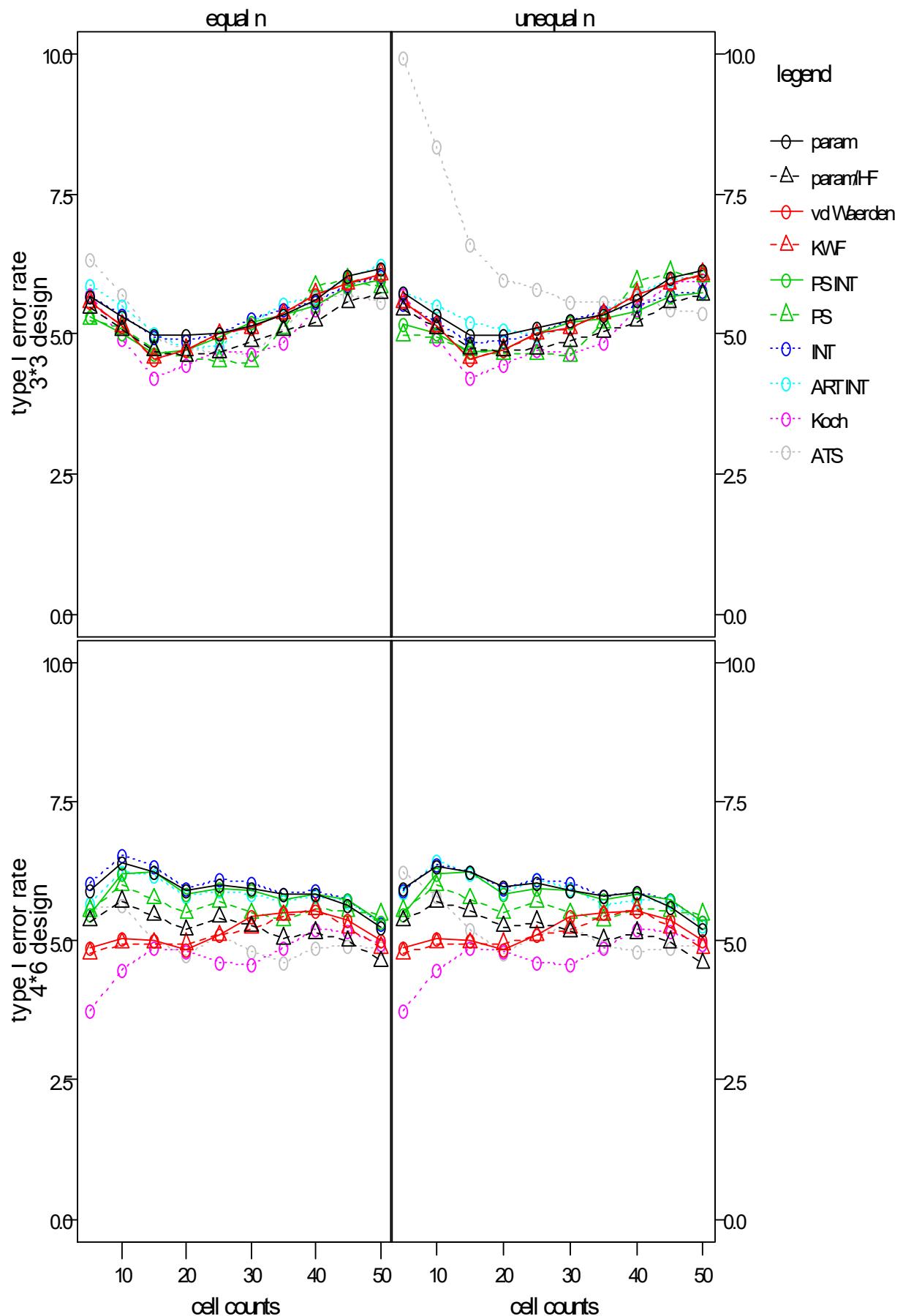
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.18	5.32	5.76	6.46	7.85	9.79	10.15	5.55	5.56	5.91	6.55	7.99	9.90	10.15
parametric HF-adj	4.78	5.06	5.55	6.21	7.74	9.50	9.87	4.88	5.19	5.66	6.30	7.79	9.49	9.88
van der Waerden	5.41	5.51	5.14	4.82	4.95	5.54	5.11	5.41	5.51	5.14	4.82	4.95	5.54	5.11
KWF	5.41	5.51	5.14	4.82	4.95	5.54	5.11	5.41	5.51	5.14	4.82	4.95	5.54	5.11
Puri & Sen INT	4.85	5.38	5.46	5.01	5.55	6.65	6.80	4.86	5.34	5.46	5.09	5.54	6.62	6.75
Puri & Sen	4.58	5.15	5.48	4.96	5.05	5.55	5.16	4.73	5.20	5.40	4.84	4.84	5.75	5.16
INT	5.55	5.73	5.62	5.21	5.61	6.69	6.88	5.16	5.69	5.71	5.19	5.61	6.69	6.83
ART INT	4.60	4.79	4.92	5.03	5.69	6.60	6.53	4.85	4.96	5.04	4.93	5.62	6.74	6.97
Koch	5.32	5.16	4.91	4.66	4.65	5.40	5.26	5.32	5.16	4.91	4.66	4.65	5.40	5.26
ATS	6.20	6.18	5.93	5.25	5.30	5.80	5.20	10.26	8.51	6.99	6.15	5.11	5.90	5.58
large design (4*6)														
parametric	5.69	6.54	7.74	8.96	11.84	14.21	16.39	5.88	6.65	7.79	8.99	11.82	14.24	16.39
parametric HF-adj	4.94	5.89	7.24	8.52	11.24	13.60	15.79	4.91	5.80	7.14	8.46	11.30	13.65	15.77
van der Waerden	4.78	4.95	4.94	4.70	4.85	5.66	6.00	4.78	4.95	4.94	4.70	4.85	5.66	6.00
KWF	4.75	4.90	4.91	4.78	4.80	5.61	5.79	4.75	4.90	4.91	4.78	4.80	5.61	5.79
Puri & Sen INT	4.70	5.06	5.66	6.24	7.64	8.38	9.99	4.70	5.06	5.66	6.24	7.64	8.38	9.99
Puri & Sen	4.72	4.84	5.00	5.15	5.25	5.34	5.94	4.72	4.84	5.00	5.15	5.25	5.34	5.94
INT	5.13	5.56	6.07	6.46	7.75	8.43	9.89	5.27	5.51	5.91	6.30	7.76	8.41	9.91
ART INT	4.46	4.88	5.51	5.99	7.28	8.26	9.49	4.75	4.90	5.41	6.05	7.41	8.43	9.59
Koch	3.98	4.34	4.74	4.76	4.88	5.40	5.95	3.98	4.34	4.74	4.76	4.88	5.40	5.95
ATS	4.87	4.83	4.85	5.06	5.31	5.33	5.89	5.99	5.33	4.91	4.95	5.33	5.41	5.60



1. 5. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

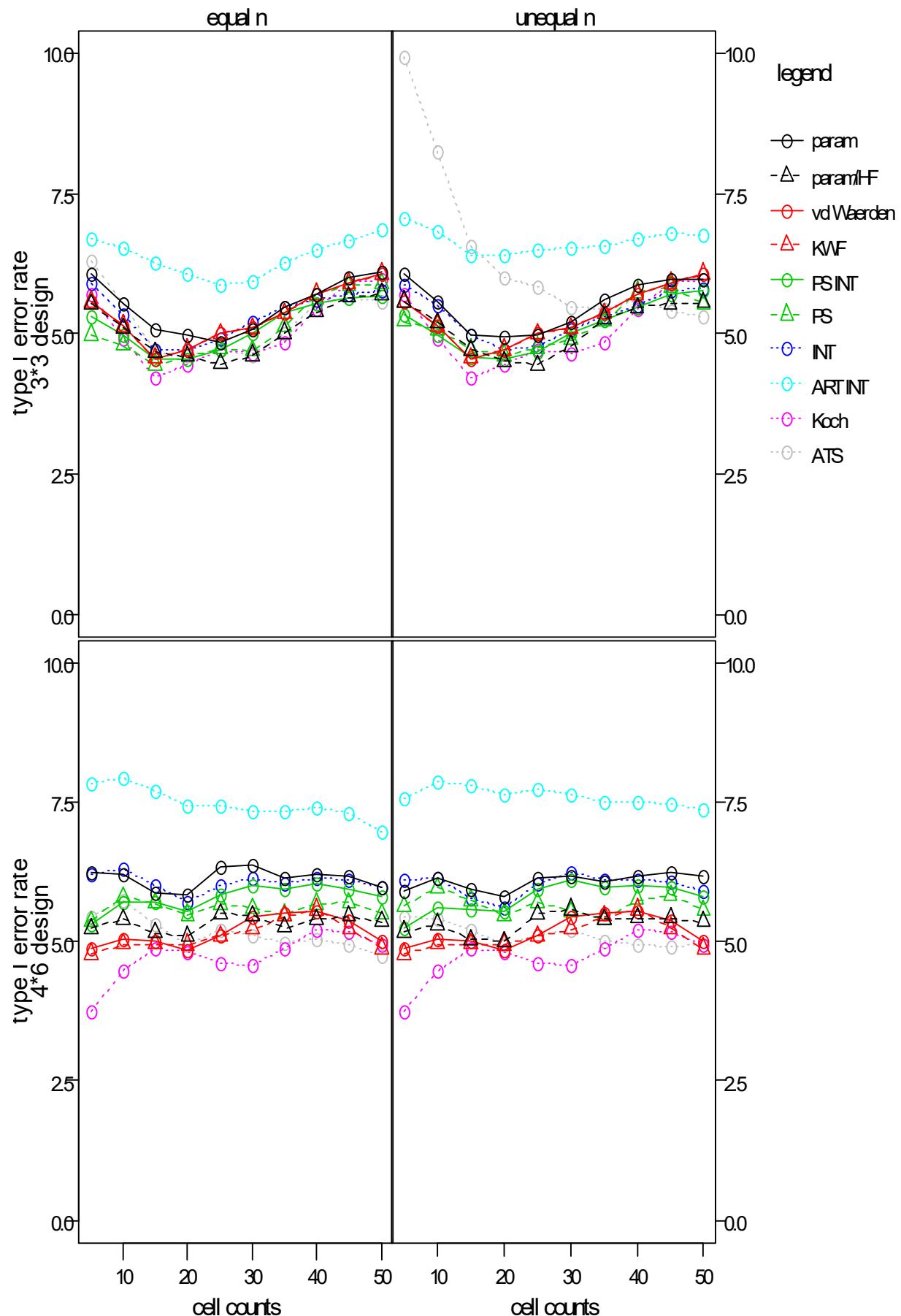
1. 5. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.67	5.30	4.99	4.97	5.14	5.61	6.15	5.72	5.35	4.97	4.96	5.23	5.60	6.12
parametric HF-adj	5.47	5.06	4.69	4.61	4.86	5.22	5.72	5.43	5.10	4.74	4.69	4.86	5.22	5.70
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	5.30	5.01	4.64	4.70	5.19	5.51	5.95	5.18	5.00	4.69	4.72	5.22	5.39	5.73
Puri & Sen	5.25	5.11	4.71	4.59	4.49	5.85	5.82	4.98	4.95	4.69	4.65	4.62	5.94	6.02
INT	5.68	5.34	4.93	4.89	5.26	5.56	6.02	5.55	5.20	4.84	4.88	5.25	5.50	5.78
ART INT	5.85	5.51	5.01	4.75	5.20	5.66	6.22	5.72	5.49	5.19	5.06	5.09	5.72	6.02
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.34	5.70	4.95	4.72	4.65	5.64	5.58	9.94	8.35	6.59	5.95	5.56	5.66	5.38
large design (4*6)														
parametric	5.89	6.39	6.24	5.90	5.94	5.85	5.23	5.93	6.35	6.25	5.97	5.90	5.86	5.20
parametric HF-adj	5.35	5.71	5.45	5.19	5.26	5.14	4.63	5.35	5.71	5.54	5.25	5.16	5.14	4.60
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	5.46	6.21	6.22	5.84	5.89	5.84	5.35	5.46	6.21	6.22	5.84	5.89	5.84	5.35
Puri & Sen	5.54	5.99	5.75	5.49	5.50	5.56	5.47	5.54	5.99	5.75	5.49	5.50	5.56	5.47
INT	6.03	6.54	6.33	5.94	6.04	5.89	5.31	5.91	6.38	6.24	5.95	6.02	5.88	5.33
ART INT	5.68	6.25	6.17	5.80	5.82	5.79	5.30	5.88	6.44	6.21	5.88	5.94	5.74	5.26
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.56	5.62	4.99	4.75	4.80	4.88	4.87	6.22	5.81	5.19	4.78	5.27	4.80	4.95



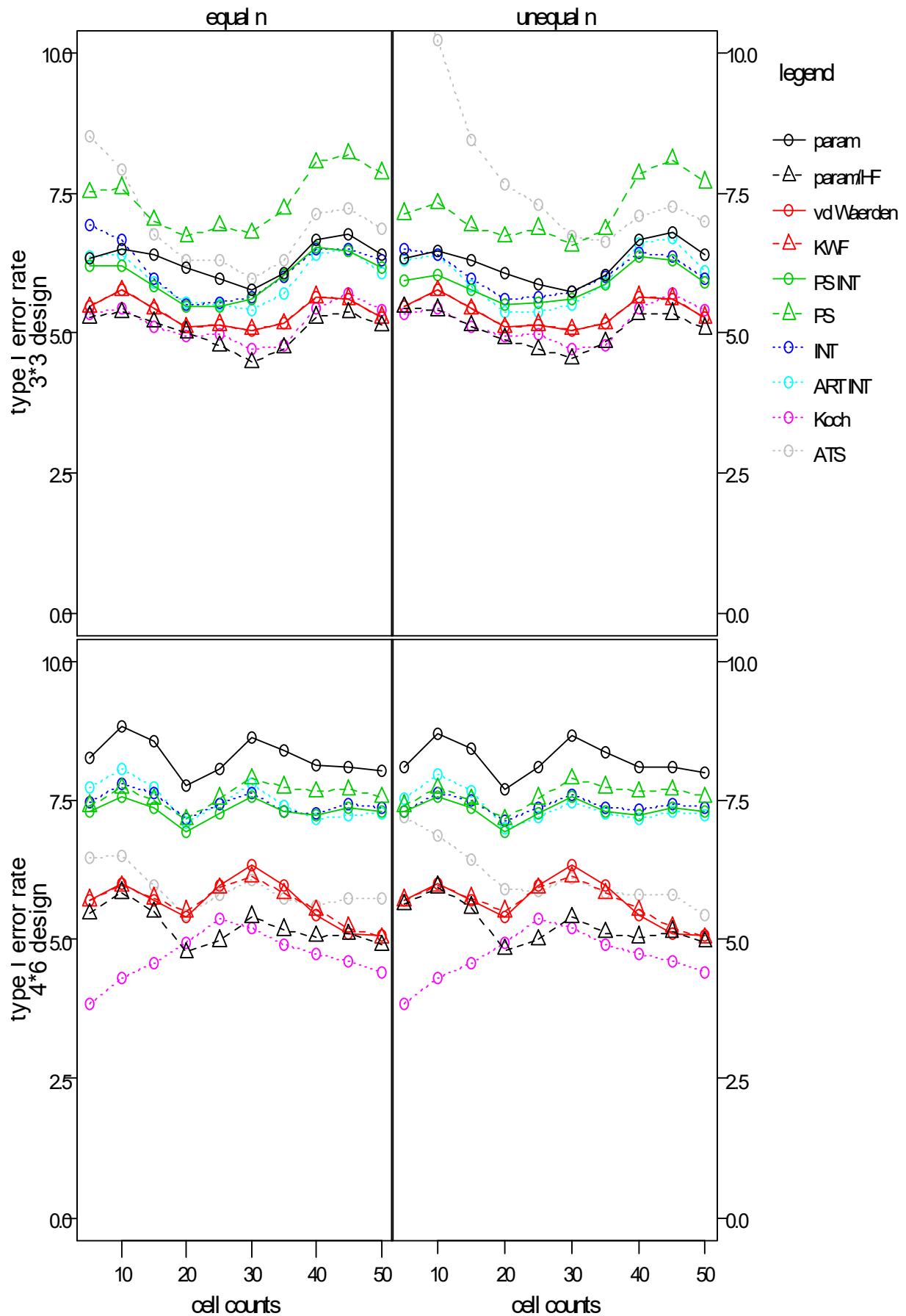
1. 5. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.05	5.54	5.08	4.96	5.08	5.71	6.10	6.05	5.58	4.99	4.94	5.19	5.85	5.97
parametric HF-adj	5.52	5.09	4.67	4.59	4.61	5.38	5.70	5.57	5.20	4.70	4.50	4.78	5.46	5.55
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	5.32	4.99	4.55	4.55	5.00	5.55	5.68	5.33	4.99	4.58	4.53	5.00	5.46	5.77
Puri & Sen	4.98	4.79	4.45	4.59	4.69	5.70	5.88	5.22	5.06	4.71	4.61	4.90	5.74	5.53
INT	5.90	5.35	4.70	4.70	5.20	5.61	5.75	5.85	5.51	4.96	4.71	5.06	5.50	5.80
ART INT	6.68	6.54	6.25	6.06	5.92	6.50	6.84	7.05	6.81	6.41	6.40	6.53	6.70	6.77
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.29	5.55	4.69	4.61	4.60	5.55	5.57	9.93	8.25	6.56	6.01	5.47	5.60	5.32
large design (4*6)														
parametric	6.22	6.20	5.86	5.85	6.36	6.20	5.98	5.90	6.14	5.92	5.81	6.16	6.18	6.17
parametric HF-adj	5.23	5.40	5.15	5.09	5.46	5.40	5.35	5.18	5.31	5.03	5.00	5.57	5.42	5.35
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	5.31	5.71	5.71	5.55	5.99	6.03	5.80	5.25	5.59	5.58	5.54	6.09	6.00	5.80
Puri & Sen	5.36	5.79	5.68	5.47	5.59	5.67	5.50	5.63	5.96	5.74	5.47	5.53	5.75	5.56
INT	6.20	6.30	6.01	5.71	6.15	6.12	5.98	6.10	6.15	5.78	5.59	6.22	6.10	5.90
ART INT	7.83	7.94	7.68	7.42	7.34	7.40	6.98	7.56	7.85	7.79	7.62	7.62	7.51	7.37
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.45	5.72	5.31	4.95	5.12	5.05	4.73	5.45	5.41	5.22	4.95	5.21	4.94	4.93



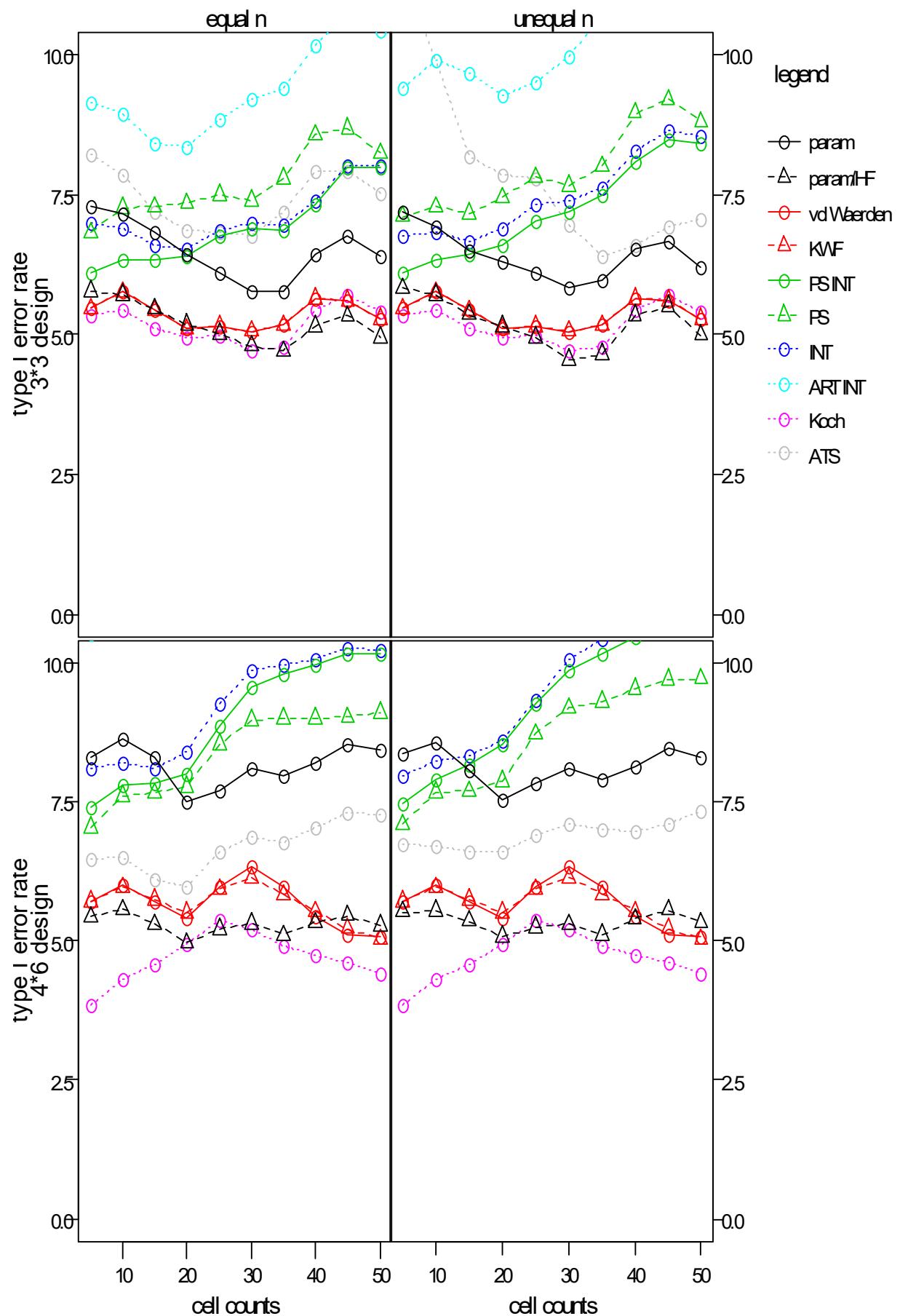
1. 5. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.32	6.49	6.40	6.16	5.78	6.65	6.41	6.33	6.45	6.31	6.05	5.74	6.67	6.38
parametric HF-adj	5.28	5.36	5.20	5.01	4.47	5.28	5.13	5.45	5.41	5.12	4.89	4.53	5.33	5.08
van der Waerden	5.46	5.75	5.43	5.09	5.05	5.64	5.28	5.46	5.75	5.43	5.09	5.05	5.64	5.28
KWF	5.46	5.75	5.43	5.09	5.05	5.64	5.28	5.46	5.75	5.43	5.09	5.05	5.64	5.28
Puri & Sen INT	6.20	6.21	5.84	5.46	5.60	6.53	6.16	5.93	6.04	5.77	5.49	5.59	6.35	5.90
Puri & Sen	7.51	7.59	7.00	6.71	6.78	8.04	7.85	7.13	7.31	6.90	6.71	6.56	7.84	7.68
INT	6.92	6.65	5.97	5.51	5.62	6.49	6.28	6.48	6.41	5.96	5.59	5.74	6.43	5.95
ART INT	6.36	6.40	5.90	5.53	5.40	6.38	6.06	6.31	6.38	5.84	5.38	5.49	6.60	6.11
Koch	5.35	5.44	5.11	4.95	4.70	5.45	5.40	5.35	5.44	5.11	4.95	4.70	5.45	5.40
ATS	8.52	7.90	6.76	6.28	5.96	7.11	6.86	11.69	10.24	8.45	7.65	6.73	7.10	7.00
large design (4*6)														
parametric	8.26	8.81	8.57	7.76	8.62	8.12	8.03	8.08	8.69	8.43	7.69	8.66	8.10	7.98
parametric HF-adj	5.46	5.84	5.49	4.76	5.41	5.05	4.90	5.63	5.94	5.58	4.82	5.39	5.04	4.95
van der Waerden	5.71	5.99	5.69	5.41	6.35	5.44	5.07	5.71	5.99	5.69	5.41	6.35	5.44	5.07
KWF	5.71	5.96	5.74	5.51	6.12	5.53	5.03	5.71	5.96	5.74	5.51	6.12	5.53	5.03
Puri & Sen INT	7.30	7.55	7.36	6.94	7.58	7.24	7.30	7.30	7.55	7.36	6.94	7.58	7.24	7.30
Puri & Sen	7.40	7.72	7.51	7.15	7.89	7.65	7.56	7.40	7.72	7.51	7.15	7.89	7.65	7.56
INT	7.48	7.81	7.63	7.16	7.62	7.26	7.38	7.31	7.64	7.51	7.12	7.60	7.32	7.37
ART INT	7.73	8.05	7.73	7.10	7.78	7.16	7.27	7.53	7.95	7.65	7.00	7.47	7.17	7.23
Koch	3.84	4.32	4.58	4.95	5.22	4.75	4.42	3.84	4.32	4.58	4.95	5.22	4.75	4.42
ATS	6.48	6.50	5.96	5.45	6.06	5.61	5.75	7.20	6.88	6.43	5.91	6.10	5.81	5.43



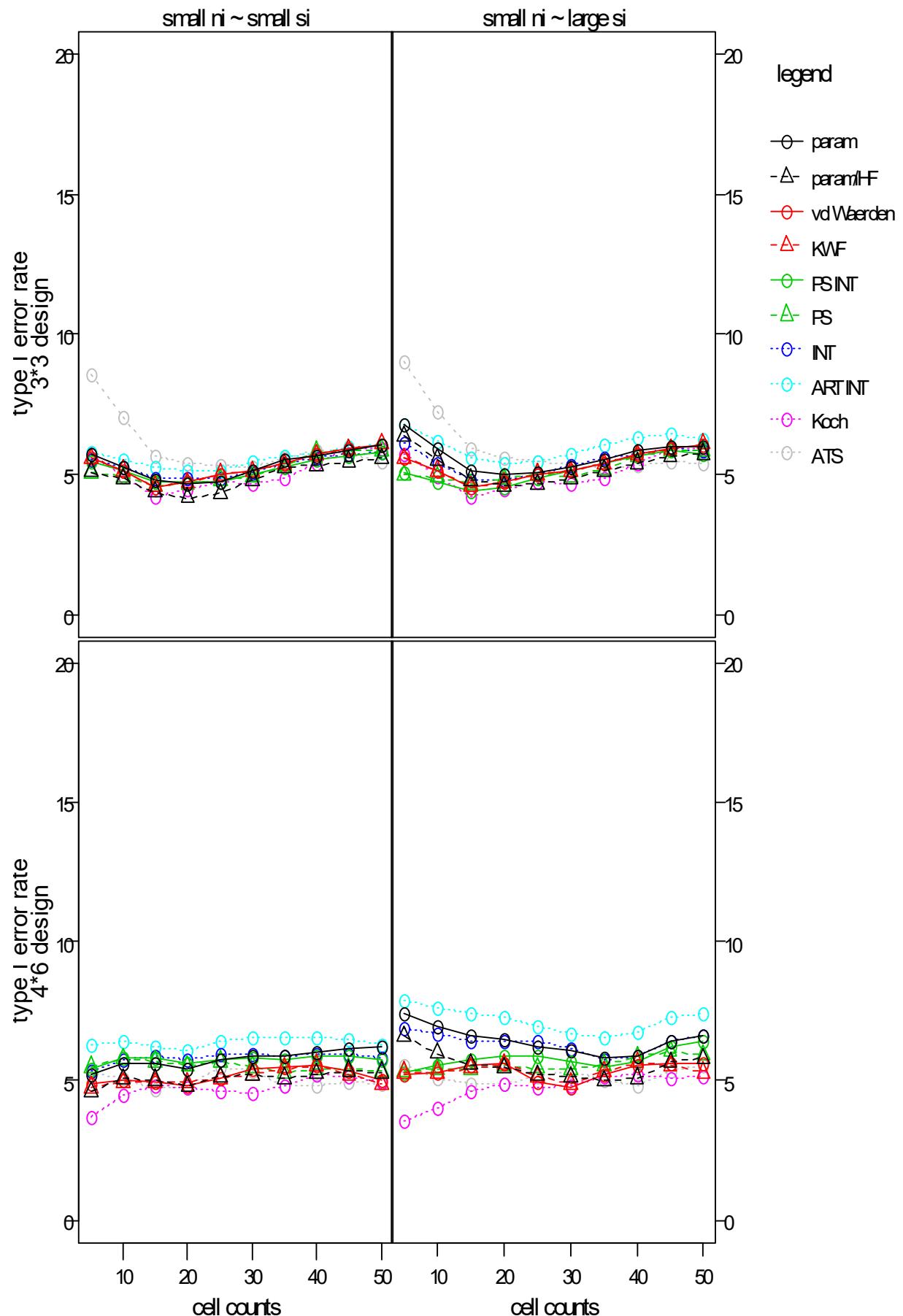
1. 5. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	7.28	7.16	6.82	6.44	5.76	6.44	6.40	7.20	6.91	6.49	6.28	5.84	6.54	6.19
parametric HF-adj	5.77	5.71	5.45	5.17	4.79	5.14	4.95	5.82	5.70	5.35	5.14	4.55	5.34	4.99
van der Waerden	5.46	5.75	5.43	5.09	5.05	5.64	5.28	5.46	5.75	5.43	5.09	5.05	5.64	5.28
KWF	5.46	5.75	5.43	5.09	5.05	5.64	5.28	5.46	5.75	5.43	5.09	5.05	5.64	5.28
Puri & Sen INT	6.08	6.32	6.34	6.40	6.88	7.32	7.98	6.10	6.33	6.42	6.60	7.20	8.09	8.40
Puri & Sen	6.81	7.26	7.28	7.34	7.39	8.57	8.23	7.10	7.28	7.16	7.44	7.65	8.95	8.80
INT	7.00	6.88	6.59	6.54	6.99	7.40	8.01	6.75	6.81	6.67	6.88	7.39	8.26	8.55
ART INT	9.12	8.94	8.40	8.34	9.20	10.16	10.41	9.41	9.91	9.65	9.26	9.96	11.75	11.36
Koch	5.35	5.44	5.11	4.95	4.70	5.45	5.40	5.35	5.44	5.11	4.95	4.70	5.45	5.40
ATS	8.22	7.86	7.20	6.86	6.75	7.90	7.53	11.51	9.90	8.19	7.84	6.96	6.59	7.07
large design (4*6)														
parametric	8.30	8.62	8.28	7.51	8.10	8.20	8.43	8.35	8.55	8.07	7.53	8.10	8.14	8.28
parametric HF-adj	5.43	5.56	5.30	4.96	5.31	5.33	5.27	5.52	5.54	5.35	5.08	5.30	5.39	5.33
van der Waerden	5.71	5.99	5.69	5.41	6.35	5.44	5.07	5.71	5.99	5.69	5.41	6.35	5.44	5.07
KWF	5.71	5.96	5.74	5.51	6.12	5.53	5.03	5.71	5.96	5.74	5.51	6.12	5.53	5.03
Puri & Sen INT	7.40	7.80	7.83	8.01	9.56	9.94	10.17	7.46	7.89	8.16	8.54	9.84	10.46	10.77
Puri & Sen	7.03	7.60	7.65	7.76	8.96	8.99	9.10	7.09	7.66	7.69	7.86	9.18	9.53	9.70
INT	8.08	8.20	8.10	8.39	9.85	10.07	10.23	7.95	8.22	8.32	8.60	10.04	10.70	11.00
ART INT	10.53	11.19	11.46	11.34	12.47	13.39	13.95	11.14	11.81	11.70	11.50	13.01	14.29	15.10
Koch	3.84	4.32	4.58	4.95	5.22	4.75	4.42	3.84	4.32	4.58	4.95	5.22	4.75	4.42
ATS	6.46	6.50	6.10	5.97	6.88	7.04	7.25	6.72	6.70	6.61	6.59	7.10	6.95	7.34



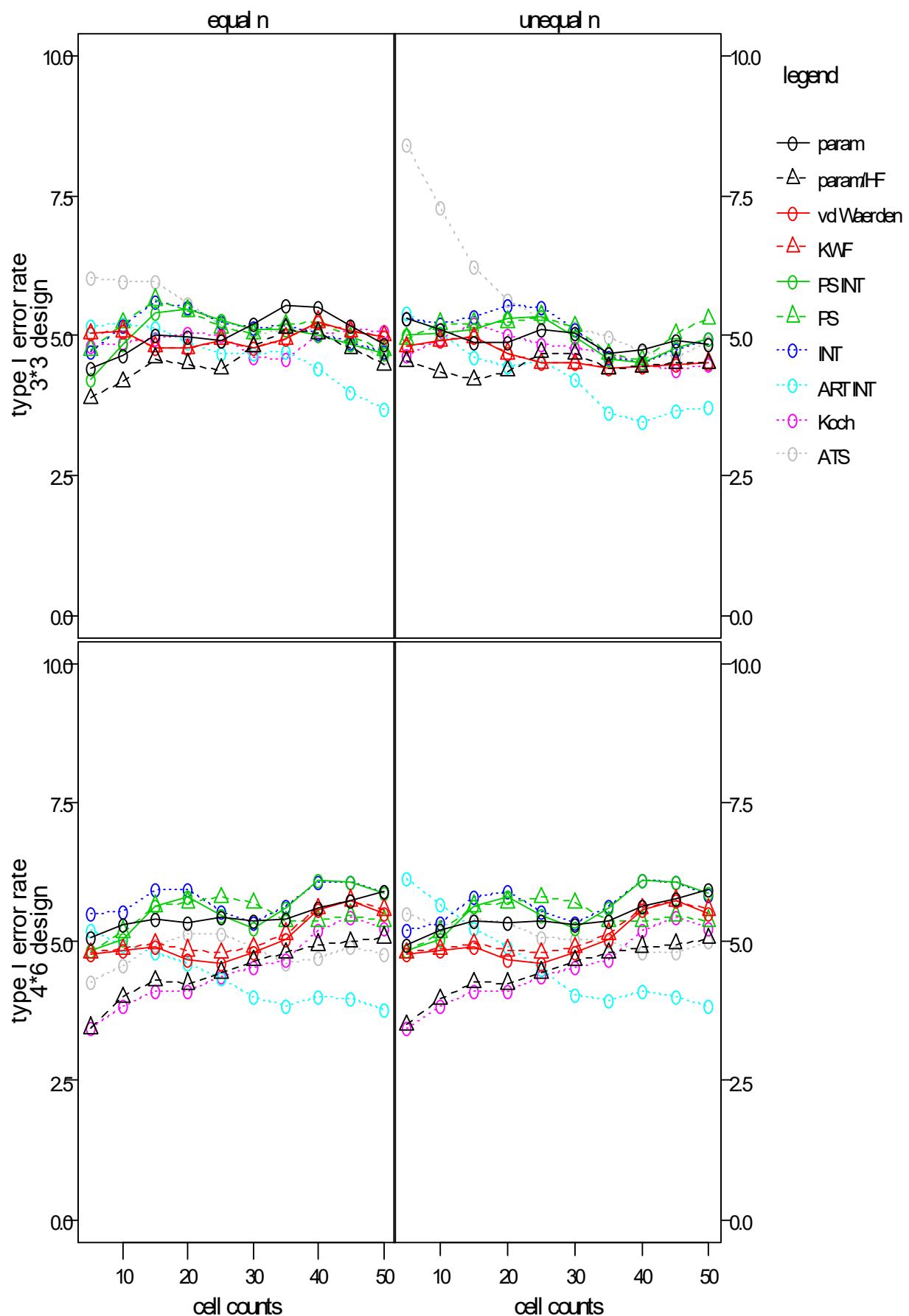
1. 5. 2. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.70	5.26	4.78	4.65	5.11	5.65	6.02	6.79	5.92	5.11	4.96	5.25	5.83	6.00
parametric HF-adj	5.08	4.84	4.36	4.16	4.81	5.34	5.58	6.35	5.54	4.79	4.59	4.85	5.40	5.72
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	5.45	5.14	4.75	4.70	4.96	5.49	5.77	5.03	4.72	4.42	4.55	5.15	5.65	5.73
Puri & Sen	5.07	4.91	4.61	4.64	4.90	5.79	5.85	4.98	4.89	4.64	4.83	4.92	5.66	5.87
INT	5.53	5.26	4.89	4.83	5.03	5.59	5.80	6.09	5.40	4.80	4.80	5.35	5.75	5.85
ART INT	5.78	5.51	5.25	5.14	5.43	5.75	6.08	6.77	6.17	5.60	5.41	5.74	6.34	6.25
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	8.59	7.04	5.66	5.41	5.29	5.83	5.48	9.01	7.21	5.89	5.60	5.30	5.31	5.42
large design (4*6)														
parametric	5.20	5.65	5.62	5.44	5.91	6.00	6.23	7.45	6.96	6.65	6.47	6.06	5.88	6.60
parametric HF-adj	4.61	5.08	5.03	4.81	5.24	5.25	5.30	6.59	5.99	5.59	5.46	5.14	5.11	5.81
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	5.23	5.28	5.54	5.61	4.74	5.59	5.60
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	5.30	5.30	5.45	5.60	4.90	5.65	5.30
Puri & Sen INT	5.43	5.81	5.82	5.61	5.81	5.86	5.78	5.31	5.57	5.74	5.86	5.70	5.67	6.42
Puri & Sen	5.50	5.81	5.69	5.53	5.50	5.42	5.37	5.35	5.42	5.44	5.54	5.41	5.86	5.95
INT	5.33	5.79	5.89	5.75	5.95	5.96	5.83	6.90	6.71	6.45	6.44	6.15	5.90	6.62
ART INT	6.28	6.41	6.24	6.12	6.58	6.58	6.30	7.88	7.60	7.43	7.29	6.69	6.78	7.45
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.56	4.01	4.65	4.91	4.86	5.20	5.13
ATS	5.27	5.12	4.67	4.81	5.36	4.81	4.92	5.55	5.12	4.88	4.92	5.39	4.86	5.53



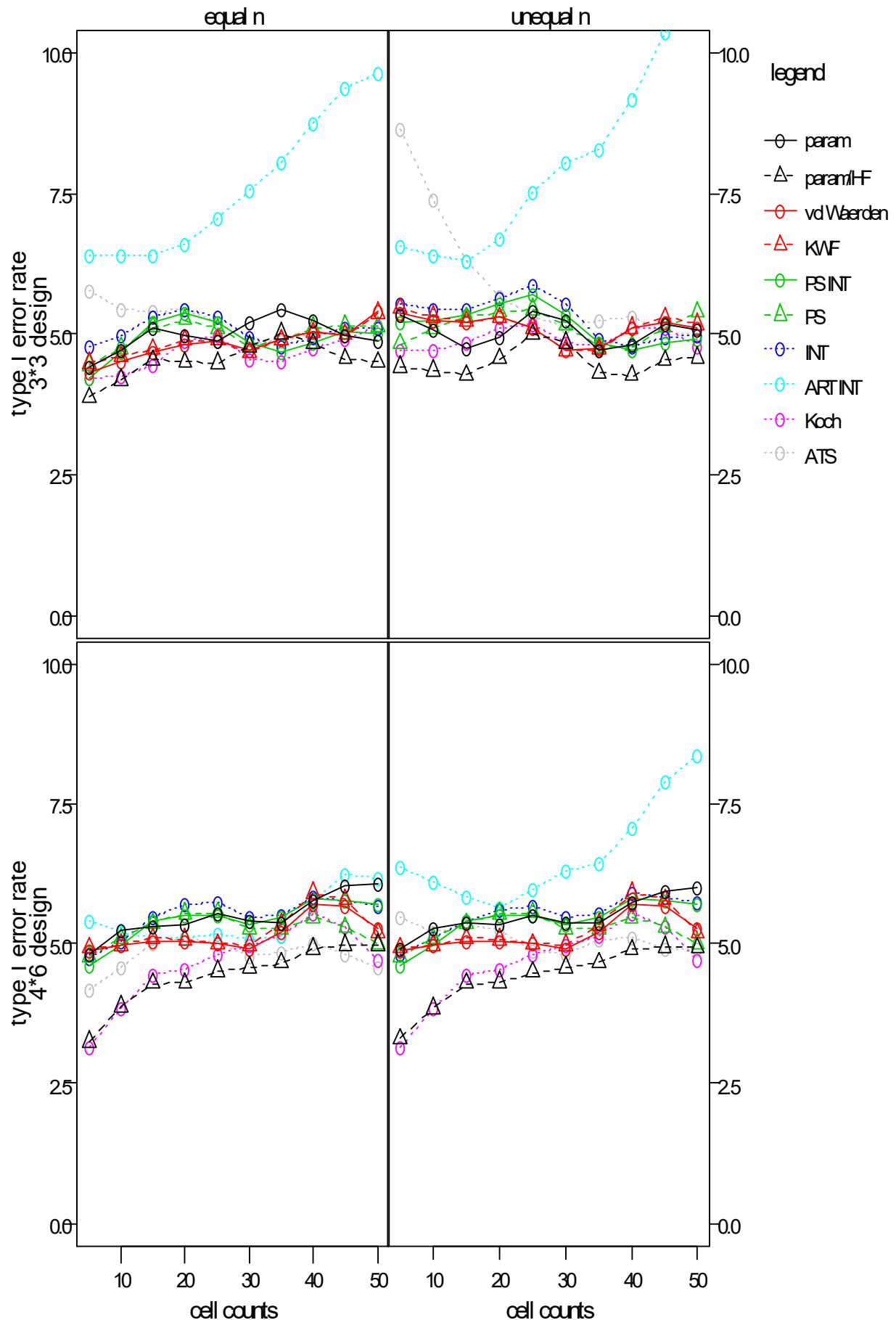
1. 5. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.40	4.64	5.01	4.99	5.21	5.49	4.85	5.32	5.09	4.86	4.88	5.04	4.74	4.85
parametric HF-adj	3.87	4.17	4.59	4.49	4.80	5.04	4.48	4.54	4.34	4.21	4.36	4.67	4.43	4.50
van der Waerden	5.03	5.07	4.79	4.77	4.79	5.24	4.99	4.80	4.91	4.97	4.68	4.50	4.44	4.52
KWF	5.03	5.07	4.79	4.77	4.79	5.24	4.99	4.80	4.91	4.97	4.68	4.50	4.44	4.52
Puri & Sen INT	4.20	4.83	5.41	5.46	5.11	5.01	4.66	5.00	5.04	5.12	5.31	4.99	4.50	4.95
Puri & Sen	4.75	5.22	5.64	5.44	5.03	5.25	4.73	4.95	5.21	5.22	5.24	5.15	4.56	5.30
INT	4.70	5.18	5.60	5.50	5.15	5.04	4.70	5.30	5.22	5.33	5.53	5.10	4.50	4.95
ART INT	5.18	5.21	5.15	4.88	4.67	4.40	3.70	5.39	5.04	4.60	4.45	4.21	3.46	3.72
Koch	4.80	4.89	4.94	5.04	4.62	5.00	5.07	4.63	4.95	5.21	5.01	4.78	4.47	4.47
ATS	6.04	5.97	5.95	5.56	5.01	5.10	4.62	8.41	7.30	6.24	5.64	5.14	4.72	4.89
large design (4*6)														
parametric	5.07	5.30	5.40	5.35	5.38	5.61	5.90	4.93	5.21	5.38	5.33	5.29	5.64	5.92
parametric HF-adj	3.45	4.00	4.30	4.24	4.65	4.94	5.07	3.50	3.96	4.27	4.25	4.65	4.91	5.05
van der Waerden	4.77	4.84	4.90	4.68	4.79	5.56	5.50	4.77	4.84	4.90	4.68	4.79	5.56	5.50
KWF	4.80	4.86	4.96	4.84	4.89	5.60	5.58	4.80	4.86	4.96	4.84	4.89	5.60	5.58
Puri & Sen INT	4.83	5.05	5.62	5.80	5.24	6.09	5.88	4.83	5.05	5.62	5.80	5.24	6.09	5.88
Puri & Sen	4.80	5.18	5.64	5.71	5.69	5.38	5.38	4.80	5.18	5.64	5.71	5.69	5.38	5.38
INT	5.49	5.55	5.92	5.95	5.34	6.08	5.90	5.22	5.35	5.80	5.90	5.34	6.09	5.85
ART INT	5.20	4.95	4.82	4.62	4.01	4.01	3.77	6.14	5.66	5.24	4.92	4.03	4.12	3.85
Koch	3.43	3.84	4.11	4.10	4.54	5.20	5.25	3.43	3.84	4.11	4.10	4.54	5.20	5.25
ATS	4.28	4.56	4.95	5.14	4.91	4.72	4.78	5.49	5.28	5.40	5.33	5.04	4.80	5.02



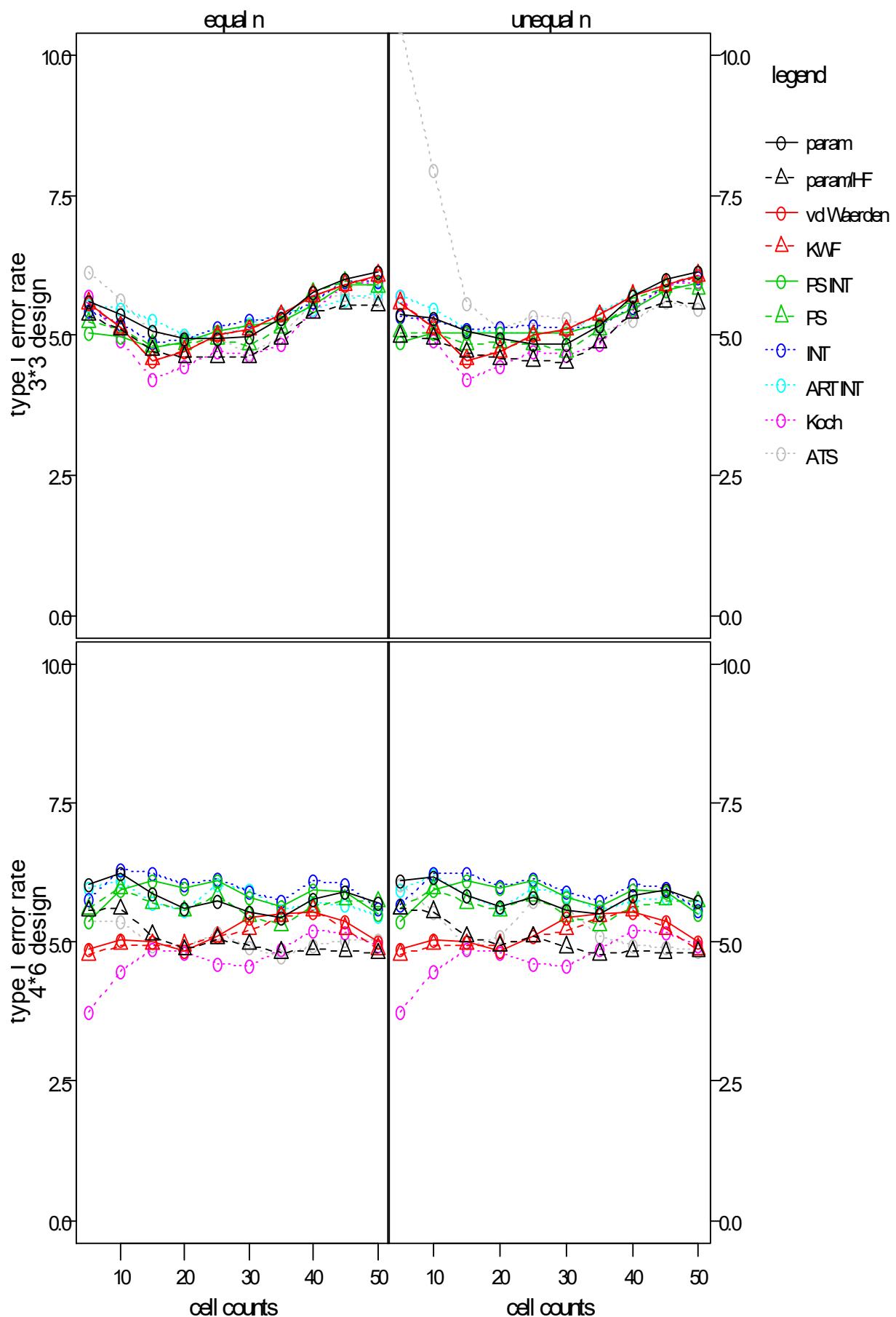
1. 5. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.42	4.72	5.09	4.99	5.21	5.24	4.87	5.35	5.08	4.75	4.93	5.24	4.81	5.08
parametric HF-adj	3.87	4.19	4.53	4.50	4.78	4.83	4.50	4.42	4.35	4.27	4.56	4.84	4.26	4.58
van der Waerden	4.32	4.50	4.67	4.82	4.72	5.03	5.39	5.38	5.25	5.19	5.29	4.71	5.10	5.12
KWF	4.48	4.60	4.72	4.89	4.67	5.03	5.37	5.45	5.31	5.22	5.30	4.71	5.11	5.18
Puri & Sen INT	4.23	4.68	5.21	5.36	4.84	4.85	5.01	5.20	5.24	5.34	5.55	5.35	4.71	4.90
Puri & Sen	4.45	4.74	5.12	5.25	4.79	5.11	5.13	4.82	5.09	5.29	5.38	5.15	4.79	5.38
INT	4.77	4.97	5.32	5.45	4.94	4.94	5.12	5.53	5.45	5.44	5.65	5.55	4.78	4.97
ART INT	6.40	6.40	6.41	6.59	7.54	8.73	9.62	6.57	6.41	6.31	6.69	8.04	9.18	10.87
Koch	4.23	4.25	4.46	4.89	4.56	4.74	5.15	4.70	4.70	4.85	5.12	4.84	5.11	4.78
ATS	5.77	5.45	5.39	5.42	4.84	5.01	4.87	8.64	7.40	6.30	5.67	5.15	5.30	4.97
large design (4*6)														
parametric	4.80	5.24	5.32	5.33	5.39	5.78	6.07	4.90	5.28	5.36	5.33	5.36	5.74	6.00
parametric HF-adj	3.25	3.88	4.29	4.30	4.58	4.91	4.98	3.30	3.85	4.29	4.31	4.58	4.90	4.93
van der Waerden	4.88	4.97	5.05	5.04	4.91	5.71	5.26	4.88	4.97	5.05	5.04	4.91	5.71	5.26
KWF	4.92	4.97	5.09	5.08	4.97	5.91	5.20	4.92	4.97	5.09	5.08	4.97	5.91	5.20
Puri & Sen INT	4.60	4.97	5.40	5.49	5.35	5.81	5.70	4.60	4.97	5.40	5.49	5.35	5.81	5.70
Puri & Sen	4.78	5.09	5.36	5.54	5.28	5.46	5.01	4.78	5.09	5.36	5.54	5.28	5.46	5.01
INT	4.75	5.05	5.47	5.70	5.47	5.84	5.68	4.82	5.09	5.40	5.60	5.46	5.89	5.75
ART INT	5.42	5.21	5.12	5.11	5.06	5.78	6.18	6.37	6.11	5.82	5.64	6.29	7.08	8.37
Koch	3.16	3.83	4.44	4.55	4.96	5.55	4.71	3.16	3.83	4.44	4.55	4.96	5.55	4.71
ATS	4.16	4.59	5.00	5.11	4.76	5.00	4.57	5.47	5.22	5.34	5.23	4.81	5.10	4.90



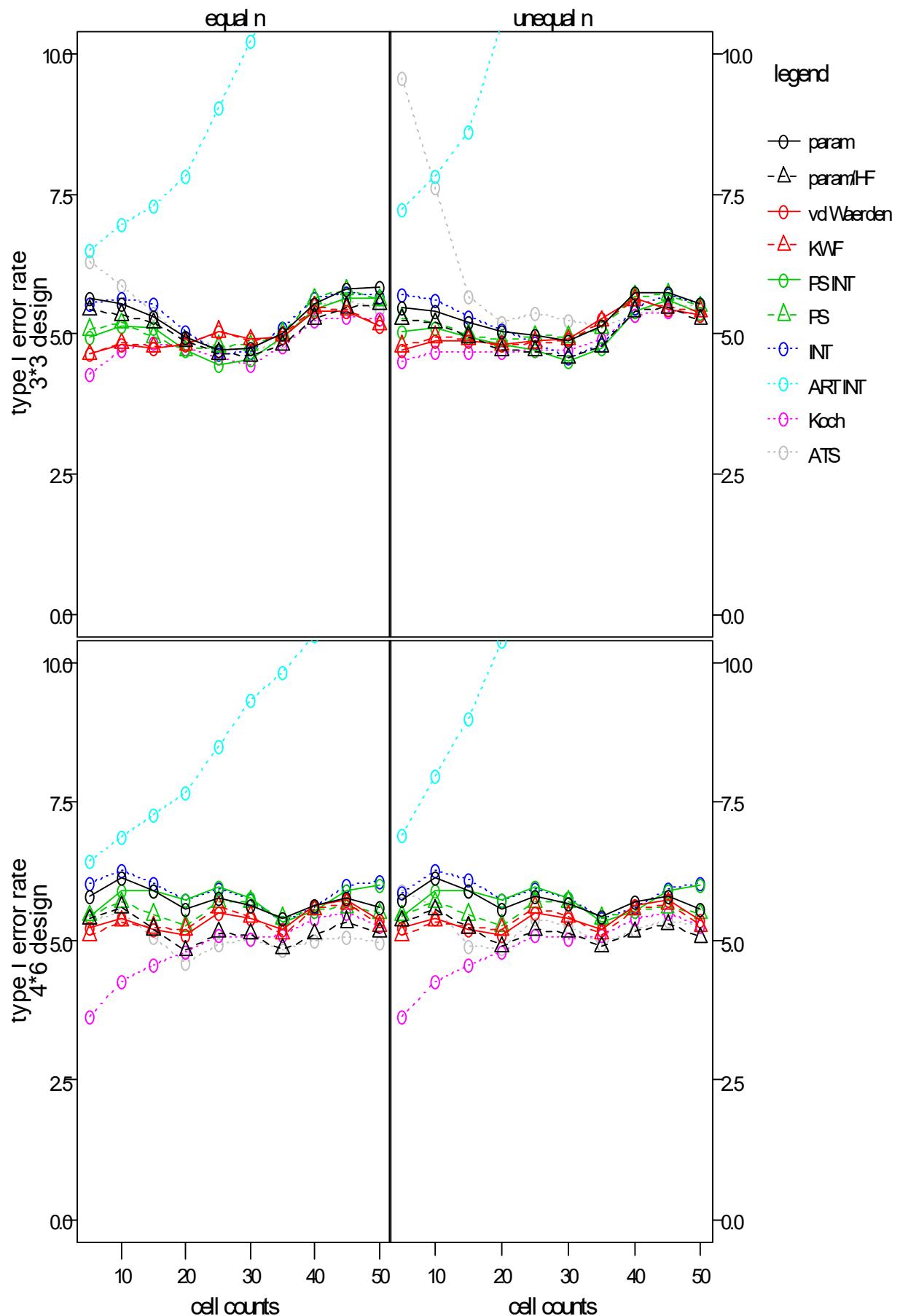
1. 5. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.60	5.36	5.06	4.95	4.96	5.76	6.12	5.38	5.30	5.08	4.93	4.84	5.69	6.12
parametric HF-adj	5.35	5.09	4.72	4.61	4.62	5.41	5.53	4.98	4.95	4.69	4.57	4.50	5.41	5.57
van der Waerden	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	5.57	5.14	4.56	4.71	5.10	5.70	6.07	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	5.03	4.99	4.78	4.86	5.18	5.55	5.91	4.88	5.03	5.04	5.05	5.05	5.46	5.93
Puri & Sen	5.23	5.10	4.81	4.85	4.82	5.76	5.87	5.05	5.03	4.85	4.86	4.71	5.67	5.83
INT	5.43	5.22	4.86	4.91	5.26	5.60	5.95	5.35	5.26	5.10	5.15	5.11	5.50	6.02
ART INT	5.53	5.46	5.28	5.00	5.21	5.47	5.77	5.70	5.46	5.10	5.04	5.05	5.74	6.09
Koch	5.69	4.90	4.20	4.46	4.65	5.42	5.95	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.13	5.64	5.04	4.97	4.69	5.60	5.63	10.53	7.94	5.57	5.09	5.30	5.28	5.48
large design (4*6)														
parametric	6.03	6.24	5.86	5.59	5.53	5.77	5.70	6.10	6.17	5.83	5.65	5.56	5.83	5.75
parametric HF-adj	5.56	5.59	5.12	4.86	4.95	4.86	4.80	5.60	5.54	5.09	4.93	4.91	4.83	4.82
van der Waerden	4.88	5.05	4.99	4.84	5.43	5.55	5.00	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.78	4.95	4.95	4.94	5.22	5.57	4.88	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	5.36	5.95	6.09	5.97	5.81	5.94	5.50	5.36	5.95	6.09	5.97	5.81	5.94	5.50
Puri & Sen	5.60	5.96	5.71	5.56	5.47	5.62	5.72	5.60	5.96	5.71	5.56	5.47	5.62	5.72
INT	5.78	6.29	6.24	6.03	5.89	6.09	5.61	5.68	6.25	6.24	6.01	5.90	6.02	5.56
ART INT	5.98	6.10	5.71	5.56	5.94	5.69	5.47	5.93	6.21	5.84	5.60	5.85	5.72	5.65
Koch	3.73	4.49	4.86	4.79	4.56	5.21	4.95	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.36	5.38	4.95	4.89	4.90	4.94	5.05	6.05	5.53	4.89	5.11	5.61	4.94	4.85



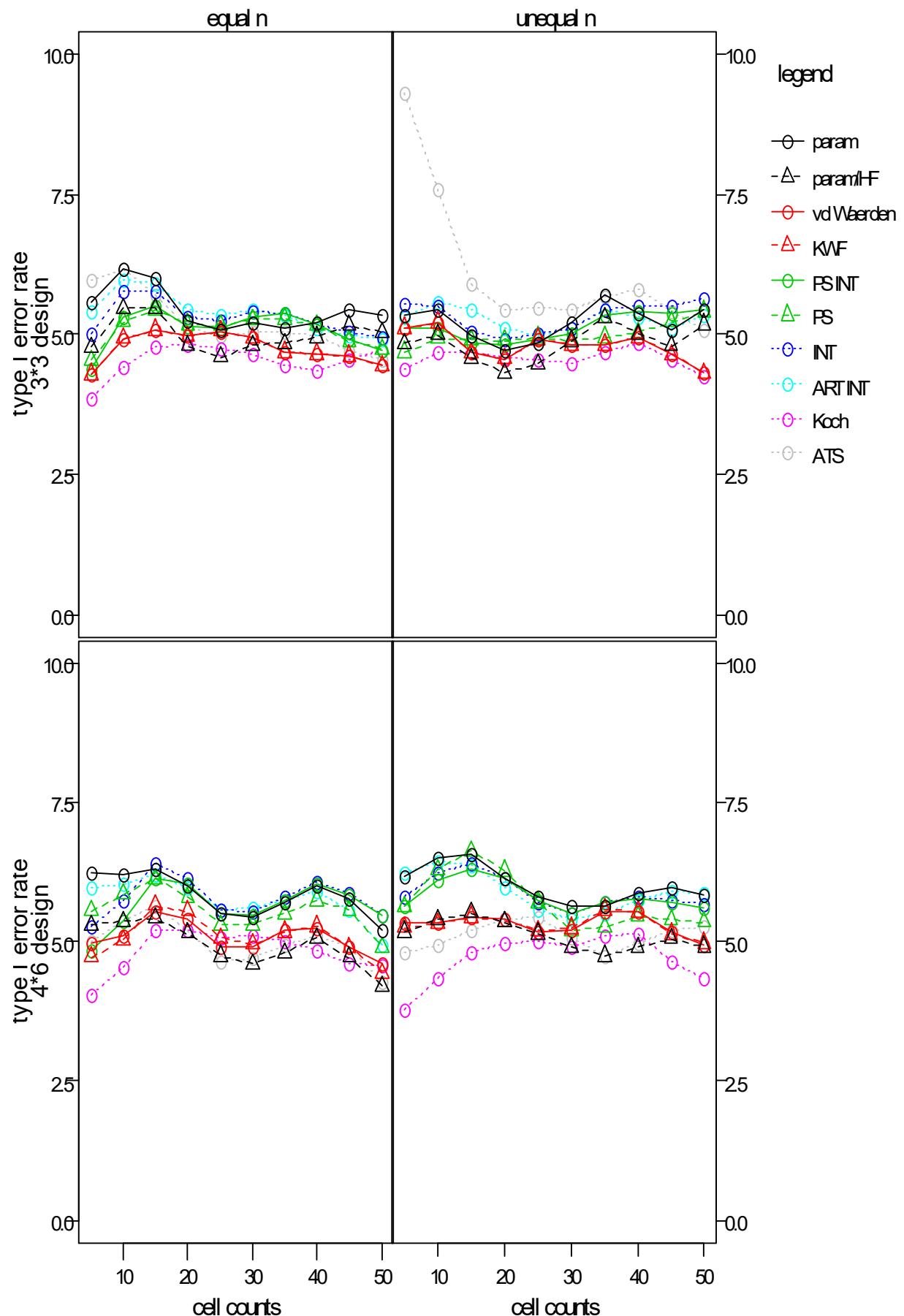
1. 5. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.65	5.54	5.32	4.94	4.75	5.54	5.83	5.48	5.41	5.20	5.03	4.88	5.74	5.52
parametric HF-adj	5.43	5.34	5.19	4.86	4.60	5.28	5.52	5.25	5.20	4.94	4.70	4.57	5.41	5.25
van der Waerden	4.63	4.81	4.74	4.80	4.90	5.41	5.15	4.71	4.88	4.88	4.81	4.92	5.65	5.34
KWF	4.63	4.83	4.76	4.81	4.89	5.47	5.15	4.78	4.94	4.90	4.79	4.89	5.61	5.40
Puri & Sen INT	4.95	5.15	5.09	4.72	4.53	5.45	5.62	5.05	5.11	4.94	4.81	4.51	5.41	5.38
Puri & Sen	5.08	5.19	4.95	4.70	4.80	5.62	5.60	5.27	5.19	4.99	4.88	4.94	5.67	5.48
INT	5.55	5.65	5.54	5.04	4.69	5.62	5.67	5.70	5.59	5.29	5.06	4.58	5.47	5.52
ART INT	6.48	6.97	7.29	7.82	10.21	12.82	14.62	7.23	7.83	8.62	10.54	13.89	16.34	19.32
Koch	4.28	4.70	4.83	4.75	4.44	5.25	5.28	4.50	4.69	4.67	4.66	4.70	5.34	5.38
ATS	6.29	5.86	5.36	4.94	4.69	5.49	5.43	9.58	7.60	5.66	5.21	5.25	5.34	5.53
large design (4*6)														
parametric	5.81	6.12	5.91	5.56	5.65	5.65	5.60	5.75	6.12	5.91	5.56	5.67	5.71	5.56
parametric HF-adj	5.40	5.61	5.21	4.83	5.12	5.12	5.15	5.35	5.56	5.24	4.90	5.15	5.16	5.06
van der Waerden	5.25	5.41	5.21	5.11	5.40	5.65	5.38	5.25	5.41	5.21	5.11	5.40	5.65	5.38
KWF	5.11	5.35	5.24	5.21	5.44	5.56	5.26	5.11	5.35	5.24	5.21	5.44	5.56	5.26
Puri & Sen INT	5.43	5.89	5.89	5.72	5.76	5.54	6.00	5.43	5.89	5.89	5.72	5.76	5.54	6.00
Puri & Sen	5.46	5.69	5.47	5.27	5.71	5.56	5.50	5.46	5.69	5.47	5.27	5.71	5.56	5.50
INT	6.05	6.26	6.03	5.74	5.74	5.60	6.07	5.86	6.26	6.09	5.74	5.76	5.61	6.03
ART INT	6.43	6.85	7.27	7.66	9.31	10.49	12.04	6.89	7.95	8.98	10.39	14.00	17.00	19.59
Koch	3.64	4.28	4.59	4.82	5.04	5.39	5.28	3.64	4.28	4.59	4.82	5.04	5.39	5.28
ATS	5.37	5.49	5.07	4.62	5.04	4.99	4.98	5.90	5.59	4.91	4.88	5.26	5.19	5.28



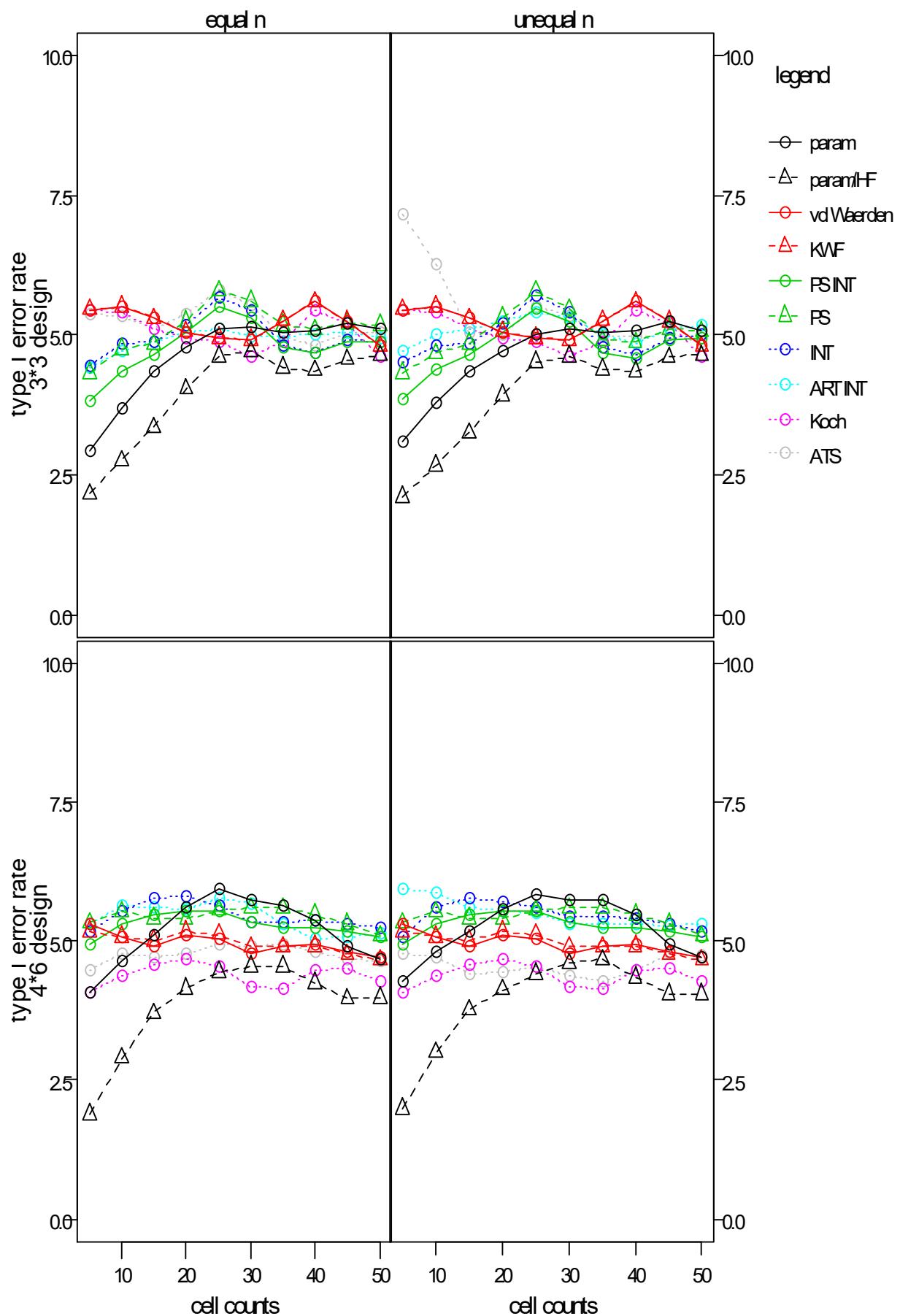
1. 5. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.56	6.15	5.99	5.25	5.20	5.20	5.35	5.33	5.42	4.99	4.72	5.22	5.38	5.44
parametric HF-adj	4.76	5.46	5.46	4.79	4.80	4.95	5.03	4.83	4.99	4.57	4.30	4.88	5.00	5.17
van der Waerden	4.28	4.92	5.08	4.97	4.93	4.65	4.43	5.11	5.21	4.67	4.56	4.81	4.95	4.30
KWF	4.28	4.92	5.08	4.97	4.93	4.65	4.43	5.11	5.21	4.67	4.56	4.81	4.95	4.30
Puri & Sen INT	4.39	5.31	5.51	5.15	5.30	5.17	4.72	5.10	5.11	4.84	4.81	5.01	5.40	5.45
Puri & Sen	4.53	5.22	5.42	5.17	5.26	5.15	4.73	4.68	4.92	4.90	4.89	4.89	5.03	5.40
INT	5.01	5.75	5.75	5.30	5.40	5.17	4.93	5.55	5.49	5.05	4.91	5.11	5.49	5.62
ART INT	5.39	5.97	5.89	5.44	5.44	5.09	4.92	5.30	5.57	5.44	5.12	5.10	5.29	5.34
Koch	3.85	4.40	4.78	4.81	4.64	4.35	4.70	4.38	4.66	4.66	4.58	4.49	4.84	4.25
ATS	5.96	6.15	5.71	5.10	5.05	4.97	4.55	9.31	7.58	5.89	5.44	5.43	5.81	5.08
large design (4*6)														
parametric	6.25	6.20	6.29	5.99	5.45	6.01	5.20	6.16	6.51	6.56	6.12	5.64	5.88	5.85
parametric HF-adj	5.30	5.36	5.42	5.15	4.60	5.06	4.20	5.17	5.40	5.52	5.35	4.90	4.90	4.91
van der Waerden	4.97	5.09	5.55	5.39	4.90	5.25	4.60	5.33	5.34	5.44	5.39	5.19	5.54	4.95
KWF	4.72	5.03	5.65	5.55	4.95	5.28	4.43	5.25	5.33	5.44	5.36	5.24	5.54	4.98
Puri & Sen INT	4.85	5.36	6.14	6.03	5.46	6.04	5.48	5.63	6.09	6.30	6.14	5.51	5.78	5.60
Puri & Sen	5.55	5.85	6.12	5.79	5.29	5.74	4.89	5.63	6.29	6.62	6.27	5.21	5.45	5.35
INT	5.27	5.75	6.41	6.14	5.54	6.07	5.48	5.81	6.24	6.40	6.12	5.52	5.79	5.67
ART INT	5.97	6.03	6.19	5.96	5.60	5.89	4.93	6.25	6.44	6.36	5.96	5.40	5.74	5.88
Koch	4.03	4.55	5.21	5.20	5.10	4.83	4.58	3.76	4.33	4.79	4.97	4.91	5.14	4.33
ATS	5.02	5.36	5.65	5.20	4.70	5.12	4.28	4.80	4.94	5.21	5.40	5.06	4.96	5.27



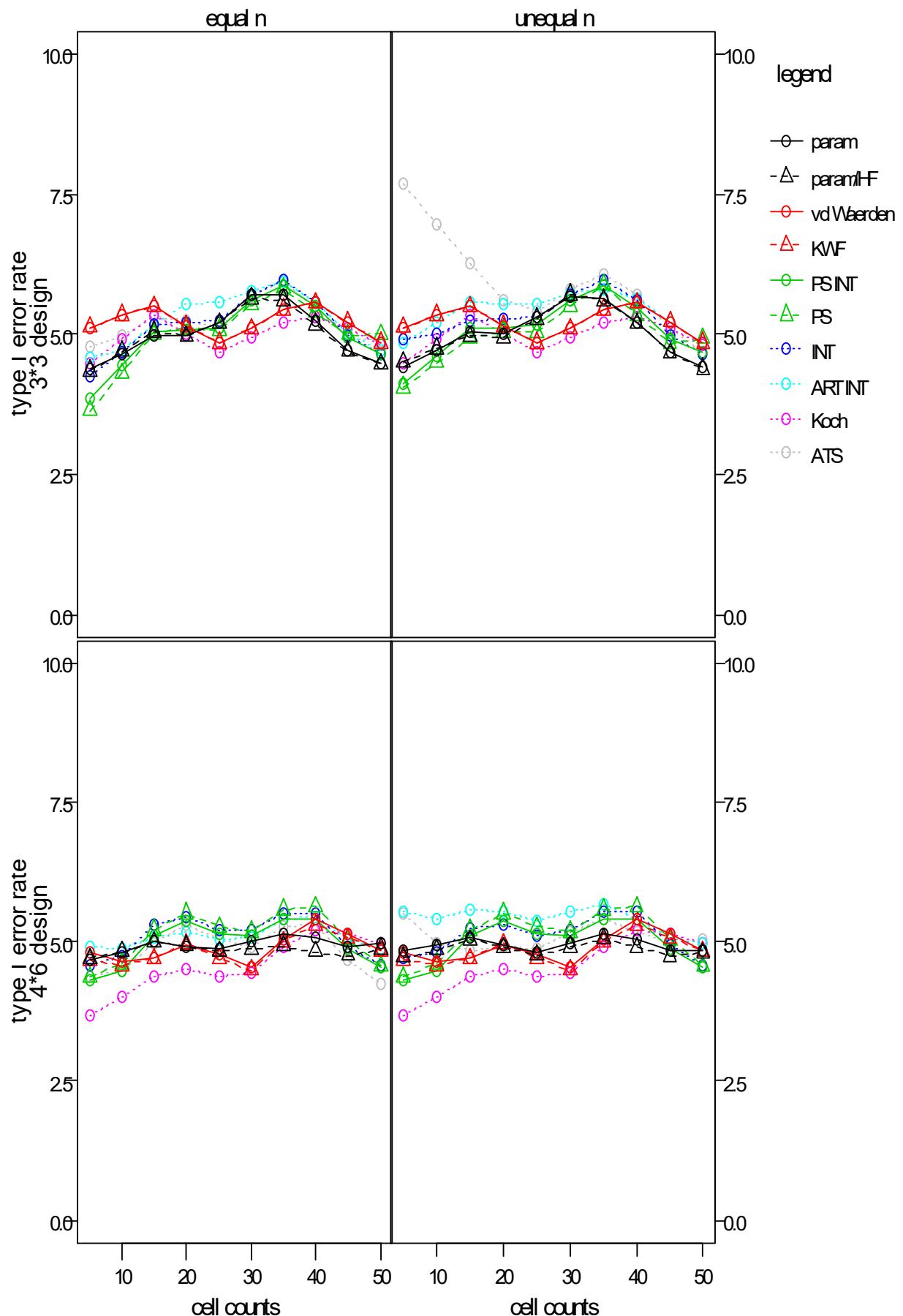
1. 5. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.93	3.70	4.34	4.79	5.15	5.06	5.10	3.09	3.79	4.35	4.71	5.12	5.07	5.08
parametric HF-adj	2.16	2.75	3.34	4.03	4.70	4.36	4.63	2.11	2.66	3.24	3.92	4.62	4.35	4.63
van der Waerden	5.45	5.50	5.29	5.05	4.91	5.59	4.80	5.45	5.50	5.29	5.05	4.91	5.59	4.80
KWF	5.45	5.50	5.29	5.05	4.91	5.59	4.80	5.45	5.50	5.29	5.05	4.91	5.59	4.80
Puri & Sen INT	3.83	4.36	4.65	5.04	5.30	4.66	4.88	3.84	4.38	4.64	5.03	5.24	4.59	4.93
Puri & Sen	4.31	4.74	4.83	5.24	5.61	5.09	5.18	4.31	4.67	4.84	5.31	5.46	4.86	5.06
INT	4.45	4.85	4.89	5.16	5.45	4.67	4.86	4.51	4.80	4.84	5.21	5.41	4.65	5.00
ART INT	4.41	4.71	4.86	5.05	4.97	5.00	4.93	4.70	5.00	5.12	5.24	5.32	4.85	5.18
Koch	5.45	5.40	5.09	4.93	4.61	5.44	4.61	5.45	5.40	5.09	4.93	4.61	5.44	4.61
ATS	5.36	5.35	5.09	5.36	5.53	4.82	5.05	7.14	6.26	5.05	5.00	5.34	4.96	4.87
large design (4*6)														
parametric	4.08	4.64	5.09	5.61	5.74	5.36	4.67	4.26	4.80	5.16	5.56	5.75	5.47	4.72
parametric HF-adj	1.88	2.89	3.70	4.14	4.54	4.24	3.98	1.99	2.99	3.77	4.12	4.60	4.35	4.05
van der Waerden	5.30	5.08	4.90	5.10	4.78	4.95	4.72	5.30	5.08	4.90	5.10	4.78	4.95	4.72
KWF	5.17	5.08	5.01	5.17	4.89	4.91	4.65	5.17	5.08	5.01	5.17	4.89	4.91	4.65
Puri & Sen INT	4.93	5.29	5.46	5.54	5.33	5.24	5.07	4.93	5.29	5.46	5.54	5.33	5.24	5.07
Puri & Sen	5.33	5.53	5.41	5.39	5.60	5.47	5.10	5.33	5.53	5.41	5.39	5.60	5.47	5.10
INT	5.18	5.55	5.78	5.81	5.35	5.36	5.23	5.08	5.59	5.76	5.69	5.45	5.40	5.18
ART INT	5.31	5.64	5.61	5.58	5.67	5.05	5.13	5.92	5.86	5.59	5.54	5.30	5.29	5.32
Koch	4.06	4.39	4.56	4.66	4.16	4.46	4.28	4.06	4.39	4.56	4.66	4.16	4.46	4.28
ATS	4.48	4.76	4.71	4.78	4.92	4.79	4.63	4.76	4.71	4.42	4.44	4.39	4.47	4.75



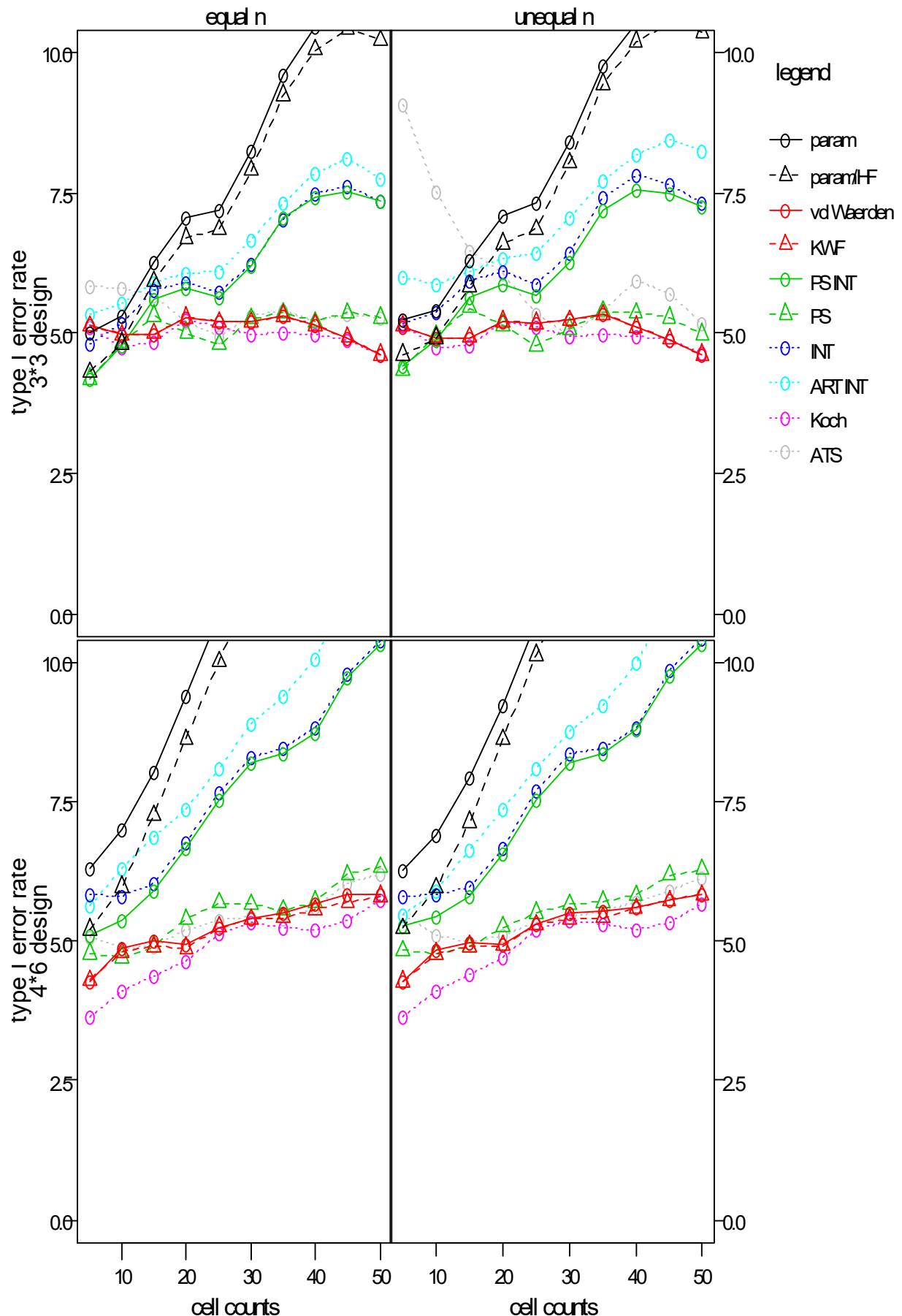
1. 5. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.38	4.64	4.97	4.96	5.70	5.25	4.48	4.40	4.72	5.03	5.00	5.67	5.21	4.40
parametric HF-adj	4.35	4.69	5.04	4.96	5.64	5.18	4.47	4.50	4.75	4.97	4.93	5.70	5.19	4.38
van der Waerden	5.12	5.34	5.49	5.14	5.10	5.56	4.85	5.12	5.34	5.49	5.14	5.10	5.56	4.85
KWF	5.12	5.34	5.49	5.14	5.10	5.56	4.85	5.12	5.34	5.49	5.14	5.10	5.56	4.85
Puri & Sen INT	3.86	4.46	5.04	5.06	5.61	5.51	4.65	4.11	4.62	5.11	5.12	5.61	5.48	4.67
Puri & Sen	3.63	4.30	5.00	5.11	5.52	5.38	5.00	4.05	4.49	4.94	5.04	5.51	5.34	4.92
INT	4.26	4.69	5.17	5.20	5.71	5.56	4.65	4.90	5.01	5.24	5.26	5.70	5.59	4.65
ART INT	4.57	4.71	5.17	5.55	5.76	5.58	4.72	4.83	5.20	5.57	5.53	5.74	5.62	4.85
Koch	4.48	4.90	5.34	5.00	4.93	5.30	4.80	4.48	4.90	5.34	5.00	4.93	5.30	4.80
ATS	4.77	4.96	5.30	5.24	5.67	5.43	4.88	7.69	6.97	6.27	5.61	5.81	5.71	4.66
large design (4*6)														
parametric	4.68	4.80	4.99	4.92	4.99	5.08	4.97	4.83	4.94	5.08	4.93	4.97	5.05	4.85
parametric HF-adj	4.70	4.82	5.00	4.92	4.86	4.82	4.87	4.72	4.85	5.03	4.89	4.91	4.89	4.80
van der Waerden	4.80	4.65	4.71	4.95	4.55	5.39	4.83	4.80	4.65	4.71	4.95	4.55	5.39	4.83
KWF	4.67	4.56	4.69	4.96	4.49	5.30	4.83	4.67	4.56	4.69	4.96	4.49	5.30	4.83
Puri & Sen INT	4.32	4.49	5.12	5.38	5.11	5.39	4.55	4.32	4.49	5.12	5.38	5.11	5.39	4.55
Puri & Sen	4.37	4.61	5.21	5.51	5.17	5.62	4.57	4.37	4.61	5.21	5.51	5.17	5.62	4.57
INT	4.57	4.75	5.29	5.43	5.19	5.49	4.57	4.70	4.79	5.23	5.30	5.19	5.54	4.58
ART INT	4.90	4.88	5.08	5.16	5.08	5.44	4.88	5.54	5.41	5.56	5.54	5.53	5.41	4.98
Koch	3.68	4.00	4.36	4.51	4.44	5.21	4.97	3.68	4.00	4.36	4.51	4.44	5.21	4.97
ATS	4.37	4.47	4.97	5.29	4.91	5.30	4.23	5.49	4.97	4.83	4.90	5.18	5.17	5.05



1. 5. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.02	5.29	6.26	7.04	8.24	10.44	10.58	5.23	5.41	6.29	7.09	8.42	10.51	10.95
parametric HF-adj	4.30	4.81	5.92	6.69	7.89	10.04	10.21	4.62	4.91	5.84	6.59	8.04	10.19	10.36
van der Waerden	5.13	4.96	4.99	5.28	5.20	5.14	4.61	5.12	4.92	4.92	5.21	5.23	5.11	4.61
KWF	5.13	4.96	4.99	5.28	5.20	5.14	4.61	5.12	4.92	4.92	5.21	5.23	5.11	4.61
Puri & Sen INT	4.18	4.78	5.59	5.81	6.19	7.41	7.35	4.41	4.89	5.64	5.88	6.25	7.55	7.25
Puri & Sen	4.18	4.82	5.31	5.01	5.25	5.20	5.28	4.33	4.97	5.45	5.14	5.08	5.36	4.98
INT	4.82	5.18	5.76	5.90	6.22	7.47	7.36	5.17	5.38	5.93	6.10	6.44	7.80	7.33
ART INT	5.33	5.53	5.90	6.07	6.66	7.86	7.74	6.00	5.88	6.08	6.33	7.05	8.18	8.25
Koch	5.10	4.75	4.83	5.25	4.96	4.96	4.61	5.14	4.75	4.79	5.21	4.94	4.95	4.63
ATS	5.83	5.79	5.67	5.21	5.31	5.21	5.26	9.08	7.52	6.46	6.06	4.94	5.92	5.18
large design (4*6)														
parametric	6.30	6.99	8.03	9.38	12.14	14.47	17.12	6.28	6.90	7.92	9.22	12.11	14.47	17.07
parametric HF-adj	5.21	5.97	7.25	8.62	11.36	13.74	16.22	5.23	5.95	7.14	8.61	11.41	13.90	16.22
van der Waerden	4.26	4.88	5.00	4.93	5.42	5.67	5.85	4.26	4.85	4.96	4.94	5.50	5.59	5.82
KWF	4.30	4.80	4.90	4.88	5.39	5.56	5.80	4.28	4.78	4.91	4.92	5.40	5.59	5.82
Puri & Sen INT	5.12	5.38	5.90	6.66	8.19	8.74	10.32	5.28	5.44	5.80	6.56	8.19	8.78	10.32
Puri & Sen	4.78	4.71	4.91	5.39	5.66	5.71	6.33	4.83	4.76	4.90	5.25	5.66	5.82	6.28
INT	5.82	5.81	6.05	6.78	8.29	8.81	10.38	5.80	5.84	5.97	6.68	8.35	8.81	10.43
ART INT	5.64	6.29	6.85	7.35	8.89	10.04	11.90	5.46	5.90	6.62	7.35	8.76	9.99	11.77
Koch	3.65	4.10	4.38	4.64	5.34	5.20	5.74	3.65	4.10	4.41	4.71	5.38	5.21	5.67
ATS	5.07	4.88	4.90	5.19	5.43	5.60	6.20	5.47	5.10	4.97	5.12	5.44	5.69	6.15

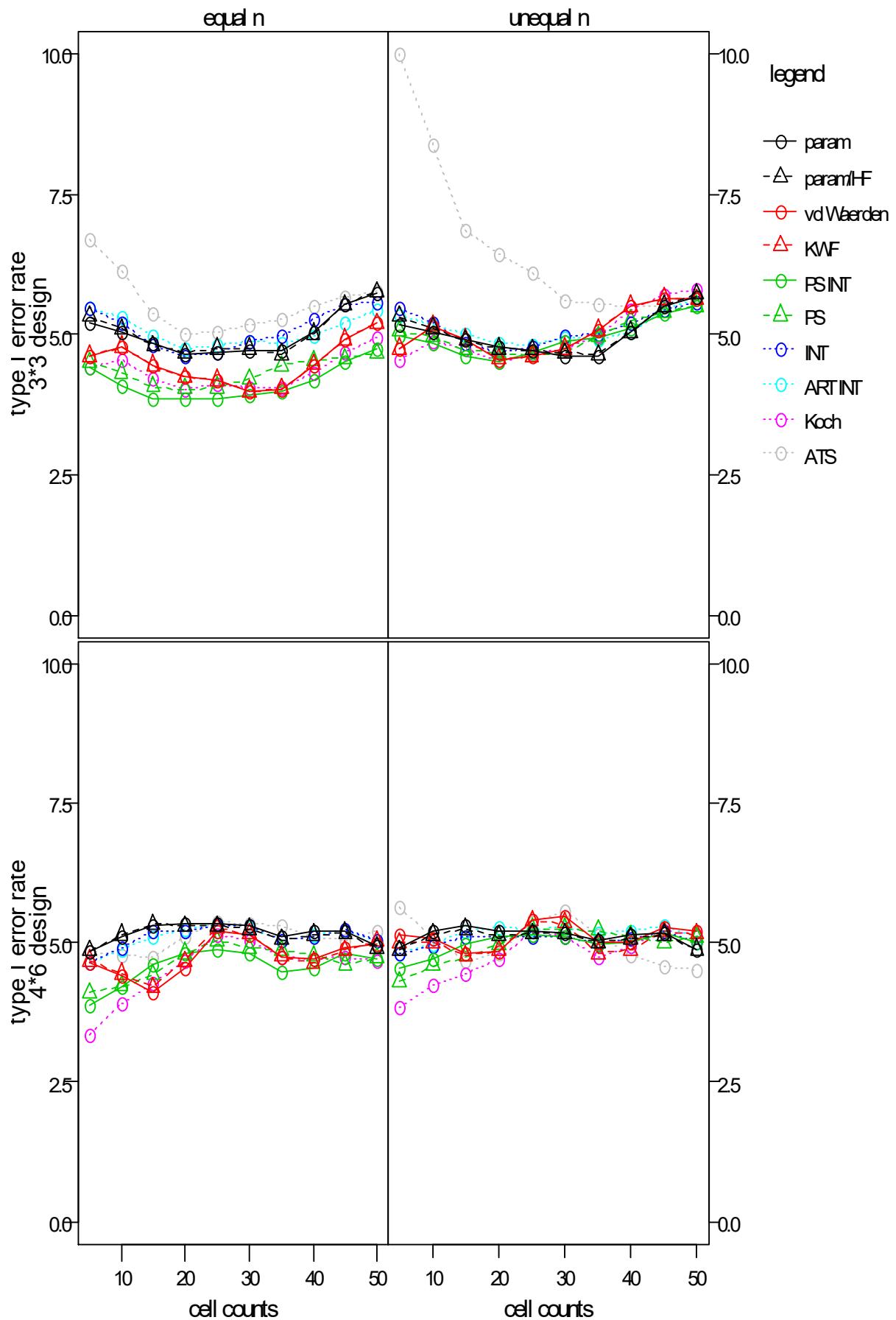


1. 6. Main effect B - AB significant (effects $ab_{ij}=0.5*s$)

1. 6. 1. equal correlations on B ($r=0.3$)

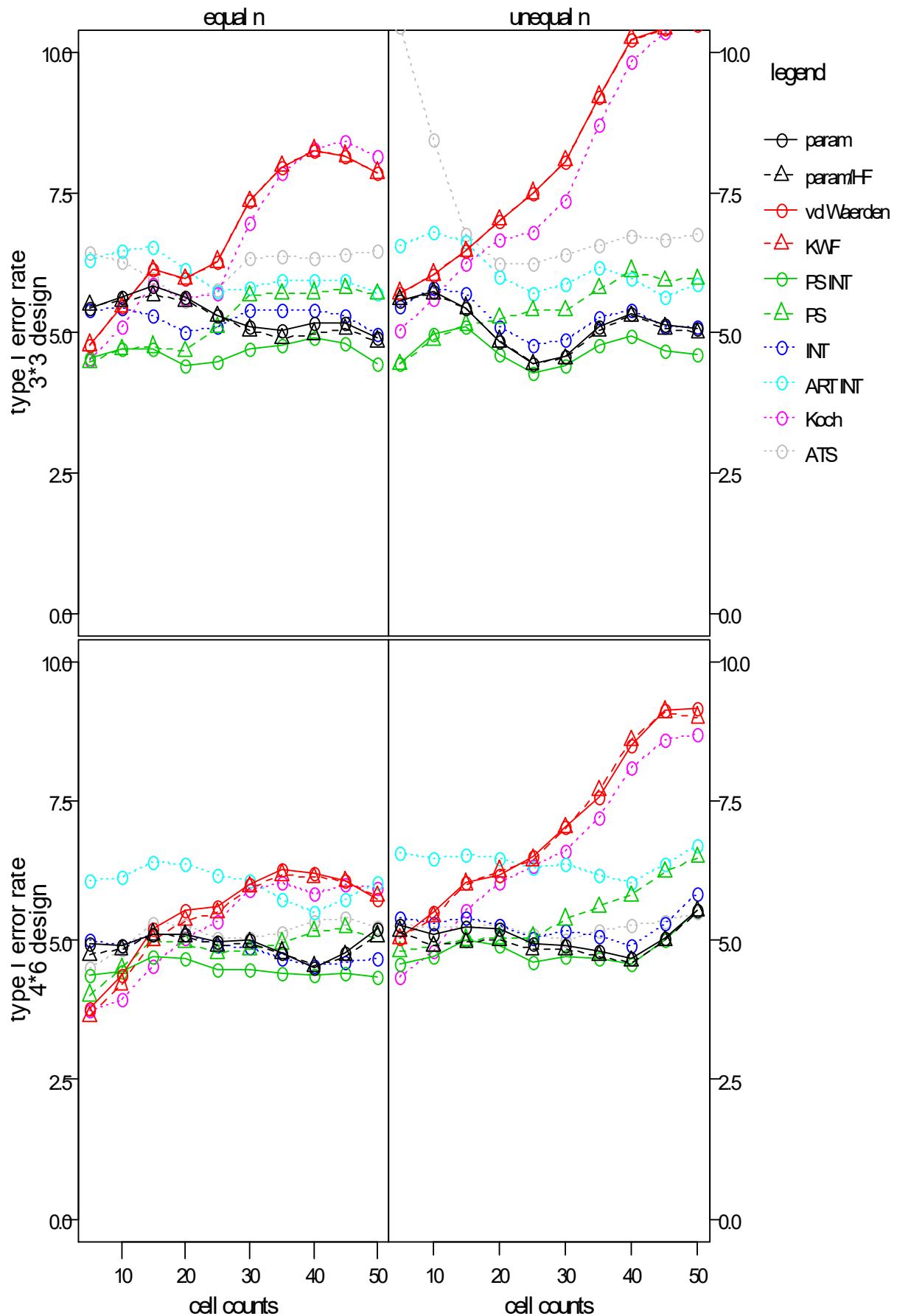
1. 6. 1. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.20	5.05	4.85	4.65	4.72	5.05	5.73	5.18	5.04	4.91	4.78	4.62	5.03	5.68
parametric HF-adj	5.32	5.10	4.80	4.66	4.74	5.01	5.75	5.32	5.11	4.89	4.74	4.66	5.04	5.72
van der Waerden	4.61	4.78	4.45	4.24	3.98	4.46	5.19	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.61	4.78	4.45	4.24	3.98	4.46	5.19	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.40	4.08	3.86	3.84	3.91	4.19	4.75	4.97	4.85	4.60	4.51	4.89	5.12	5.50
Puri & Sen	4.50	4.31	4.06	4.03	4.21	4.54	4.67	5.05	4.97	4.72	4.66	4.66	5.24	5.50
INT	5.48	5.20	4.81	4.60	4.88	5.26	5.58	5.47	5.21	4.84	4.66	4.96	5.19	5.57
ART INT	5.48	5.31	4.96	4.74	4.88	4.96	5.42	5.35	5.16	5.01	4.84	4.95	5.04	5.65
Koch	4.41	4.54	4.21	4.01	4.06	4.32	4.93	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.68	6.14	5.38	5.00	5.16	5.50	5.75	9.98	8.36	6.84	6.44	5.61	5.50	5.69
ATS (uncorr.)								10.29	8.50	6.75	6.36	5.74	5.64	5.85
large design (4*6)														
parametric	4.83	5.12	5.32	5.34	5.29	5.20	4.93	4.91	5.19	5.30	5.20	5.18	5.15	4.88
parametric HF-adj	4.85	5.14	5.33	5.29	5.24	5.14	4.91	4.86	5.14	5.24	5.12	5.16	5.08	4.88
van der Waerden	4.65	4.41	4.11	4.53	5.15	4.69	4.98	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	4.67	4.45	4.20	4.66	5.15	4.64	5.02	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	3.86	4.22	4.61	4.79	4.79	4.55	4.71	4.55	4.71	4.96	5.12	5.12	5.01	5.01
Puri & Sen	4.10	4.22	4.42	4.81	4.89	4.76	4.72	4.30	4.59	4.75	4.96	5.24	5.12	5.10
INT	4.65	4.90	5.19	5.22	5.29	5.10	5.03	4.80	4.95	5.11	5.12	5.10	5.06	5.01
ART INT	4.65	4.86	5.11	5.24	5.28	5.14	5.03	4.80	4.97	5.21	5.28	5.28	5.20	5.10
Koch	3.33	3.92	4.26	4.66	5.05	4.70	4.67	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.85	4.76	4.75	5.09	5.35	5.11	5.20	5.64	5.06	4.66	4.79	5.56	4.76	4.52
ATS (uncorr.)								5.62	5.19	4.81	4.90	5.69	4.81	4.72



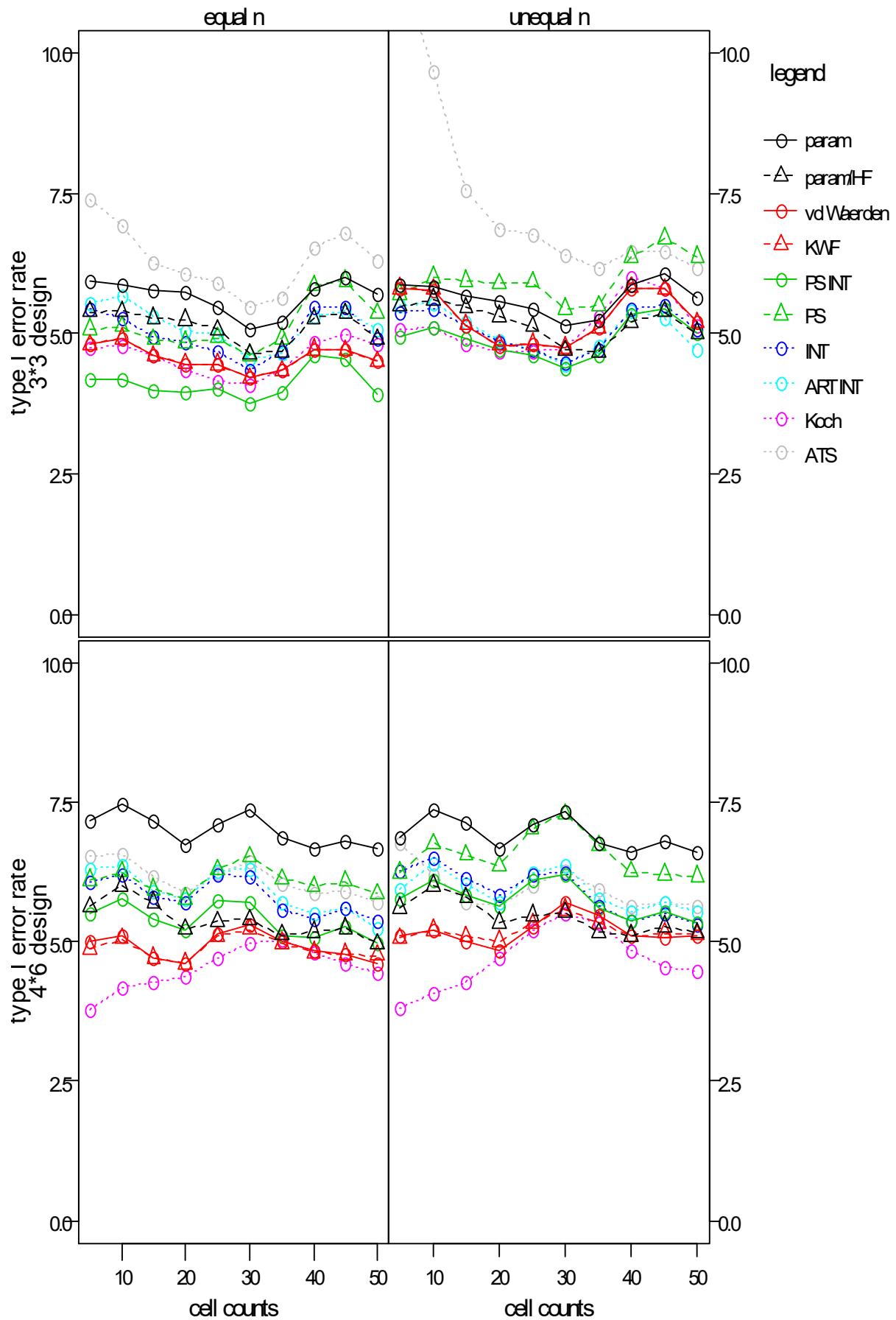
1. 6. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.42	5.64	5.83	5.65	5.09	5.16	4.90	5.58	5.74	5.45	4.83	4.59	5.35	5.08
parametric HF-adj	5.48	5.56	5.66	5.56	5.04	4.98	4.85	5.58	5.70	5.44	4.84	4.53	5.29	5.00
van der Waerden	4.78	5.46	6.12	5.96	7.34	8.25	7.85	5.70	6.03	6.45	7.00	8.06	10.24	10.50
KWF	4.78	5.46	6.12	5.96	7.34	8.25	7.85	5.70	6.03	6.45	7.00	8.06	10.24	10.50
Puri & Sen INT	4.53	4.71	4.70	4.42	4.72	4.90	4.43	4.46	4.96	5.09	4.60	4.40	4.94	4.60
Puri & Sen	4.48	4.70	4.75	4.66	5.66	5.71	5.68	4.43	4.86	5.14	5.25	5.39	6.10	5.95
INT	5.40	5.44	5.30	5.01	5.40	5.40	4.96	5.48	5.80	5.71	5.10	4.88	5.39	5.10
ART INT	6.30	6.45	6.52	6.14	5.81	5.94	5.70	6.55	6.78	6.61	6.00	5.85	5.96	5.85
Koch	4.52	5.09	5.85	5.60	6.96	8.29	8.15	5.05	5.61	6.24	6.65	7.34	9.84	10.67
ATS	6.43	6.25	5.97	5.58	6.32	6.34	6.45	10.46	8.43	6.77	6.24	6.40	6.72	6.77
ATS (uncorr.)								10.48	8.35	6.50	5.76	5.76	5.96	5.99
large design (4*6)														
parametric	4.93	4.90	5.12	5.12	5.00	4.51	5.19	5.27	5.10	5.24	5.22	4.92	4.67	5.55
parametric HF-adj	4.73	4.83	5.11	5.08	4.95	4.53	5.07	5.15	4.90	4.96	5.00	4.84	4.62	5.52
van der Waerden	3.76	4.39	5.21	5.53	6.01	6.21	5.75	5.05	5.51	6.03	6.16	7.02	8.51	9.15
KWF	3.63	4.21	5.01	5.35	5.95	6.12	5.78	5.03	5.42	6.01	6.24	7.01	8.59	9.00
Puri & Sen INT	4.38	4.45	4.70	4.67	4.49	4.39	4.35	4.58	4.72	4.99	4.90	4.71	4.58	5.55
Puri & Sen	4.01	4.50	5.01	4.95	4.83	5.16	5.05	4.80	4.90	5.01	5.04	5.38	5.79	6.48
INT	4.99	4.89	5.11	5.09	4.88	4.53	4.68	5.40	5.31	5.40	5.28	5.17	4.89	5.84
ART INT	6.08	6.15	6.39	6.36	6.08	5.51	6.02	6.58	6.46	6.53	6.47	6.36	6.05	6.69
Koch	3.75	3.95	4.53	5.04	5.89	5.85	5.93	4.33	4.80	5.55	6.05	6.61	8.10	8.70
ATS	4.50	4.84	5.30	5.26	5.05	5.34	5.25	5.28	5.25	5.25	5.26	5.01	5.28	5.49
ATS (uncorr.)								5.35	5.39	5.40	5.39	5.28	5.60	6.27



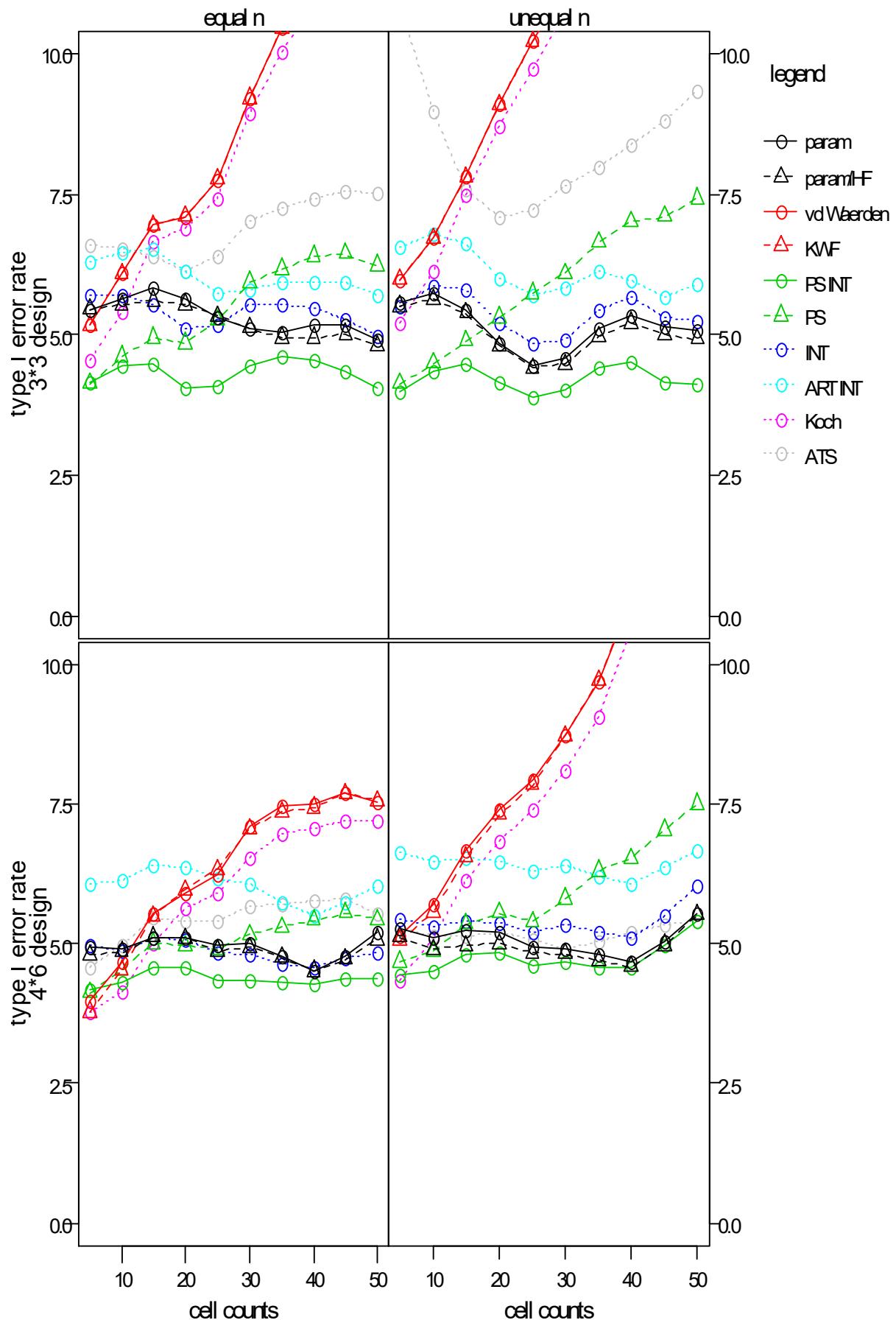
1. 6. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.93	5.85	5.75	5.72	5.08	5.79	5.70	5.85	5.82	5.66	5.56	5.15	5.86	5.63
parametric HF-adj	5.38	5.39	5.28	5.24	4.64	5.26	4.90	5.48	5.60	5.46	5.31	4.70	5.20	5.01
van der Waerden	4.80	4.91	4.60	4.46	4.20	4.71	4.50	5.80	5.78	5.15	4.79	4.74	5.81	5.20
KWF	4.80	4.91	4.60	4.46	4.20	4.71	4.50	5.80	5.78	5.15	4.79	4.74	5.81	5.20
Puri & Sen INT	4.18	4.19	3.98	3.94	3.76	4.61	3.93	4.95	5.09	4.91	4.71	4.38	5.34	5.00
Puri & Sen	5.07	5.12	4.89	4.84	4.62	5.85	5.35	5.70	6.00	5.93	5.89	5.44	6.36	6.36
INT	5.42	5.28	4.95	4.83	4.36	5.47	4.91	5.37	5.43	5.14	4.85	4.47	5.42	5.06
ART INT	5.55	5.68	5.31	5.04	4.55	5.32	5.07	5.50	5.54	5.19	4.88	4.46	5.41	4.71
Koch	4.75	4.77	4.62	4.36	4.07	4.84	4.80	5.06	5.09	4.80	4.67	4.74	5.99	5.13
ATS	7.40	6.91	6.26	6.05	5.47	6.51	6.29	11.59	9.66	7.54	6.85	6.40	6.45	6.16
ATS (uncorr.)								11.74	9.84	7.78	6.92	6.25	6.62	6.40
large design (4*6)														
parametric	7.18	7.46	7.15	6.74	7.38	6.66	6.65	6.88	7.36	7.12	6.66	7.33	6.60	6.61
parametric HF-adj	5.63	6.01	5.71	5.22	5.40	5.17	4.96	5.61	6.01	5.79	5.34	5.52	5.11	5.16
van der Waerden	5.01	5.10	4.70	4.60	5.30	4.85	4.62	5.10	5.20	5.01	4.85	5.70	5.10	5.12
KWF	4.88	5.05	4.71	4.61	5.22	4.81	4.75	5.06	5.21	5.10	5.01	5.58	5.11	5.13
Puri & Sen INT	5.51	5.76	5.40	5.22	5.71	5.08	4.96	5.78	6.10	5.82	5.65	6.19	5.36	5.33
Puri & Sen	6.11	6.25	5.94	5.77	6.52	5.99	5.86	6.24	6.76	6.55	6.36	7.29	6.25	6.17
INT	6.08	6.20	5.81	5.71	6.16	5.41	5.36	6.26	6.51	6.12	5.85	6.24	5.38	5.30
ART INT	6.30	6.36	5.91	5.76	6.31	5.50	5.24	5.93	6.39	6.02	5.70	6.36	5.55	5.53
Koch	3.76	4.19	4.26	4.38	4.96	4.82	4.45	3.80	4.08	4.29	4.69	5.50	4.83	4.47
ATS	6.53	6.57	6.16	5.86	6.45	5.86	5.71	6.77	6.19	5.69	5.64	6.28	5.65	5.62
ATS (uncorr.)								7.00	6.19	5.54	5.51	6.33	5.75	5.70



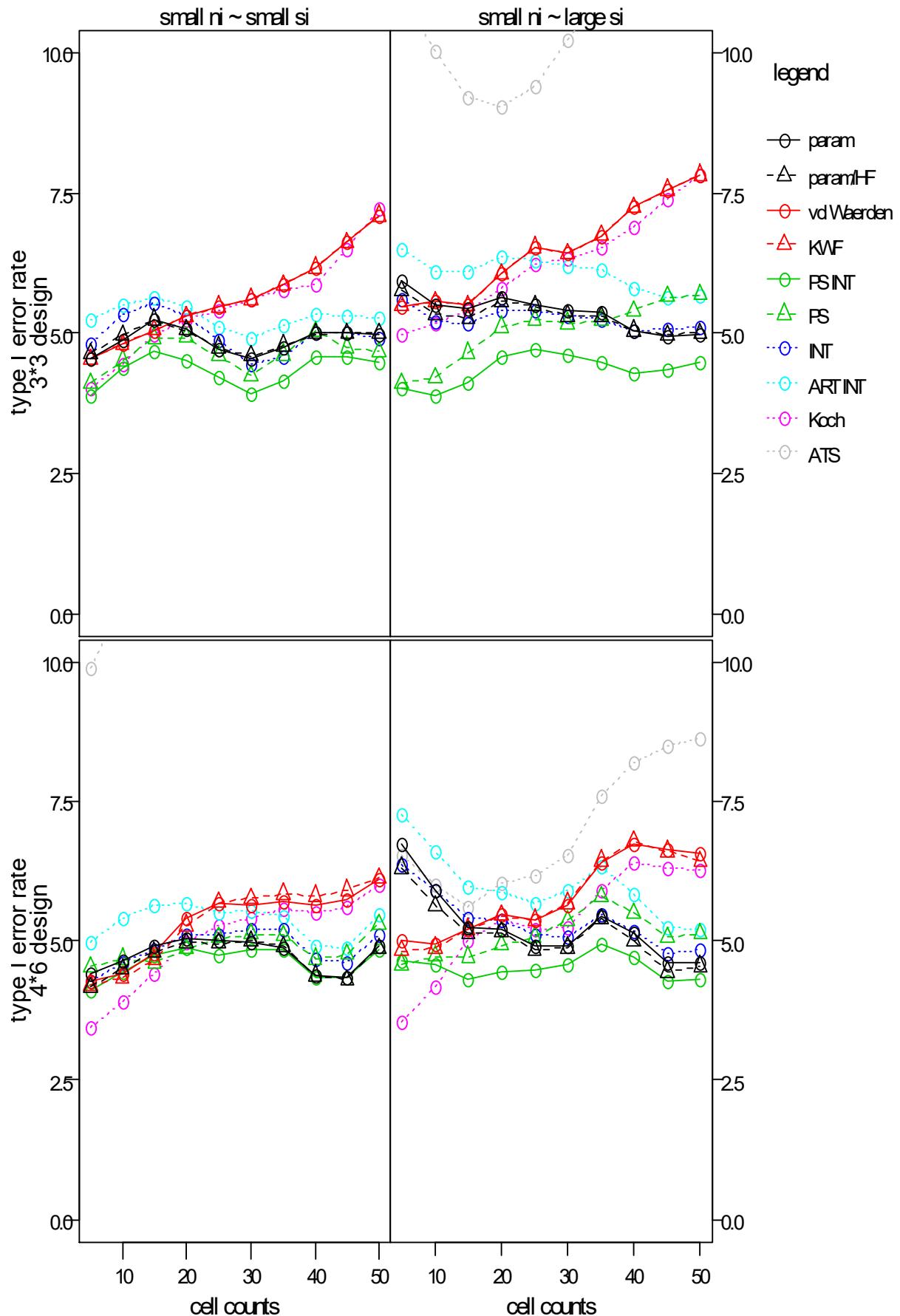
1. 6. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.42	5.64	5.83	5.65	5.09	5.16	4.90	5.58	5.74	5.45	4.83	4.59	5.35	5.08
parametric HF-adj	5.45	5.53	5.61	5.54	5.12	4.95	4.80	5.50	5.62	5.38	4.80	4.47	5.21	4.92
van der Waerden	5.16	6.08	6.95	7.10	9.21	11.40	11.27	5.98	6.71	7.80	9.09	11.22	15.69	18.12
KWF	5.16	6.08	6.95	7.10	9.21	11.40	11.27	5.98	6.71	7.80	9.09	11.22	15.69	18.12
Puri & Sen INT	4.15	4.45	4.47	4.06	4.45	4.56	4.06	3.98	4.33	4.47	4.16	4.00	4.50	4.10
Puri & Sen	4.13	4.62	4.94	4.85	5.93	6.40	6.23	4.13	4.49	4.89	5.31	6.08	7.01	7.42
INT	5.70	5.71	5.52	5.10	5.53	5.46	4.98	5.50	5.85	5.80	5.20	4.92	5.66	5.24
ART INT	6.30	6.45	6.52	6.14	5.81	5.94	5.70	6.56	6.80	6.62	6.00	5.84	5.98	5.89
Koch	4.53	5.41	6.65	6.89	8.94	10.93	11.18	5.21	6.12	7.49	8.69	10.74	14.78	17.52
ATS	6.58	6.54	6.38	6.14	7.01	7.42	7.52	10.85	8.97	7.59	7.09	7.66	8.39	9.34
ATS (uncorr.)								10.73	8.64	7.05	6.49	6.50	7.00	6.85
large design (4*6)														
parametric	4.93	4.90	5.12	5.12	5.00	4.51	5.19	5.27	5.10	5.24	5.22	4.92	4.67	5.55
parametric HF-adj	4.80	4.85	5.12	5.09	4.93	4.51	5.07	5.12	4.89	4.96	5.00	4.82	4.59	5.52
van der Waerden	3.98	4.66	5.54	5.89	7.09	7.51	7.53	5.15	5.69	6.65	7.40	8.71	11.16	12.75
KWF	3.78	4.53	5.50	5.96	7.05	7.43	7.56	5.05	5.57	6.55	7.31	8.71	11.14	12.78
Puri & Sen INT	4.18	4.31	4.59	4.56	4.33	4.28	4.37	4.45	4.51	4.82	4.83	4.66	4.58	5.40
Puri & Sen	4.12	4.53	5.01	4.96	5.16	5.42	5.43	4.68	4.86	5.35	5.55	5.81	6.53	7.50
INT	4.97	4.86	5.10	5.08	4.81	4.58	4.85	5.45	5.30	5.40	5.38	5.34	5.10	6.02
ART INT	6.08	6.15	6.39	6.36	6.08	5.51	6.02	6.62	6.48	6.53	6.47	6.40	6.06	6.65
Koch	3.78	4.14	5.00	5.62	6.54	7.05	7.21	4.35	5.11	6.12	6.83	8.09	10.62	11.71
ATS	4.57	4.97	5.47	5.42	5.66	5.76	5.55	5.27	5.14	5.14	5.22	4.92	5.20	5.40
ATS (uncorr.)								5.33	5.41	5.56	5.65	5.69	6.05	6.67



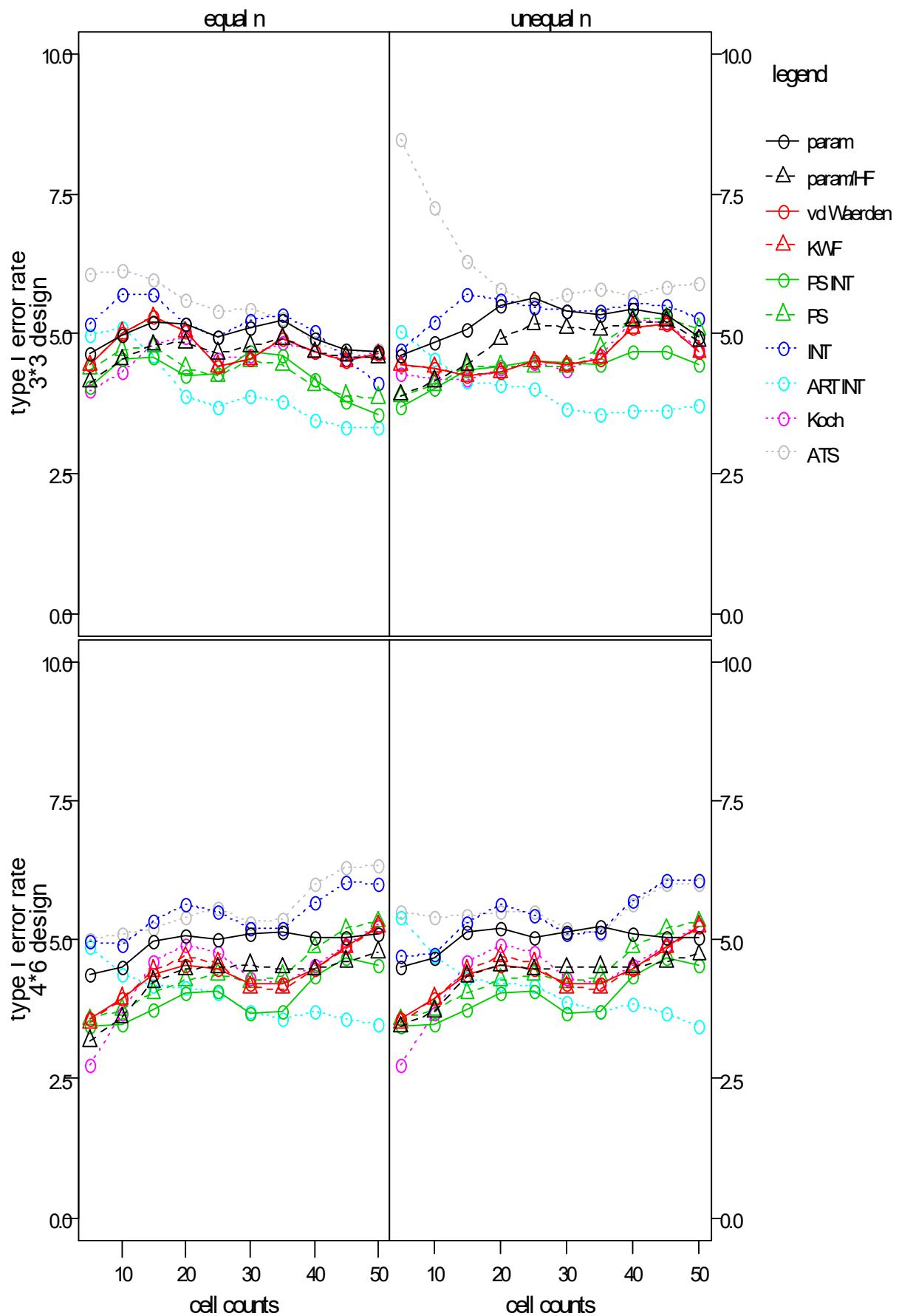
1. 6. 1. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.53	4.89	5.23	5.06	4.55	5.00	4.98	5.92	5.50	5.43	5.65	5.39	5.04	4.97
parametric HF-adj	4.63	4.96	5.24	5.05	4.59	4.99	5.00	5.75	5.34	5.26	5.56	5.31	5.04	5.00
van der Waerden	4.53	4.80	5.05	5.30	5.60	6.16	7.09	5.48	5.56	5.49	6.06	6.42	7.24	7.82
KWF	4.53	4.80	5.05	5.30	5.60	6.16	7.09	5.48	5.56	5.49	6.06	6.42	7.24	7.82
Puri & Sen INT	3.90	4.39	4.66	4.50	3.93	4.59	4.47	4.00	3.88	4.12	4.59	4.62	4.29	4.48
Puri & Sen	4.10	4.51	4.91	4.92	4.24	5.03	4.67	4.10	4.20	4.65	5.11	5.17	5.39	5.68
INT	4.81	5.34	5.55	5.29	4.45	5.00	4.92	5.59	5.22	5.17	5.41	5.30	5.05	5.10
ART INT	5.25	5.51	5.64	5.47	4.90	5.35	5.27	6.49	6.11	6.10	6.35	6.20	5.79	5.67
Koch	4.00	4.46	4.97	5.25	5.59	5.88	7.22	4.96	5.17	5.39	5.80	6.34	6.89	7.80
ATS	16.11	20.31	26.51	33.11	46.70	58.65	67.91	10.97	10.03	9.20	9.02	10.22	11.80	13.54
ATS (uncorr.)	7.92	7.21	6.74	6.62	6.50	7.28	7.23	9.87	8.59	7.28	6.81	7.10	6.50	7.05
large design (4*6)														
parametric	4.40	4.65	4.89	5.05	4.97	4.39	4.89	6.74	5.90	5.24	5.21	4.91	5.15	4.62
parametric HF-adj	4.16	4.50	4.79	4.96	5.00	4.38	4.86	6.30	5.62	5.14	5.15	4.88	5.00	4.55
van der Waerden	4.26	4.41	4.76	5.40	5.64	5.62	6.10	5.02	4.94	5.22	5.47	5.65	6.73	6.58
KWF	4.21	4.35	4.65	5.28	5.76	5.80	6.13	4.82	4.88	5.21	5.45	5.67	6.78	6.43
Puri & Sen INT	4.11	4.45	4.73	4.88	4.84	4.35	4.85	4.65	4.56	4.32	4.45	4.58	4.69	4.32
Puri & Sen	4.53	4.67	4.61	4.85	5.12	4.67	5.29	4.58	4.72	4.71	4.92	5.36	5.49	5.12
INT	4.28	4.60	4.85	5.09	5.20	4.66	5.09	6.38	5.91	5.39	5.38	5.07	5.17	4.84
ART INT	4.98	5.41	5.62	5.66	5.53	4.89	5.47	7.27	6.60	5.98	5.86	5.89	5.84	5.20
Koch	3.46	3.90	4.41	4.97	5.40	5.49	5.99	3.55	4.16	5.01	5.36	5.25	6.40	6.27
ATS	9.90	11.07	13.82	17.86	25.77	33.64	41.30	6.55	5.99	5.61	6.04	6.55	8.19	8.63
ATS (uncorr.)	5.79	5.58	5.53	5.95	6.16	6.19	6.68	5.90	5.36	5.01	5.47	6.25	5.24	5.62



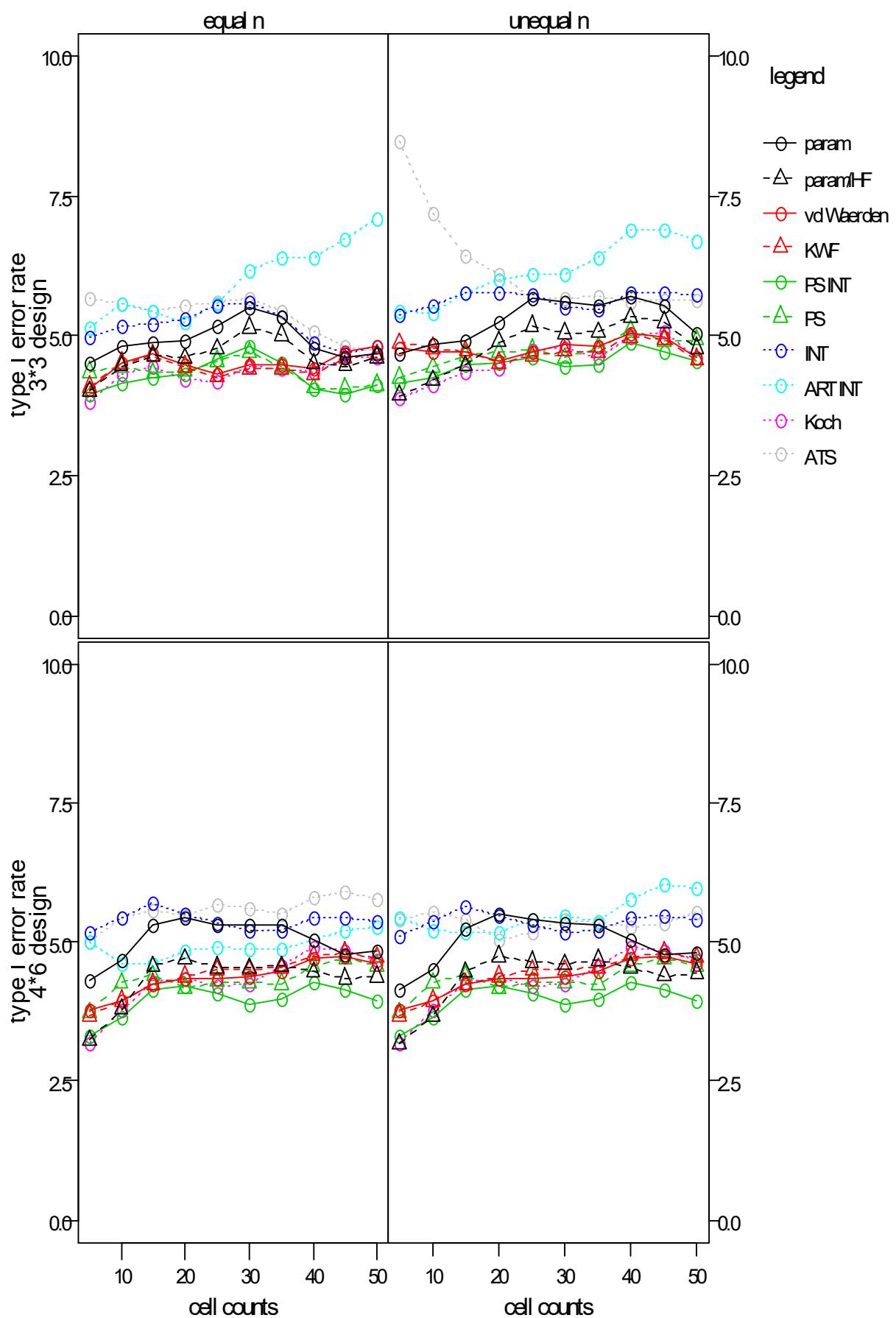
1. 6. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.65	4.97	5.20	5.16	5.09	4.91	4.68	4.60	4.83	5.08	5.49	5.40	5.44	4.93
parametric HF-adj	4.13	4.54	4.80	4.83	4.78	4.67	4.58	3.90	4.15	4.45	4.90	5.09	5.22	4.88
van der Waerden	4.44	5.01	5.29	5.03	4.53	4.66	4.63	4.43	4.39	4.24	4.30	4.44	5.11	4.68
KWF	4.44	5.01	5.29	5.03	4.53	4.66	4.63	4.43	4.39	4.24	4.30	4.44	5.11	4.68
Puri & Sen INT	4.04	4.54	4.59	4.24	4.67	4.17	3.55	3.67	4.00	4.34	4.41	4.48	4.66	4.45
Puri & Sen	4.36	4.71	4.76	4.38	4.50	4.06	3.85	3.87	4.09	4.40	4.42	4.41	5.26	5.08
INT	5.16	5.69	5.69	5.17	5.24	5.03	4.10	4.71	5.22	5.69	5.61	5.40	5.54	5.26
ART INT	4.96	5.10	4.61	3.89	3.90	3.44	3.33	5.04	4.55	4.16	4.09	3.66	3.61	3.73
Koch	3.98	4.30	4.80	4.94	4.60	4.68	4.67	4.27	4.17	4.19	4.38	4.35	5.25	4.70
ATS	6.05	6.14	5.96	5.60	5.44	4.84	4.70	8.48	7.25	6.30	5.81	5.69	5.68	5.91
ATS (uncorr.)								8.89	7.52	6.38	6.12	5.99	5.75	5.61
large design (4*6)														
parametric	4.39	4.51	4.96	5.06	5.10	5.03	5.10	4.50	4.66	5.15	5.20	5.14	5.11	5.05
parametric HF-adj	3.18	3.60	4.24	4.46	4.54	4.46	4.77	3.43	3.71	4.34	4.55	4.50	4.50	4.73
van der Waerden	3.58	3.95	4.38	4.54	4.20	4.49	5.25	3.58	3.95	4.38	4.54	4.20	4.49	5.25
KWF	3.51	3.95	4.44	4.70	4.14	4.46	5.24	3.51	3.95	4.44	4.70	4.14	4.46	5.24
Puri & Sen INT	3.43	3.47	3.75	4.05	3.69	4.35	4.53	3.43	3.47	3.75	4.05	3.69	4.35	4.53
Puri & Sen	3.57	3.74	4.05	4.28	4.24	4.85	5.33	3.57	3.74	4.05	4.28	4.24	4.85	5.33
INT	4.97	4.91	5.35	5.65	5.21	5.67	6.00	4.69	4.74	5.30	5.64	5.11	5.70	6.07
ART INT	4.87	4.36	4.16	4.15	3.71	3.70	3.48	5.42	4.72	4.31	4.22	3.88	3.84	3.45
Koch	2.75	3.69	4.61	4.90	4.31	4.54	5.27	2.75	3.69	4.61	4.90	4.31	4.54	5.27
ATS	5.02	5.09	5.20	5.39	5.31	6.01	6.32	5.50	5.40	5.45	5.51	5.19	5.65	6.00
ATS (uncorr.)								5.34	5.16	5.33	5.28	5.24	5.49	5.63



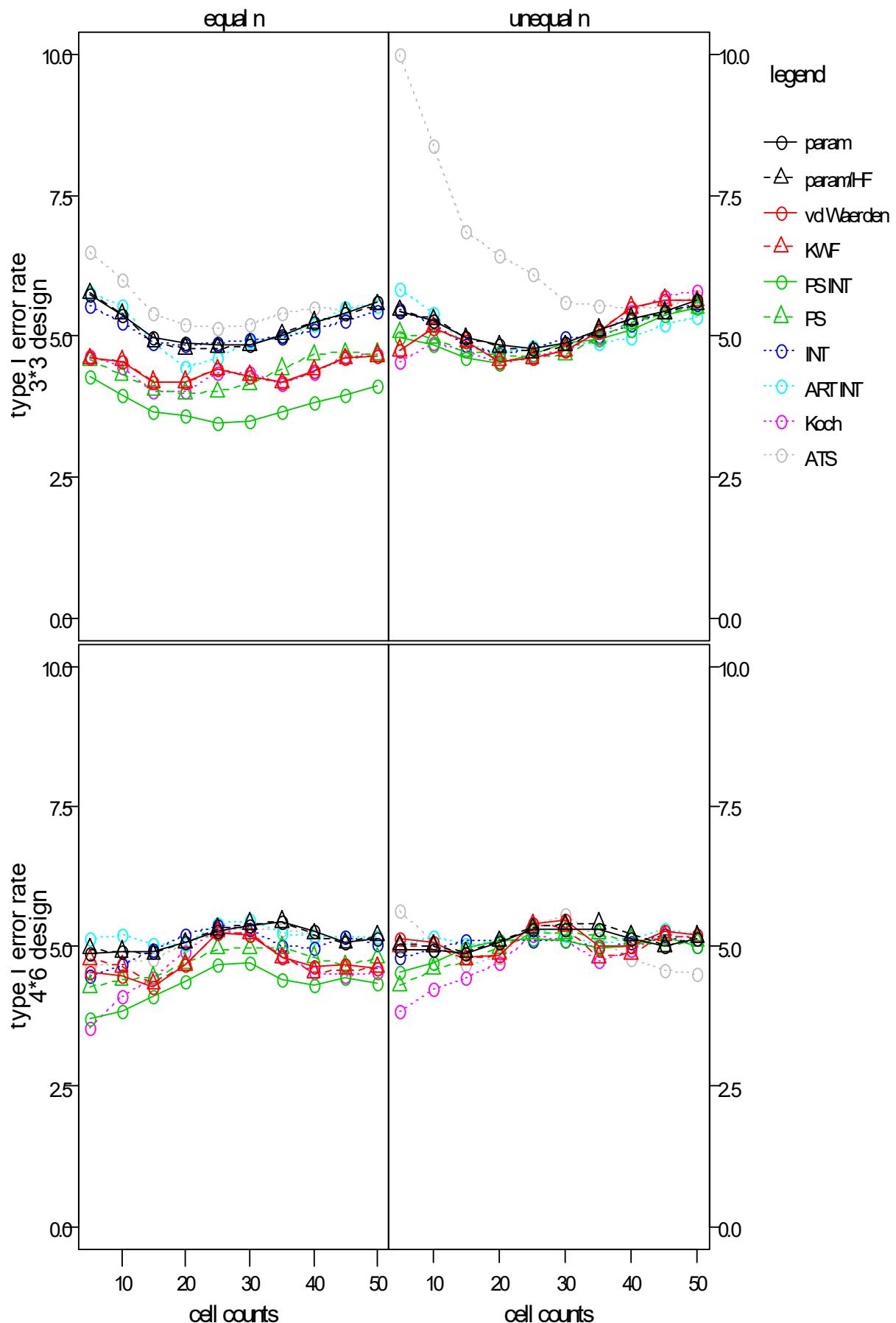
1. 6. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.51	4.81	4.88	4.91	5.50	4.76	4.67	4.68	4.85	4.90	5.24	5.59	5.71	5.04
parametric HF-adj	4.01	4.46	4.64	4.60	5.14	4.50	4.62	3.93	4.20	4.47	4.89	5.04	5.33	4.78
van der Waerden	4.04	4.51	4.68	4.47	4.47	4.40	4.80	4.77	4.70	4.71	4.56	4.84	5.03	4.60
KWF	4.08	4.51	4.65	4.45	4.42	4.31	4.66	4.87	4.78	4.72	4.51	4.72	4.97	4.58
Puri & Sen INT	3.95	4.14	4.24	4.31	4.80	4.05	4.12	4.15	4.26	4.49	4.51	4.45	4.86	4.55
Puri & Sen	4.35	4.45	4.34	4.36	4.70	4.06	4.12	4.25	4.44	4.65	4.70	4.60	5.09	4.92
INT	4.96	5.17	5.21	5.32	5.60	4.89	4.80	5.37	5.53	5.75	5.75	5.50	5.75	5.72
ART INT	5.13	5.57	5.44	5.24	6.15	6.40	7.10	5.42	5.40	5.75	5.99	6.11	6.89	6.70
Koch	3.81	4.31	4.46	4.22	4.46	4.35	4.60	3.90	4.12	4.34	4.40	4.76	4.99	4.61
ATS	5.67	5.56	5.43	5.52	5.66	5.06	4.70	8.48	7.20	6.43	6.08	5.66	5.60	5.62
ATS (uncorr.)								8.78	7.46	6.59	6.36	5.73	5.56	5.55
large design (4*6)														
parametric	4.32	4.68	5.31	5.45	5.30	5.03	4.83	4.15	4.50	5.24	5.49	5.33	5.05	4.82
parametric HF-adj	3.23	3.79	4.56	4.70	4.53	4.46	4.38	3.17	3.67	4.46	4.74	4.60	4.55	4.45
van der Waerden	3.77	3.94	4.24	4.35	4.36	4.71	4.60	3.77	3.94	4.24	4.35	4.36	4.71	4.60
KWF	3.68	3.94	4.24	4.38	4.50	4.75	4.72	3.68	3.94	4.24	4.38	4.50	4.75	4.72
Puri & Sen INT	3.30	3.65	4.15	4.22	3.89	4.26	3.95	3.30	3.65	4.15	4.22	3.89	4.26	3.95
Puri & Sen	3.73	4.26	4.40	4.18	4.26	4.58	4.58	3.73	4.26	4.40	4.18	4.26	4.58	4.58
INT	5.17	5.44	5.70	5.51	5.21	5.44	5.38	5.12	5.36	5.62	5.46	5.17	5.44	5.42
ART INT	4.99	4.60	4.60	4.83	4.86	5.04	5.28	5.44	5.21	5.17	5.18	5.46	5.78	5.97
Koch	3.18	3.76	4.29	4.34	4.25	4.89	4.67	3.18	3.76	4.29	4.34	4.25	4.89	4.67
ATS	5.01	5.44	5.58	5.47	5.59	5.81	5.77	5.40	5.53	5.41	5.04	5.41	5.28	5.54
ATS (uncorr.)								5.60	5.32	5.26	5.46	5.30	5.55	5.10



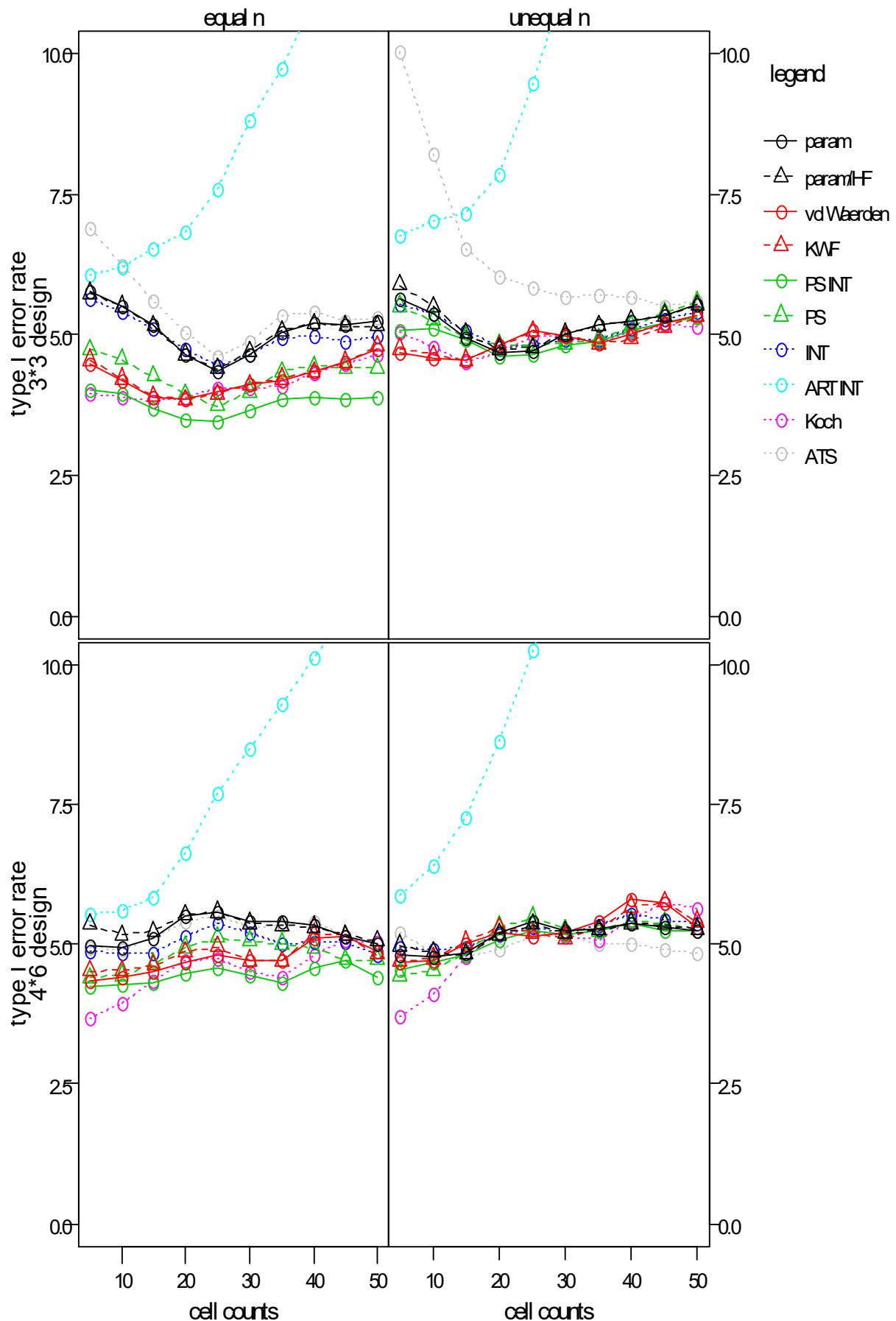
1. 6. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.73	5.38	4.96	4.89	4.84	5.24	5.59	5.43	5.27	4.97	4.84	4.86	5.30	5.62
parametric HF-adj	5.75	5.39	4.89	4.78	4.85	5.24	5.55	5.45	5.29	4.97	4.81	4.82	5.31	5.57
van der Waerden	4.60	4.56	4.18	4.18	4.29	4.39	4.65	4.74	5.15	4.91	4.56	4.75	5.50	5.63
KWF	4.60	4.56	4.18	4.18	4.29	4.39	4.65	4.74	5.15	4.91	4.56	4.75	5.50	5.63
Puri & Sen INT	4.29	3.94	3.66	3.57	3.49	3.83	4.12	4.97	4.85	4.60	4.51	4.89	5.12	5.50
Puri & Sen	4.57	4.31	4.04	3.99	4.14	4.67	4.68	5.05	4.97	4.72	4.66	4.66	5.24	5.50
INT	5.55	5.23	4.89	4.83	4.93	5.10	5.45	5.47	5.21	4.84	4.66	4.96	5.19	5.57
ART INT	5.77	5.55	4.89	4.45	4.90	5.22	5.55	5.82	5.39	4.85	4.72	4.88	4.96	5.33
Koch	4.63	4.46	4.01	4.00	4.33	4.35	4.67	4.56	4.89	4.74	4.51	4.74	5.42	5.80
ATS	6.48	6.01	5.41	5.21	5.21	5.49	5.59	9.98	8.36	6.84	6.44	5.61	5.50	5.69
ATS (uncorr.)								10.96	8.39	5.93	5.21	4.97	5.27	5.79
large design (4*6)														
parametric	4.87	4.91	4.90	5.06	5.38	5.26	5.13	4.95	4.95	4.86	5.08	5.30	5.15	5.14
parametric HF-adj	4.95	4.91	4.86	5.06	5.41	5.22	5.19	5.03	5.01	4.90	5.09	5.39	5.19	5.17
van der Waerden	4.55	4.46	4.29	4.66	5.20	4.64	4.60	5.13	5.08	4.80	4.85	5.46	5.00	5.21
KWF	4.76	4.64	4.33	4.66	5.23	4.54	4.62	5.00	4.99	4.76	4.85	5.35	4.86	5.15
Puri & Sen INT	3.70	3.84	4.10	4.38	4.72	4.30	4.35	4.55	4.71	4.96	5.12	5.12	5.01	5.01
Puri & Sen	4.28	4.40	4.44	4.69	4.96	4.81	4.79	4.30	4.59	4.75	4.96	5.24	5.12	5.10
INT	4.48	4.66	4.94	5.19	5.32	4.96	5.05	4.80	4.95	5.11	5.12	5.10	5.06	5.01
ART INT	5.13	5.21	5.05	5.03	5.48	5.16	5.17	5.00	5.17	5.04	5.06	5.21	5.14	5.21
Koch	3.54	4.10	4.45	4.90	5.20	4.53	4.53	3.83	4.25	4.43	4.72	5.09	4.94	5.13
ATS	4.65	4.69	4.78	5.04	5.29	5.20	5.18	5.64	5.06	4.66	4.79	5.56	4.76	4.52
ATS (uncorr.)								5.62	5.34	5.06	5.08	5.25	4.96	4.95



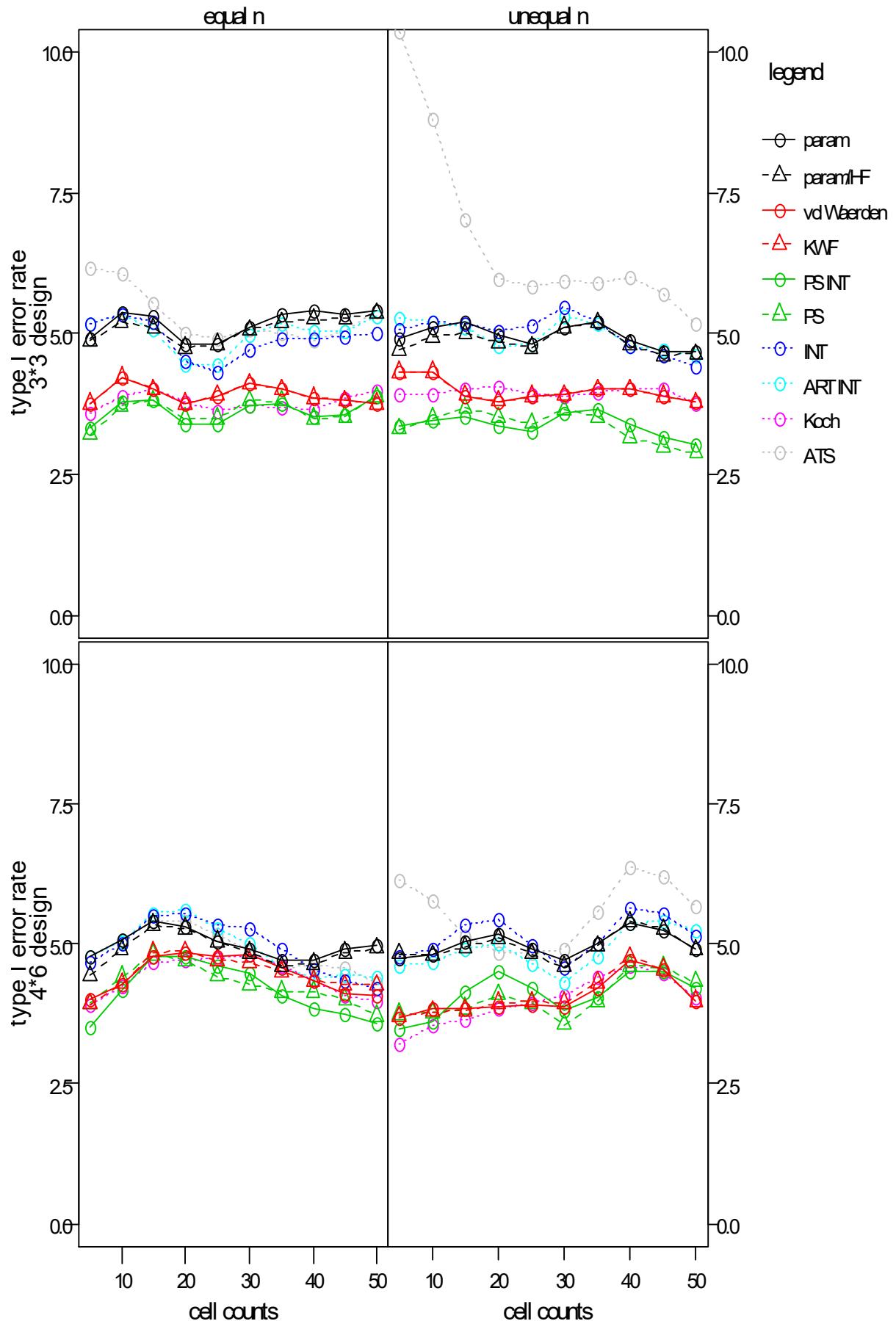
1. 6. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.75	5.51	5.16	4.65	4.65	5.19	5.25	5.62	5.36	4.95	4.66	5.00	5.25	5.52
parametric HF-adj	5.73	5.51	5.15	4.65	4.70	5.20	5.15	5.88	5.49	5.02	4.75	5.01	5.25	5.52
van der Waerden	4.48	4.19	3.89	3.85	4.10	4.33	4.75	4.67	4.59	4.54	4.81	4.96	5.00	5.35
KWF	4.55	4.22	3.91	3.84	4.11	4.34	4.79	4.75	4.64	4.55	4.80	4.97	4.92	5.32
Puri & Sen INT	4.02	3.94	3.69	3.49	3.65	3.89	3.88	5.07	5.10	4.92	4.62	4.81	5.07	5.30
Puri & Sen	4.73	4.56	4.26	3.94	3.99	4.44	4.40	5.50	5.25	4.95	4.81	4.85	5.15	5.57
INT	5.65	5.40	5.10	4.74	4.64	4.96	4.97	5.53	5.36	5.08	4.79	4.91	5.12	5.39
ART INT	6.07	6.20	6.53	6.83	8.80	10.94	12.63	6.76	7.01	7.15	7.85	11.31	14.08	15.88
Koch	3.95	3.88	3.81	3.89	4.05	4.31	4.64	5.05	4.79	4.50	4.67	4.96	5.03	5.15
ATS	6.89	6.22	5.59	5.05	4.88	5.40	5.29	10.04	8.22	6.51	6.04	5.66	5.67	5.59
ATS (uncorr.)								10.86	8.66	6.30	5.64	5.35	5.54	5.51
large design (4*6)														
parametric	4.98	4.95	5.12	5.49	5.40	5.35	5.00	4.82	4.78	4.85	5.21	5.25	5.36	5.23
parametric HF-adj	5.35	5.16	5.23	5.53	5.38	5.31	5.05	4.98	4.85	4.82	5.17	5.21	5.38	5.28
van der Waerden	4.35	4.41	4.51	4.68	4.71	5.10	4.88	4.67	4.70	4.99	5.19	5.20	5.80	5.31
KWF	4.52	4.53	4.62	4.86	4.71	5.17	4.82	4.70	4.74	5.04	5.29	5.11	5.67	5.41
Puri & Sen INT	4.25	4.26	4.30	4.47	4.44	4.59	4.41	4.53	4.67	4.81	5.06	5.18	5.36	5.23
Puri & Sen	4.40	4.45	4.65	4.94	5.05	4.94	4.72	4.45	4.54	4.84	5.31	5.26	5.41	5.27
INT	4.88	4.85	4.85	5.14	5.21	5.04	4.80	4.93	4.91	4.94	5.17	5.21	5.53	5.37
ART INT	5.55	5.61	5.85	6.62	8.50	10.12	11.39	5.86	6.39	7.26	8.64	11.54	14.39	16.11
Koch	3.66	3.94	4.35	4.71	4.51	4.80	5.03	3.71	4.11	4.76	5.19	5.15	5.44	5.62
ATS	4.93	4.91	5.09	5.39	5.30	5.41	5.00	5.20	4.83	4.76	4.91	5.17	5.00	4.83
ATS (uncorr.)								5.43	5.12	4.79	4.99	5.19	4.76	4.52



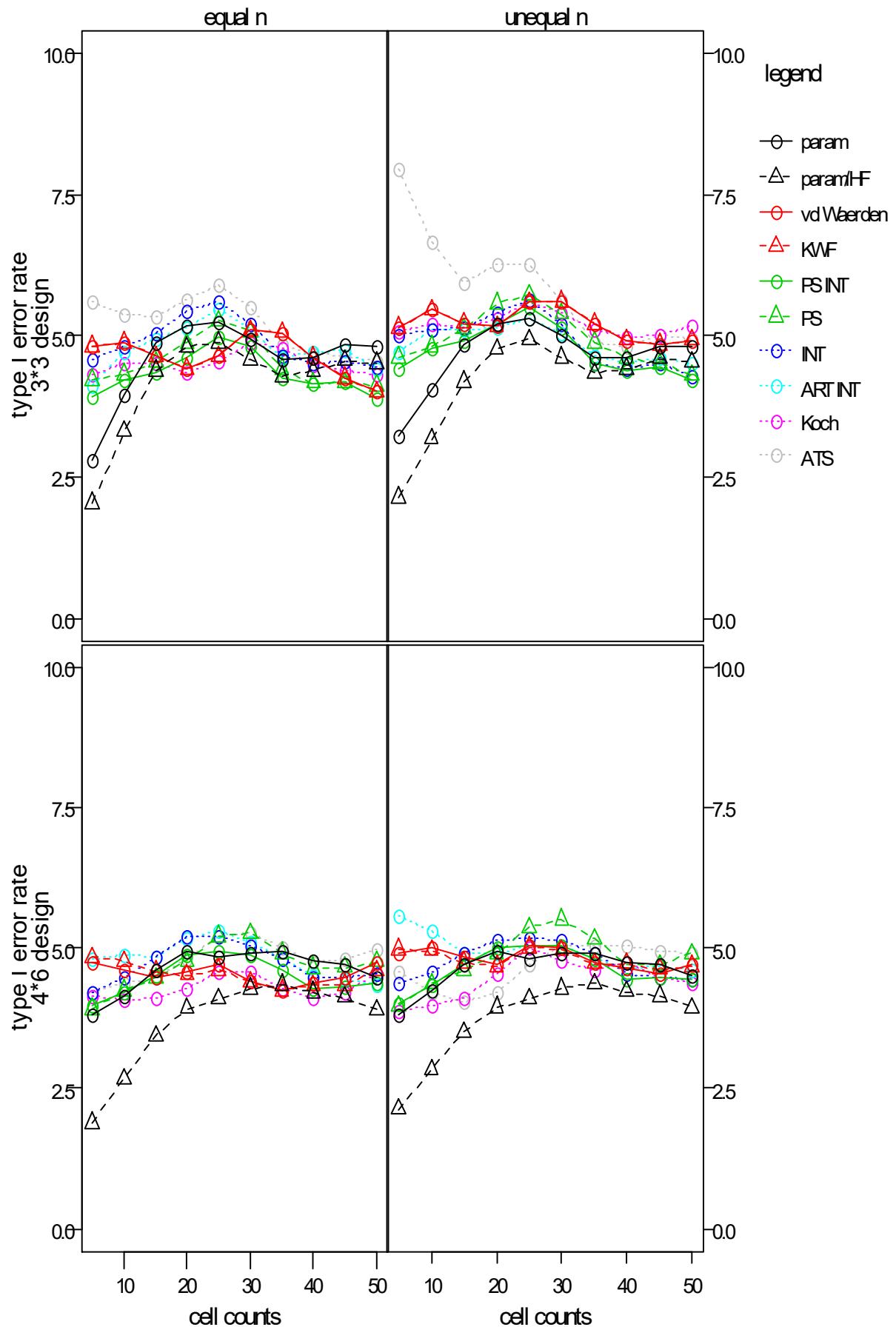
1. 6. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.91	5.38	5.29	4.80	5.12	5.39	5.40	4.90	5.12	5.21	4.96	5.12	4.86	4.67
parametric HF-adj	4.86	5.20	5.10	4.75	5.06	5.25	5.35	4.71	4.93	5.00	4.83	5.11	4.79	4.63
van der Waerden	3.76	4.22	4.01	3.75	4.10	3.86	3.75	4.31	4.31	3.90	3.80	3.91	4.00	3.78
KWF	3.76	4.22	4.01	3.75	4.10	3.86	3.75	4.31	4.31	3.90	3.80	3.91	4.00	3.78
Puri & Sen INT	3.31	3.79	3.81	3.39	3.73	3.53	3.87	3.37	3.44	3.52	3.35	3.60	3.38	3.03
Puri & Sen	3.20	3.71	3.81	3.49	3.81	3.49	3.87	3.30	3.49	3.67	3.51	3.64	3.16	2.87
INT	5.17	5.34	5.19	4.51	4.72	4.91	5.00	5.07	5.19	5.17	5.03	5.46	4.76	4.42
ART INT	5.16	5.34	5.08	4.45	4.97	5.03	5.30	5.27	5.20	5.09	4.79	5.30	4.79	4.60
Koch	3.60	3.90	4.03	3.80	3.73	3.66	3.98	3.93	3.91	4.01	4.05	3.90	4.02	3.76
ATS	6.15	6.06	5.54	5.01	5.08	4.88	5.39	10.36	8.81	7.02	5.96	5.94	6.01	5.16
ATS (uncorr.)								10.03	8.20	6.53	6.06	5.16	5.51	5.75
large design (4*6)														
parametric	4.77	5.06	5.41	5.31	4.90	4.71	4.97	4.75	4.81	5.04	5.16	4.69	5.38	4.91
parametric HF-adj	4.43	4.89	5.34	5.28	4.84	4.64	4.92	4.82	4.79	4.94	5.09	4.59	5.39	4.90
van der Waerden	4.00	4.28	4.76	4.84	4.79	4.34	4.08	3.68	3.84	3.83	3.88	3.86	4.71	3.96
KWF	3.92	4.29	4.85	4.86	4.67	4.35	4.27	3.70	3.79	3.81	3.94	3.94	4.76	3.98
Puri & Sen INT	3.51	4.17	4.78	4.76	4.46	3.84	3.58	3.47	3.62	4.15	4.51	3.80	4.51	4.21
Puri & Sen	3.93	4.41	4.81	4.69	4.28	4.15	3.71	3.75	3.76	3.85	4.09	3.56	4.61	4.32
INT	4.67	5.00	5.50	5.54	5.26	4.54	4.20	4.78	4.91	5.33	5.45	4.56	5.64	5.15
ART INT	4.78	5.05	5.54	5.59	5.01	4.39	4.42	4.62	4.66	4.89	5.00	4.31	5.38	5.23
Koch	3.92	4.25	4.66	4.72	4.80	4.34	3.98	3.20	3.55	3.65	3.83	4.09	4.62	4.05
ATS	4.77	5.06	5.41	5.40	4.88	4.62	4.30	6.13	5.78	5.14	4.84	4.89	6.36	5.66
ATS (uncorr.)								5.76	5.30	5.33	5.36	4.94	5.40	4.95



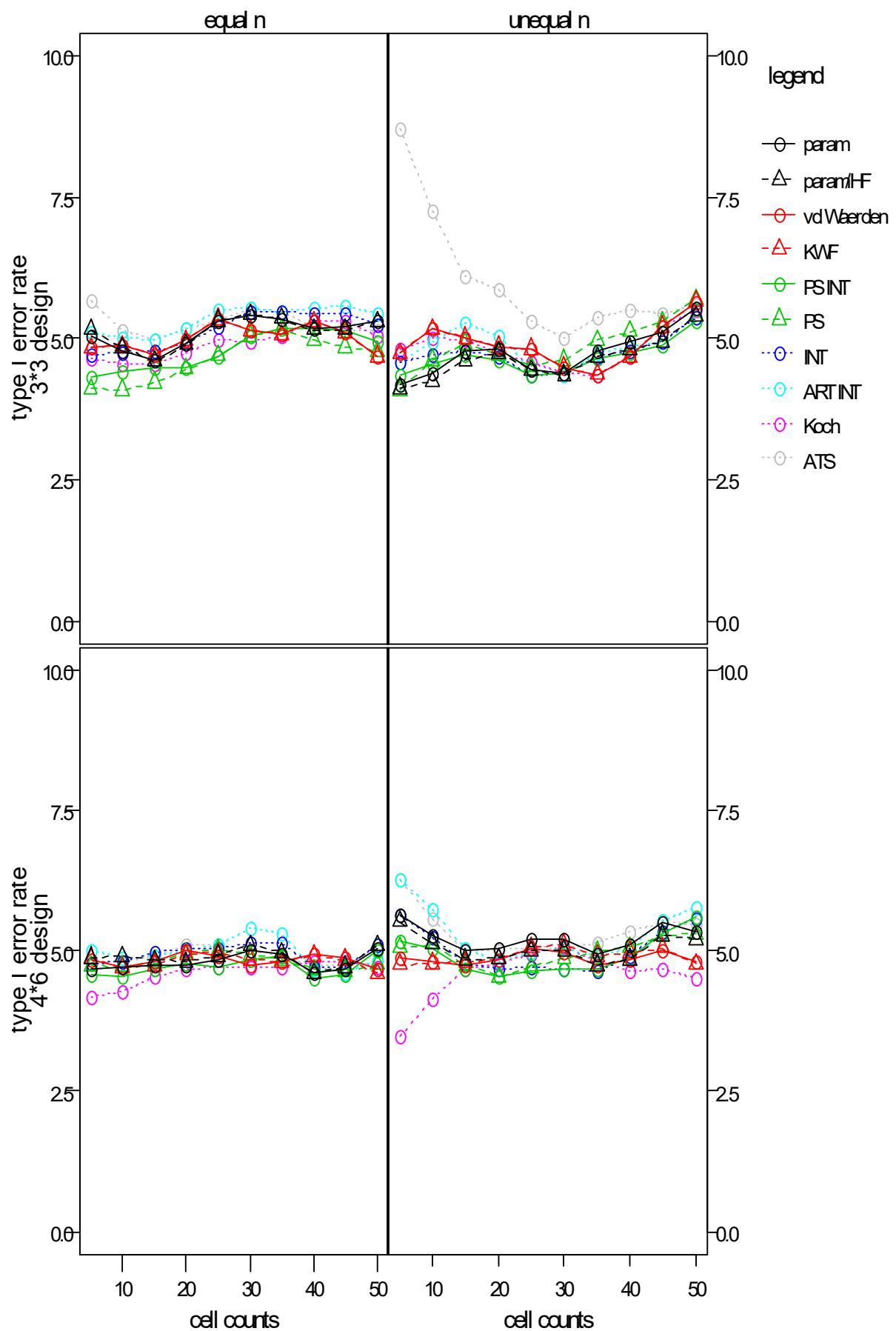
1. 6. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.81	3.96	4.86	5.17	4.95	4.62	4.80	3.23	4.05	4.83	5.22	5.00	4.61	4.80
parametric HF-adj	2.04	3.30	4.38	4.80	4.58	4.38	4.52	2.13	3.17	4.19	4.76	4.62	4.41	4.53
van der Waerden	4.81	4.88	4.64	4.41	5.10	4.61	4.00	5.14	5.46	5.22	5.16	5.61	4.92	4.92
KWF	4.81	4.88	4.64	4.41	5.10	4.61	4.00	5.14	5.46	5.22	5.16	5.61	4.92	4.92
Puri & Sen INT	3.91	4.22	4.35	4.60	4.80	4.14	3.88	4.40	4.79	4.92	5.20	5.15	4.39	4.21
Puri & Sen	4.22	4.32	4.53	4.86	5.06	4.16	4.12	4.62	4.81	5.12	5.57	5.38	4.60	4.30
INT	4.58	4.81	5.04	5.43	5.20	4.50	4.43	5.00	5.12	5.15	5.41	5.19	4.41	4.28
ART INT	4.11	4.71	4.95	5.15	5.12	4.70	4.40	4.71	5.10	5.09	5.15	5.03	4.51	4.51
Koch	4.32	4.50	4.51	4.35	4.89	4.47	4.30	5.08	5.21	5.14	5.31	5.40	4.99	5.17
ATS	5.60	5.38	5.33	5.64	5.49	4.66	4.55	7.96	6.66	5.94	6.25	5.62	4.80	4.95
ATS (uncorr.)								8.46	7.25	6.08	5.78	5.55	4.85	5.06
large design (4*6)														
parametric	3.81	4.15	4.62	4.94	4.90	4.76	4.48	3.81	4.24	4.70	4.93	4.89	4.74	4.50
parametric HF-adj	1.89	2.67	3.44	3.92	4.28	4.21	3.90	2.13	2.83	3.50	3.94	4.28	4.22	3.93
van der Waerden	4.73	4.60	4.47	4.56	4.42	4.36	4.74	4.92	5.00	4.83	4.72	5.00	4.64	4.69
KWF	4.83	4.76	4.59	4.52	4.40	4.33	4.60	4.97	4.95	4.74	4.67	4.96	4.72	4.67
Puri & Sen INT	3.98	4.20	4.51	4.88	4.86	4.29	4.38	4.01	4.34	4.70	5.00	5.03	4.45	4.45
Puri & Sen	3.91	4.24	4.46	4.76	5.26	4.64	4.75	3.96	4.36	4.61	4.90	5.51	4.72	4.90
INT	4.20	4.46	4.85	5.22	5.04	4.46	4.53	4.38	4.59	4.89	5.15	5.14	4.54	4.45
ART INT	4.80	4.86	4.85	5.16	5.11	4.51	4.35	5.58	5.30	4.91	4.91	5.04	4.65	4.60
Koch	4.15	4.09	4.10	4.26	4.59	4.12	4.54	3.87	3.96	4.12	4.55	4.77	4.74	4.37
ATS	4.21	4.39	4.49	4.80	5.27	4.75	4.98	4.57	4.21	4.04	4.21	5.05	5.04	4.92
ATS (uncorr.)								4.70	4.31	4.08	4.36	4.55	4.40	4.37



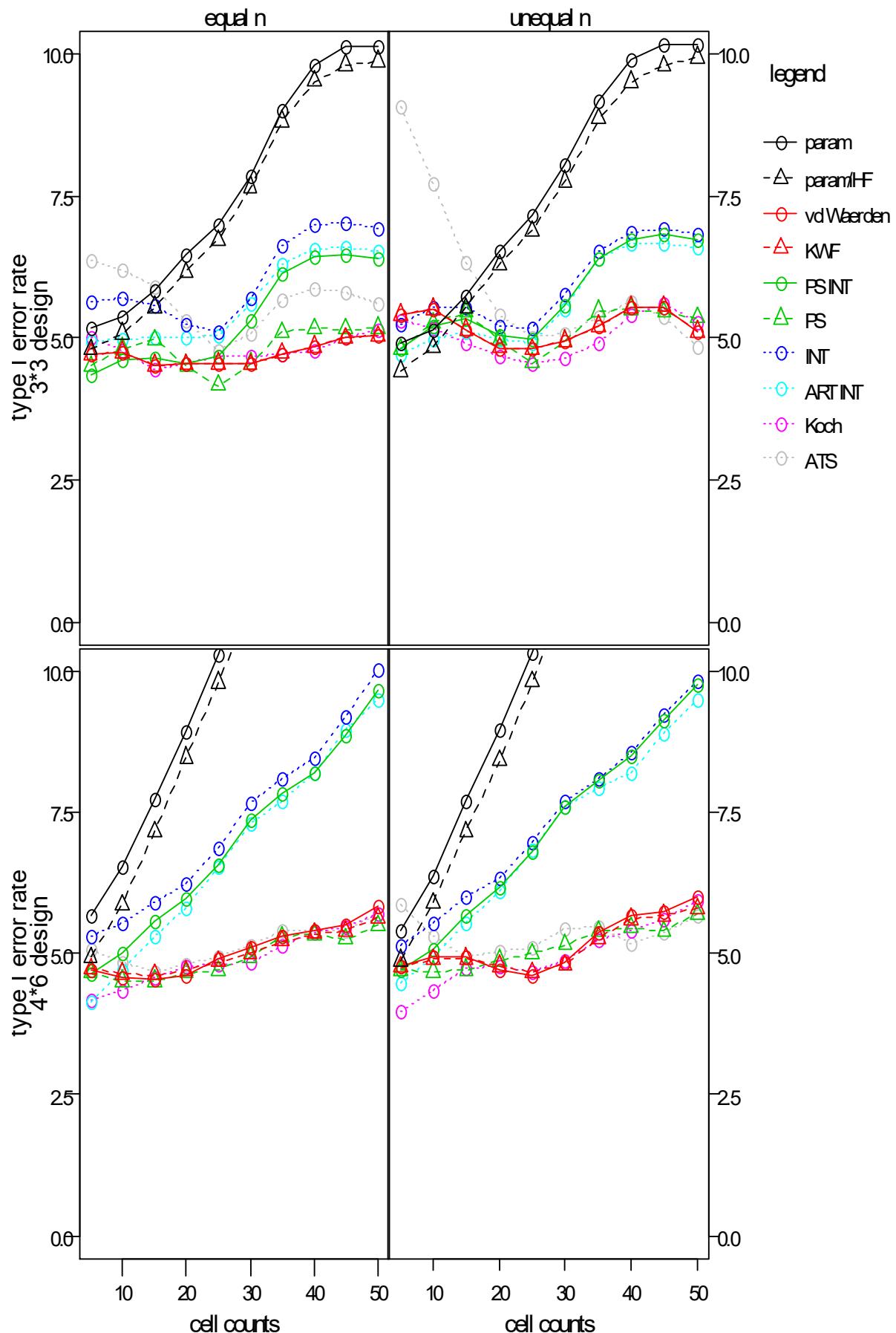
1. 6. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.04	4.78	4.62	4.92	5.39	5.18	5.32	4.17	4.39	4.79	4.80	4.38	4.94	5.52
parametric HF-adj	5.15	4.83	4.59	4.89	5.42	5.15	5.30	4.12	4.24	4.62	4.74	4.35	4.81	5.39
van der Waerden	4.83	4.86	4.70	4.96	5.14	5.29	4.68	4.73	5.16	5.01	4.85	4.49	4.66	5.65
KWF	4.83	4.86	4.70	4.96	5.14	5.29	4.68	4.73	5.16	5.01	4.85	4.49	4.66	5.65
Puri & Sen INT	4.30	4.42	4.49	4.49	5.04	5.17	4.93	4.33	4.55	4.72	4.62	4.38	4.73	5.32
Puri & Sen	4.10	4.08	4.22	4.46	5.04	4.96	4.77	4.08	4.62	4.91	4.71	4.61	5.12	5.69
INT	4.72	4.75	4.79	4.91	5.46	5.42	5.23	4.58	4.70	4.79	4.66	4.39	4.79	5.37
ART INT	5.12	5.01	4.96	5.17	5.52	5.55	5.42	4.58	4.94	5.26	5.04	4.34	4.84	5.37
Koch	4.65	4.54	4.53	4.75	4.95	5.31	5.03	4.80	5.02	4.96	4.74	4.39	4.69	5.50
ATS	5.67	5.15	4.99	5.17	5.53	5.19	5.15	8.71	7.24	6.11	5.85	5.02	5.51	5.60
ATS (uncorr.)								9.11	7.24	5.99	5.81	5.67	5.64	5.37
large design (4*6)														
parametric	4.68	4.72	4.74	4.74	5.01	4.60	5.05	5.64	5.28	4.99	5.05	5.20	5.12	5.35
parametric HF-adj	4.88	4.89	4.83	4.80	5.09	4.60	5.09	5.52	5.14	4.84	4.86	5.01	4.84	5.21
van der Waerden	4.85	4.69	4.79	4.99	4.75	4.95	4.68	4.87	4.79	4.74	4.84	4.97	4.84	4.80
KWF	4.85	4.69	4.74	4.93	4.84	4.91	4.60	4.75	4.78	4.79	4.85	5.11	4.97	4.76
Puri & Sen INT	4.58	4.55	4.66	4.76	4.85	4.50	4.99	5.17	5.03	4.66	4.55	4.66	4.86	5.60
Puri & Sen	4.73	4.72	4.79	4.96	4.93	4.66	4.75	5.05	5.12	4.74	4.53	4.88	5.06	5.30
INT	4.77	4.80	4.96	5.05	5.15	4.69	5.10	5.62	5.24	4.76	4.66	4.68	4.89	5.57
ART INT	5.00	4.88	4.89	4.99	5.42	4.66	4.83	6.27	5.74	5.03	4.81	5.04	5.05	5.77
Koch	4.18	4.28	4.54	4.66	4.72	4.79	4.72	3.48	4.15	4.66	4.76	5.06	4.65	4.50
ATS	4.78	4.80	4.91	5.10	5.00	4.75	4.80	6.27	5.57	5.02	4.99	5.05	5.34	5.46
ATS (uncorr.)								5.57	4.86	4.84	4.94	5.03	5.18	5.02



1. 6. 1. 13 normal distribution - equal variances - contaminated III

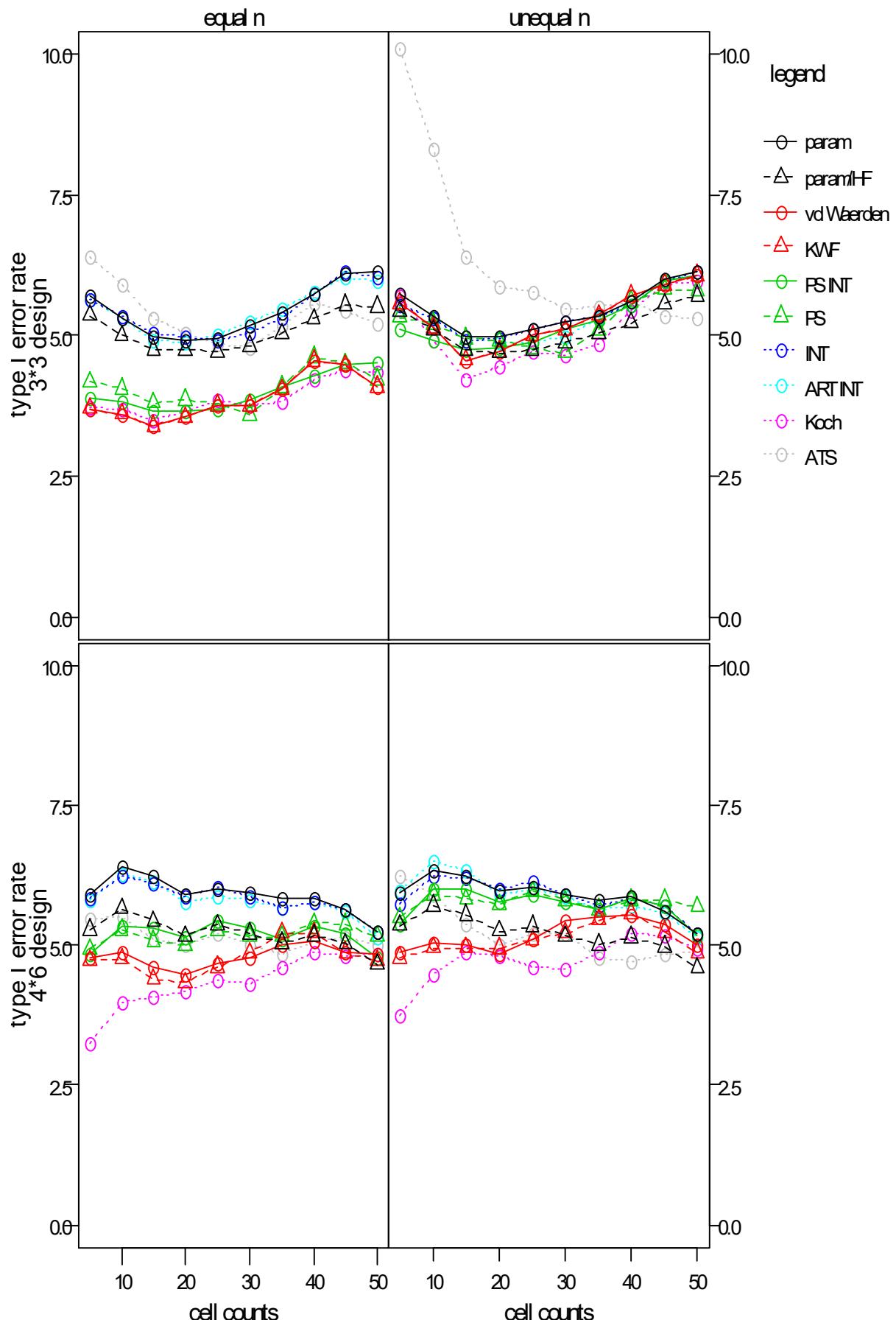
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.18	5.36	5.82	6.45	7.86	9.81	10.13	4.90	5.14	5.74	6.54	8.04	9.90	10.17
parametric HF-adj	4.80	5.07	5.54	6.15	7.65	9.51	9.87	4.41	4.83	5.53	6.29	7.75	9.50	9.93
van der Waerden	4.71	4.75	4.51	4.53	4.54	4.85	5.03	5.41	5.51	5.14	4.82	4.95	5.54	5.11
KWF	4.71	4.75	4.51	4.53	4.54	4.85	5.03	5.41	5.51	5.14	4.82	4.95	5.54	5.11
Puri & Sen INT	4.33	4.60	4.64	4.56	5.31	6.43	6.38	4.80	5.22	5.35	5.04	5.58	6.74	6.73
Puri & Sen	4.50	4.81	4.96	4.51	4.55	5.16	5.18	4.80	5.26	5.45	4.96	4.95	5.51	5.35
INT	5.65	5.71	5.56	5.24	5.71	6.98	6.93	5.23	5.52	5.54	5.22	5.75	6.85	6.83
ART INT	4.95	4.96	5.00	5.00	5.60	6.55	6.53	4.71	4.99	5.09	4.97	5.51	6.67	6.58
Koch	5.02	4.78	4.44	4.54	4.66	4.76	5.13	5.32	5.16	4.91	4.66	4.65	5.40	5.26
ATS	6.35	6.19	5.89	5.30	5.06	5.85	5.60	9.06	7.71	6.32	5.39	5.08	5.62	4.83
ATS (uncorr.)								10.37	8.32	6.76	5.97	5.10	5.97	5.71
large design (4*6)														
parametric	5.66	6.53	7.74	8.94	11.85	14.19	16.37	5.39	6.36	7.69	8.97	11.82	14.23	16.27
parametric HF-adj	4.93	5.86	7.16	8.47	11.20	13.66	15.77	4.88	5.89	7.16	8.41	11.30	13.57	15.62
van der Waerden	4.70	4.58	4.55	4.61	5.12	5.40	5.85	4.78	4.95	4.94	4.70	4.85	5.66	6.00
KWF	4.73	4.64	4.62	4.70	5.01	5.35	5.62	4.75	4.90	4.91	4.78	4.80	5.61	5.79
Puri & Sen INT	4.65	5.00	5.58	5.96	7.36	8.19	9.67	4.71	5.07	5.68	6.16	7.60	8.48	9.77
Puri & Sen	4.65	4.51	4.51	4.65	4.94	5.33	5.50	4.70	4.67	4.71	4.88	5.15	5.45	5.69
INT	5.30	5.54	5.89	6.24	7.65	8.47	10.02	5.15	5.53	6.00	6.33	7.71	8.56	9.82
ART INT	4.15	4.70	5.31	5.80	7.31	8.21	9.49	4.46	4.94	5.55	6.10	7.61	8.21	9.50
Koch	4.18	4.33	4.58	4.76	4.84	5.38	5.69	3.98	4.34	4.74	4.76	4.88	5.40	5.95
ATS	5.07	4.83	4.66	4.79	5.15	5.42	5.70	5.87	5.30	4.94	5.03	5.45	5.18	5.68
ATS (uncorr.)								5.79	5.10	4.76	4.96	5.35	5.60	5.87



1. 6. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

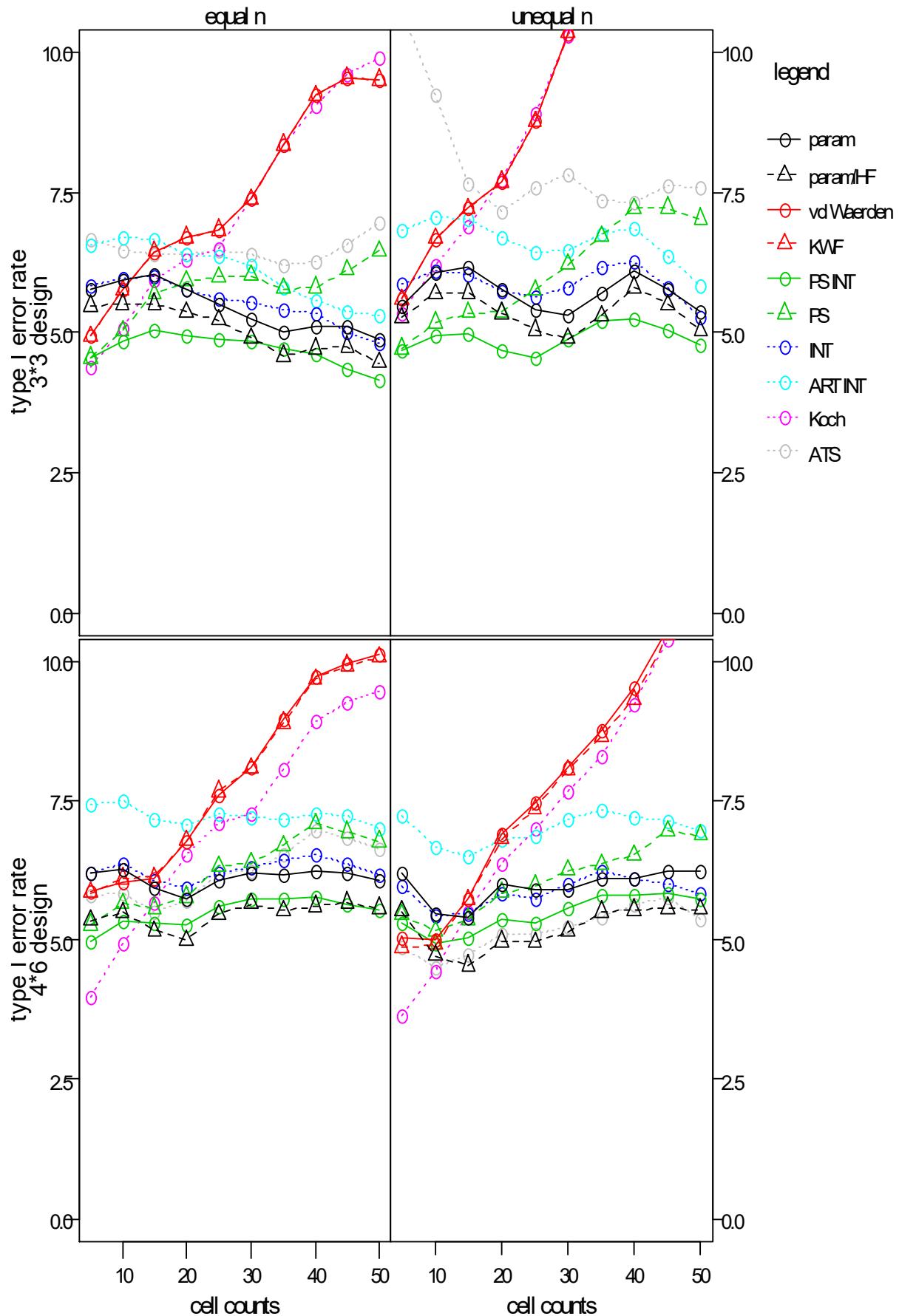
1. 6. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.70	5.30	4.99	4.92	5.17	5.74	6.13	5.72	5.35	4.97	4.96	5.23	5.60	6.12
parametric HF-adj	5.35	5.00	4.74	4.73	4.81	5.29	5.51	5.43	5.10	4.74	4.69	4.86	5.22	5.70
van der Waerden	3.70	3.60	3.39	3.54	3.76	4.55	4.08	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	3.70	3.60	3.39	3.54	3.76	4.55	4.08	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	3.90	3.81	3.65	3.64	3.85	4.29	4.50	5.12	4.92	4.74	4.78	5.10	5.53	6.05
Puri & Sen	4.17	4.05	3.80	3.86	3.59	4.62	4.22	5.32	5.21	4.95	4.90	4.69	5.60	5.80
INT	5.63	5.34	5.03	4.96	5.05	5.72	6.03	5.55	5.30	4.91	4.94	5.25	5.55	6.12
ART INT	5.65	5.29	4.92	4.89	5.25	5.75	5.96	5.53	5.30	4.96	4.89	4.97	5.61	6.07
Koch	3.71	3.67	3.50	3.65	3.76	4.20	4.33	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.38	5.91	5.29	5.03	4.76	5.56	5.20	10.08	8.32	6.41	5.85	5.47	5.59	5.30
ATS (uncorr.)								10.04	8.12	6.25	5.82	5.66	5.84	5.25
large design (4*6)														
parametric	5.89	6.39	6.24	5.90	5.94	5.85	5.23	5.93	6.35	6.25	5.97	5.90	5.86	5.20
parametric HF-adj	5.28	5.65	5.43	5.16	5.21	5.17	4.65	5.35	5.71	5.54	5.25	5.16	5.14	4.60
van der Waerden	4.76	4.86	4.60	4.49	4.76	5.08	4.83	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.73	4.75	4.39	4.33	4.86	5.22	4.72	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	4.84	5.35	5.29	5.14	5.29	5.33	4.78	5.38	6.01	5.99	5.76	5.76	5.84	5.18
Puri & Sen	4.93	5.28	5.08	5.00	5.15	5.40	5.15	5.50	5.91	5.83	5.72	5.79	5.80	5.68
INT	5.85	6.24	6.09	5.86	5.86	5.78	5.23	5.73	6.22	6.19	6.00	5.90	5.84	5.20
ART INT	5.81	6.26	6.14	5.78	5.81	5.76	5.15	5.96	6.50	6.34	5.90	5.86	5.71	5.15
Koch	3.24	3.98	4.09	4.16	4.31	4.88	4.84	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.48	5.51	5.11	4.99	4.99	5.06	5.01	6.25	5.89	5.36	4.99	5.22	4.69	4.88
ATS (uncorr.)								6.27	6.01	5.46	4.92	5.29	4.61	4.83



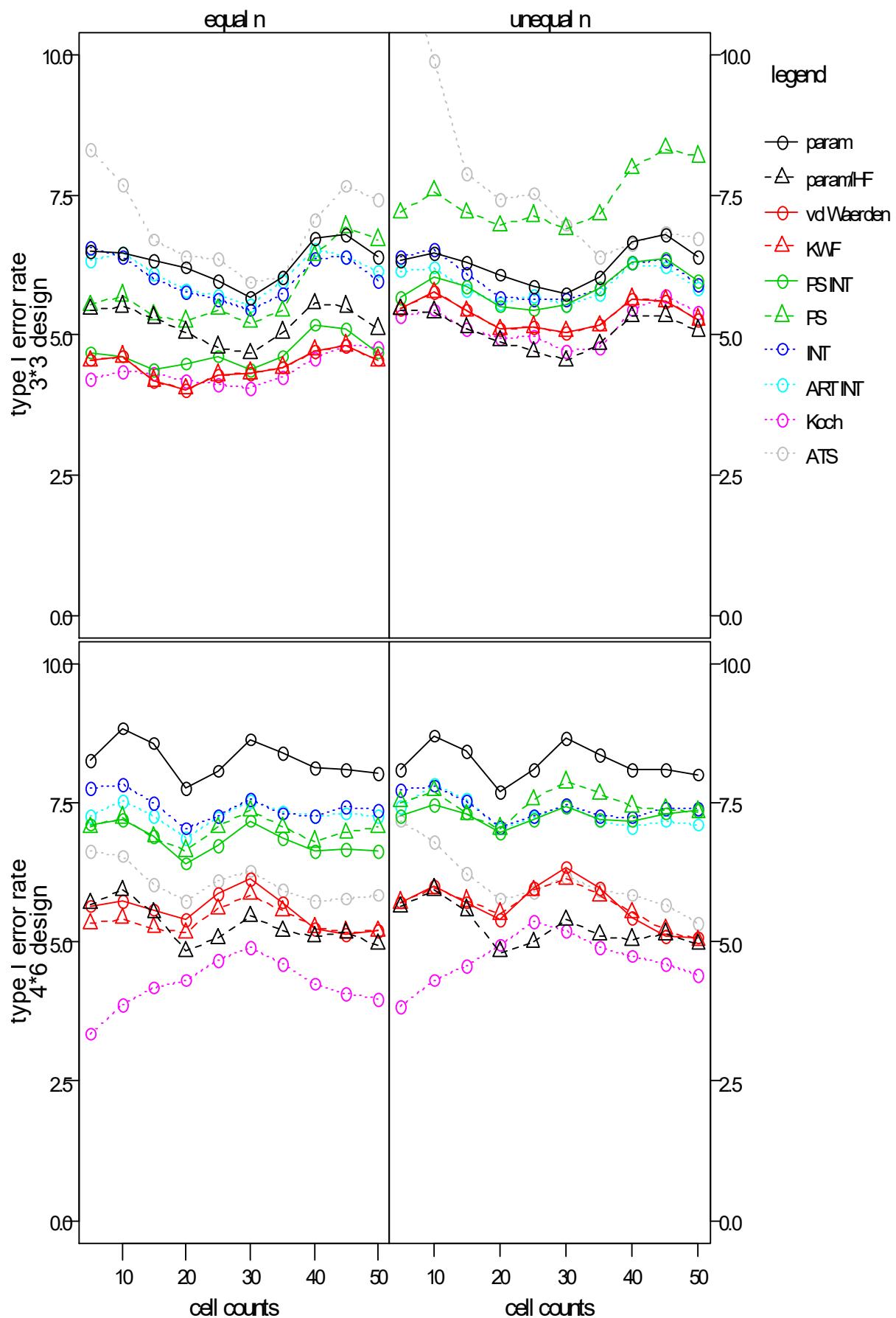
1. 6. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.77	5.94	6.03	5.75	5.25	5.09	4.88	5.48	6.05	6.15	5.76	5.29	6.09	5.37
parametric HF-adj	5.47	5.51	5.50	5.36	4.90	4.71	4.46	5.26	5.69	5.70	5.34	4.89	5.80	5.03
van der Waerden	4.93	5.76	6.44	6.69	7.38	9.22	9.50	5.59	6.67	7.21	7.69	10.34	12.90	14.49
KWF	4.93	5.76	6.44	6.69	7.38	9.22	9.50	5.59	6.67	7.21	7.69	10.34	12.90	14.49
Puri & Sen INT	4.53	4.83	5.04	4.94	4.84	4.62	4.15	4.68	4.95	4.97	4.66	4.89	5.25	4.77
Puri & Sen	4.55	5.03	5.69	5.91	6.01	5.80	6.45	4.71	5.17	5.35	5.36	6.21	7.21	7.03
INT	5.82	5.95	6.01	5.75	5.53	5.33	4.80	5.88	6.11	6.04	5.74	5.80	6.27	5.26
ART INT	6.55	6.69	6.66	6.40	6.20	5.56	5.30	6.83	7.06	7.01	6.69	6.47	6.84	5.83
Koch	4.38	5.08	5.94	6.28	7.38	9.02	9.90	5.34	6.20	6.90	7.70	10.29	12.43	14.40
ATS	6.67	6.45	6.40	6.40	6.41	6.26	6.97	10.73	9.22	7.66	7.16	7.81	7.33	7.57
ATS (uncorr.)								10.19	8.65	7.12	6.61	6.95	6.39	5.96
large design (4*6)														
parametric	6.20	6.26	5.92	5.72	6.20	6.24	6.08	6.21	5.46	5.42	6.01	5.89	6.11	6.23
parametric HF-adj	5.35	5.50	5.16	5.00	5.65	5.61	5.57	5.52	4.72	4.54	4.97	5.15	5.54	5.55
van der Waerden	5.88	6.05	6.11	6.77	8.11	9.71	10.12	5.03	4.99	5.72	6.91	8.08	9.54	10.88
KWF	5.85	6.11	6.12	6.78	8.09	9.68	10.07	4.88	4.92	5.72	6.81	8.05	9.32	10.97
Puri & Sen INT	4.96	5.34	5.31	5.26	5.73	5.78	5.53	5.32	4.94	5.04	5.36	5.56	5.80	5.75
Puri & Sen	5.28	5.66	5.57	5.77	6.38	7.09	6.77	5.45	5.16	5.38	5.85	6.25	6.53	6.88
INT	6.21	6.36	6.06	5.92	6.31	6.55	6.18	5.97	5.44	5.47	5.85	6.00	6.11	5.85
ART INT	7.43	7.50	7.18	7.05	7.20	7.27	7.01	7.22	6.66	6.51	6.81	7.15	7.20	6.95
Koch	3.99	4.94	5.67	6.54	7.26	8.93	9.45	3.64	4.43	5.49	6.36	7.67	9.21	10.82
ATS	5.80	5.84	5.51	5.69	6.25	6.97	6.62	4.87	4.51	4.74	5.12	5.24	5.62	5.38
ATS (uncorr.)								4.97	4.75	4.99	5.49	5.60	6.04	6.20



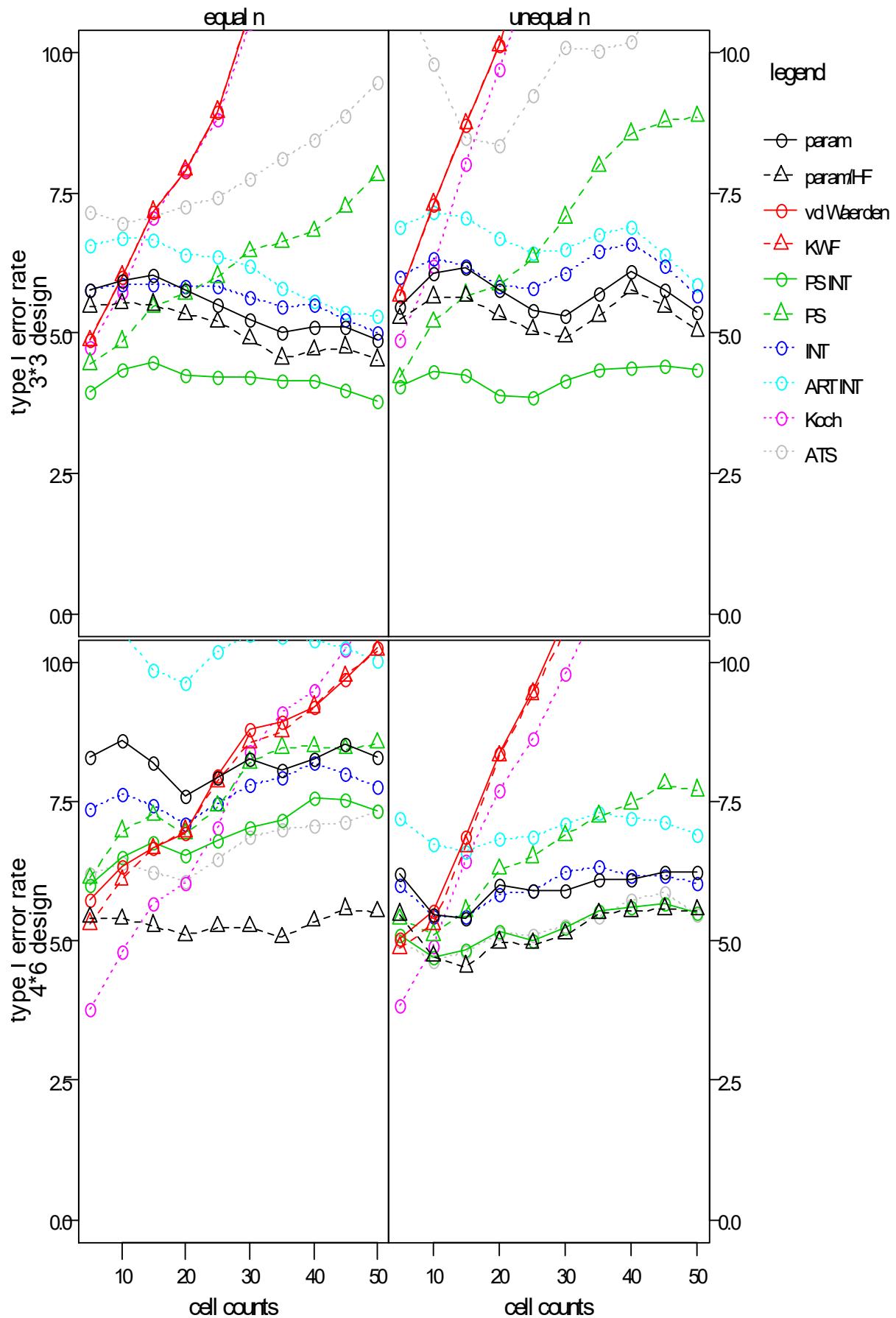
1. 6. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.48	6.46	6.32	6.21	5.66	6.72	6.40	6.33	6.45	6.31	6.05	5.74	6.67	6.38
parametric HF-adj	5.45	5.50	5.31	5.04	4.66	5.56	5.11	5.45	5.41	5.12	4.89	4.53	5.33	5.08
van der Waerden	4.53	4.62	4.19	4.03	4.32	4.72	4.55	5.46	5.75	5.43	5.09	5.05	5.64	5.28
KWF	4.53	4.62	4.19	4.03	4.32	4.72	4.55	5.46	5.75	5.43	5.09	5.05	5.64	5.28
Puri & Sen INT	4.67	4.61	4.39	4.49	4.38	5.17	4.68	5.68	6.03	5.88	5.50	5.52	6.31	5.95
Puri & Sen	5.53	5.70	5.35	5.24	5.22	6.42	6.70	7.18	7.56	7.17	6.95	6.89	7.97	8.18
INT	6.55	6.40	5.99	5.78	5.43	6.36	5.98	6.40	6.53	6.10	5.66	5.64	6.31	5.91
ART INT	6.33	6.45	6.11	5.81	5.54	6.51	6.13	6.13	6.21	5.79	5.58	5.52	6.25	5.83
Koch	4.23	4.36	4.30	4.19	4.06	4.59	4.78	5.35	5.44	5.11	4.95	4.70	5.45	5.40
ATS	8.30	7.67	6.69	6.38	5.93	7.05	7.41	11.79	9.90	7.89	7.43	6.96	6.64	6.72
ATS (uncorr.)								11.53	9.76	8.05	7.69	6.70	6.39	6.45
large design (4*6)														
parametric	8.26	8.81	8.57	7.76	8.62	8.12	8.03	8.08	8.69	8.43	7.69	8.66	8.10	7.98
parametric HF-adj	5.68	5.92	5.53	4.83	5.46	5.10	4.95	5.63	5.94	5.58	4.82	5.39	5.04	4.95
van der Waerden	5.63	5.75	5.56	5.41	6.14	5.24	5.22	5.71	5.99	5.69	5.41	6.35	5.44	5.07
KWF	5.33	5.42	5.25	5.16	5.85	5.26	5.20	5.71	5.96	5.74	5.51	6.12	5.53	5.03
Puri & Sen INT	7.10	7.20	6.91	6.40	7.18	6.62	6.62	7.25	7.47	7.30	6.98	7.43	7.16	7.35
Puri & Sen	7.06	7.24	6.88	6.64	7.36	6.80	7.05	7.51	7.71	7.29	7.04	7.86	7.44	7.33
INT	7.77	7.83	7.50	7.03	7.56	7.25	7.35	7.72	7.81	7.53	7.08	7.47	7.24	7.40
ART INT	7.28	7.54	7.28	6.88	7.54	7.25	7.27	7.43	7.83	7.56	7.03	7.46	7.06	7.10
Koch	3.36	3.89	4.19	4.30	4.90	4.24	3.98	3.84	4.32	4.58	4.95	5.22	4.75	4.42
ATS	6.62	6.54	6.04	5.75	6.26	5.74	5.82	7.17	6.80	6.25	5.76	6.17	5.84	5.33
ATS (uncorr.)								7.62	7.05	6.24	5.78	6.35	5.84	5.55



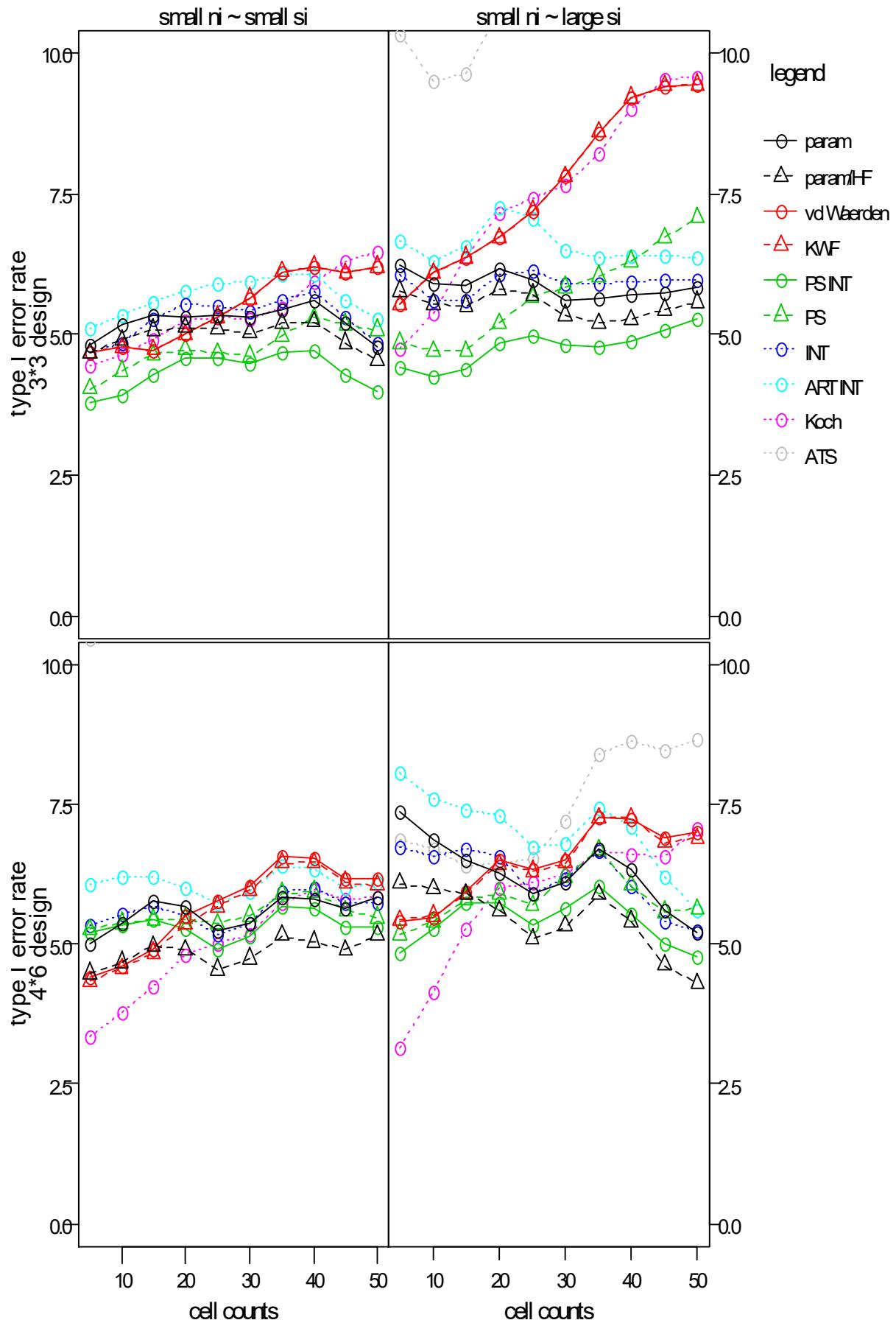
1. 6. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.77	5.94	6.03	5.75	5.25	5.09	4.88	5.48	6.05	6.15	5.76	5.29	6.09	5.37
parametric HF-adj	5.47	5.53	5.50	5.33	4.89	4.69	4.51	5.25	5.64	5.65	5.32	4.92	5.78	5.03
van der Waerden	4.86	6.01	7.16	7.89	10.71	13.68	16.37	5.67	7.29	8.72	10.11	14.76	20.42	24.68
KWF	4.86	6.01	7.16	7.89	10.71	13.68	16.37	5.67	7.29	8.72	10.11	14.76	20.42	24.68
Puri & Sen INT	3.96	4.34	4.49	4.26	4.21	4.16	3.77	4.05	4.32	4.24	3.90	4.15	4.39	4.35
Puri & Sen	4.45	4.85	5.46	5.70	6.45	6.81	7.81	4.21	5.19	5.67	5.86	7.06	8.54	8.85
INT	5.78	5.85	5.88	5.82	5.65	5.51	5.00	6.01	6.34	6.21	5.84	6.06	6.60	5.66
ART INT	6.55	6.69	6.66	6.40	6.20	5.56	5.30	6.88	7.15	7.06	6.68	6.49	6.89	5.85
Koch	4.73	5.72	7.07	7.90	10.53	13.84	15.94	4.88	6.21	8.00	9.68	13.90	19.35	23.61
ATS	7.15	6.94	7.07	7.25	7.75	8.45	9.47	11.23	9.78	8.46	8.34	10.09	10.18	11.67
ATS (uncorr.)								10.61	9.05	7.54	7.15	8.14	7.62	8.06
large design (4*6)														
parametric	8.31	8.60	8.19	7.61	8.25	8.26	8.30	6.21	5.46	5.42	6.01	5.89	6.11	6.23
parametric HF-adj	5.42	5.40	5.28	5.10	5.25	5.35	5.52	5.47	4.72	4.55	4.97	5.12	5.54	5.55
van der Waerden	5.75	6.34	6.68	6.93	8.78	9.18	10.24	5.03	5.54	6.88	8.36	10.79	13.29	15.95
KWF	5.31	6.09	6.65	6.97	8.55	9.19	10.20	4.87	5.31	6.70	8.32	10.56	13.21	15.72
Puri & Sen INT	6.00	6.51	6.75	6.53	7.04	7.55	7.32	5.10	4.72	4.84	5.16	5.24	5.60	5.51
Puri & Sen	6.13	6.97	7.25	6.91	8.20	8.48	8.54	5.39	5.11	5.54	6.28	6.89	7.47	7.70
INT	7.38	7.62	7.43	7.09	7.80	8.18	7.75	5.99	5.44	5.45	5.85	6.22	6.17	6.05
ART INT	10.66	10.55	9.86	9.61	10.49	10.40	10.03	7.19	6.74	6.59	6.84	7.09	7.20	6.91
Koch	3.78	4.81	5.66	6.04	8.38	9.50	10.94	3.83	4.91	6.45	7.71	9.80	12.35	15.20
ATS	6.21	6.40	6.25	6.06	6.88	7.05	7.34	4.99	4.65	4.79	5.14	5.26	5.72	5.46
ATS (uncorr.)								4.94	4.64	5.01	5.80	5.89	6.34	6.63



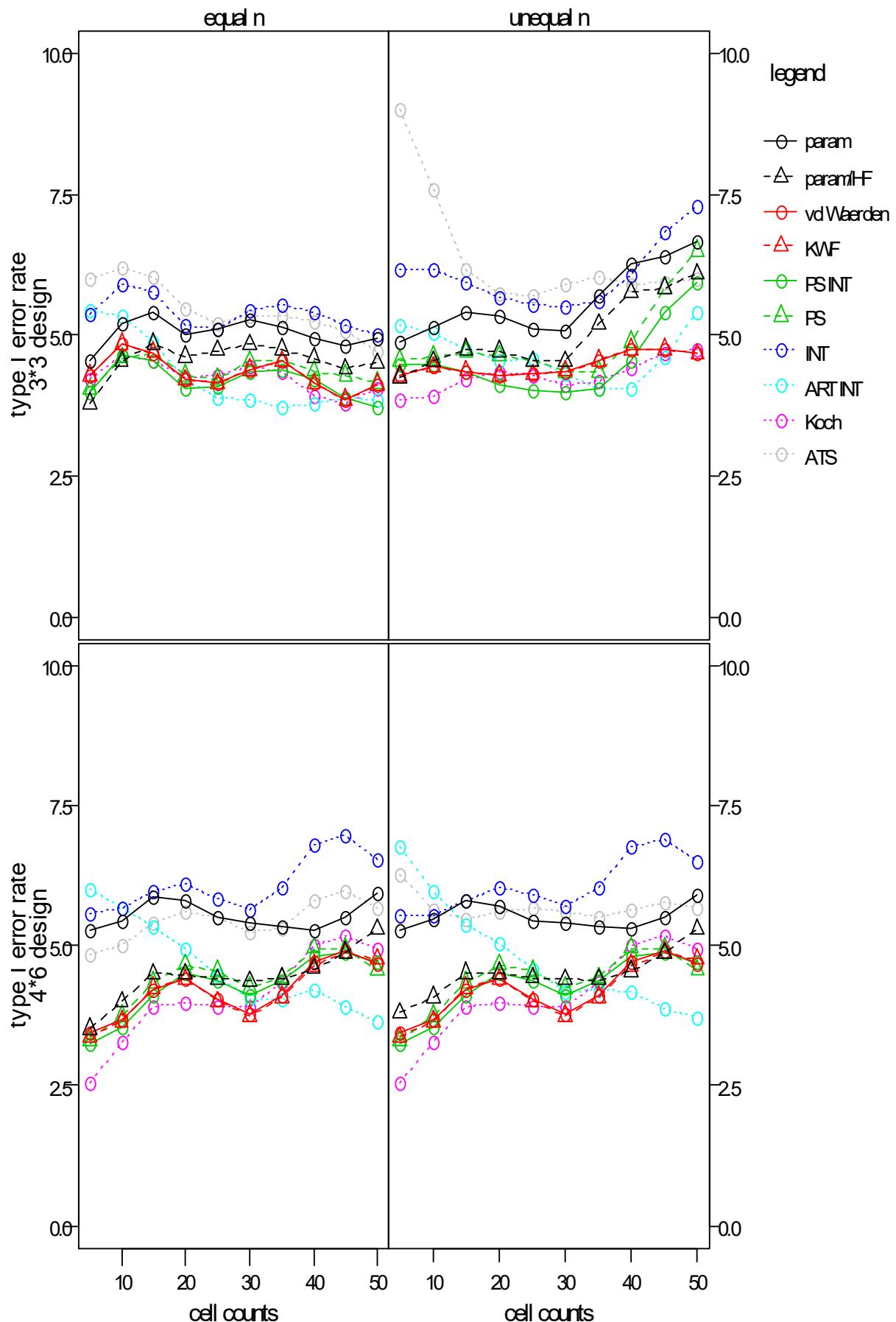
1. 6. 2. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.81	5.17	5.34	5.31	5.29	5.60	4.78	6.24	5.91	5.85	6.15	5.61	5.70	5.83
parametric HF-adj	4.66	4.90	5.07	5.12	5.02	5.22	4.53	5.77	5.54	5.51	5.80	5.34	5.26	5.57
van der Waerden	4.66	4.76	4.72	5.00	5.64	6.21	6.20	5.53	6.09	6.36	6.72	7.80	9.21	9.43
KWF	4.66	4.76	4.72	5.00	5.64	6.21	6.20	5.53	6.09	6.36	6.72	7.80	9.21	9.43
Puri & Sen INT	3.77	3.92	4.29	4.59	4.47	4.70	3.97	4.40	4.26	4.39	4.84	4.80	4.88	5.27
Puri & Sen	4.03	4.35	4.64	4.72	4.62	5.30	5.08	4.85	4.70	4.70	5.20	5.83	6.30	7.07
INT	4.68	4.85	5.27	5.54	5.41	5.78	4.85	6.05	5.59	5.61	6.07	5.91	5.94	5.95
ART INT	5.12	5.34	5.57	5.76	5.94	6.05	5.28	6.67	6.31	6.56	7.24	6.50	6.38	6.37
Koch	4.43	4.64	4.91	5.24	5.26	5.93	6.47	4.75	5.36	6.35	7.14	7.66	9.00	9.58
ATS	21.28	28.40	39.16	49.59	67.86	80.24	88.23	10.32	9.49	9.64	10.75	12.98	15.39	18.15
ATS (uncorr.)	7.49	6.93	6.67	6.95	7.55	8.33	8.87	9.62	8.32	7.33	7.56	7.55	8.05	8.74
large design (4*6)														
parametric	5.00	5.38	5.76	5.68	5.36	5.80	5.85	7.37	6.85	6.49	6.28	6.11	6.35	5.20
parametric HF-adj	4.48	4.67	4.96	4.90	4.74	5.04	5.15	6.08	5.99	5.89	5.59	5.32	5.41	4.30
van der Waerden	4.41	4.60	4.91	5.49	6.02	6.55	6.17	5.42	5.46	5.94	6.49	6.51	7.23	6.99
KWF	4.33	4.56	4.84	5.35	5.96	6.46	6.05	5.43	5.51	5.89	6.42	6.45	7.25	6.89
Puri & Sen INT	5.20	5.35	5.44	5.26	5.14	5.64	5.32	4.85	5.26	5.75	5.74	5.62	5.54	4.78
Puri & Sen	5.26	5.37	5.44	5.45	5.51	5.94	5.47	5.18	5.40	5.80	5.91	6.21	6.05	5.62
INT	5.33	5.55	5.68	5.52	5.38	6.00	5.75	6.72	6.58	6.71	6.56	6.17	6.04	5.23
ART INT	6.08	6.19	6.21	5.99	5.94	6.34	6.09	8.05	7.60	7.40	7.31	6.81	7.09	5.60
Koch	3.35	3.78	4.25	4.80	5.17	5.96	5.82	3.14	4.14	5.28	6.01	6.24	6.59	7.05
ATS	10.44	12.81	16.91	21.69	32.15	41.92	50.92	6.87	6.70	6.39	6.43	7.20	8.64	8.67
ATS (uncorr.)	6.42	6.15	5.67	5.71	6.67	6.55	6.80	6.32	5.65	5.36	5.55	6.04	5.55	6.32



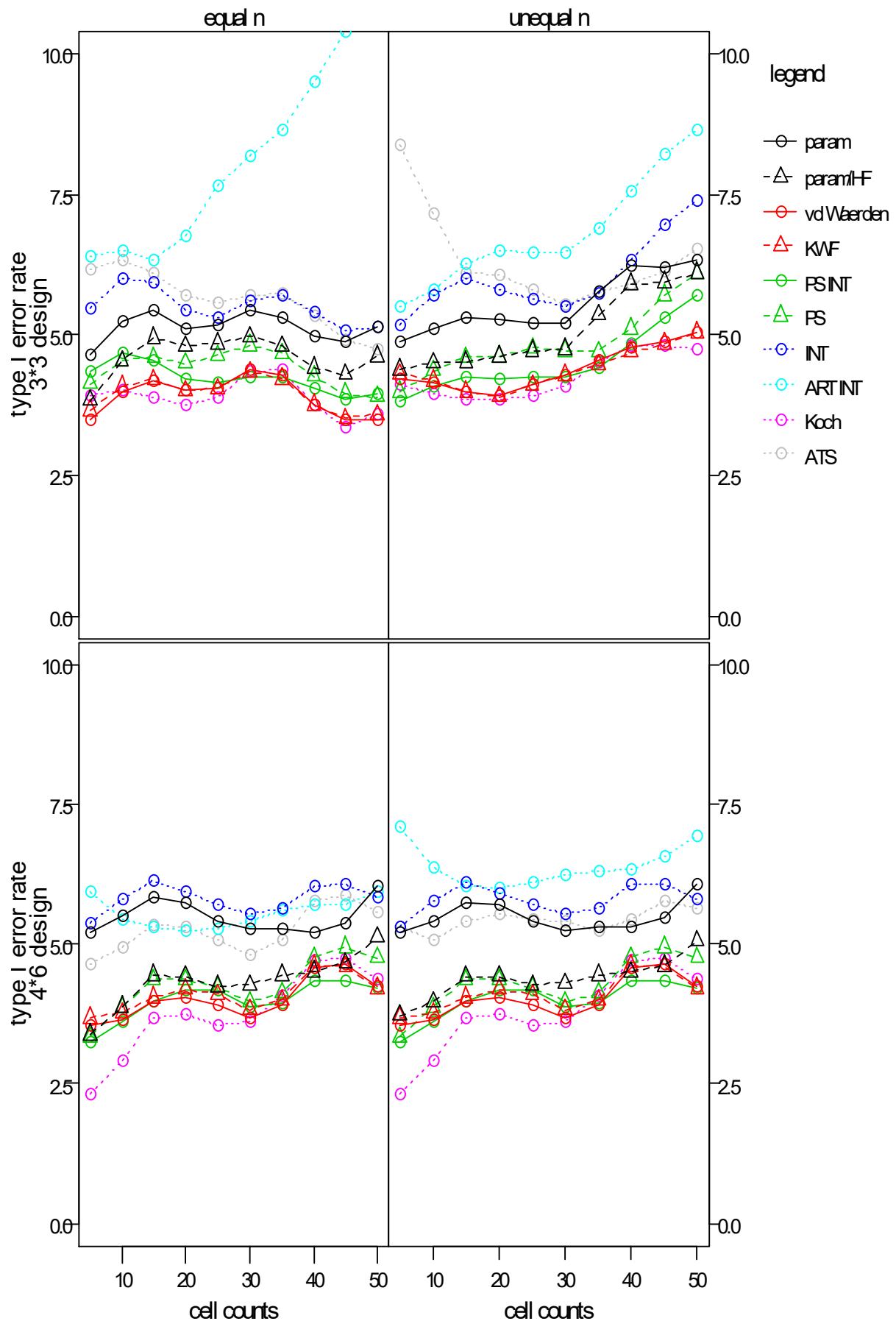
1. 6. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.54	5.21	5.39	5.02	5.26	4.95	4.95	4.87	5.14	5.39	5.33	5.06	6.27	6.65
parametric HF-adj	3.79	4.53	4.84	4.62	4.83	4.59	4.50	4.25	4.53	4.74	4.71	4.53	5.75	6.09
van der Waerden	4.28	4.84	4.69	4.21	4.38	4.14	4.12	4.28	4.44	4.36	4.28	4.36	4.74	4.67
KWF	4.28	4.84	4.69	4.21	4.38	4.14	4.12	4.28	4.44	4.36	4.28	4.36	4.74	4.67
Puri & Sen INT	3.98	4.64	4.54	4.05	4.33	4.20	3.73	4.47	4.49	4.34	4.11	3.98	4.54	5.93
Puri & Sen	4.03	4.59	4.69	4.28	4.53	4.36	4.15	4.55	4.62	4.69	4.64	4.34	4.88	6.50
INT	5.36	5.89	5.78	5.17	5.42	5.39	5.00	6.17	6.15	5.94	5.67	5.50	6.05	7.28
ART INT	5.42	5.34	4.89	4.23	3.84	3.77	3.85	5.18	5.04	4.73	4.56	4.31	4.06	5.41
Koch	4.21	4.64	4.56	4.26	4.44	3.91	4.05	3.85	3.92	4.20	4.36	4.12	4.41	4.75
ATS	6.01	6.21	6.04	5.46	5.34	5.25	4.71	8.99	7.58	6.15	5.73	5.89	5.89	6.00
ATS (uncorr.)								8.98	7.57	6.28	6.07	5.94	6.15	6.15
large design (4*6)														
parametric	5.27	5.45	5.86	5.80	5.40	5.28	5.95	5.28	5.47	5.81	5.69	5.40	5.29	5.89
parametric HF-adj	3.52	4.00	4.50	4.49	4.36	4.59	5.30	3.80	4.08	4.51	4.51	4.40	4.54	5.29
van der Waerden	3.45	3.68	4.22	4.40	3.77	4.69	4.66	3.45	3.68	4.22	4.40	3.77	4.69	4.66
KWF	3.37	3.65	4.25	4.40	3.74	4.64	4.75	3.37	3.65	4.25	4.40	3.74	4.64	4.75
Puri & Sen INT	3.23	3.53	4.12	4.51	4.12	4.81	4.70	3.23	3.53	4.12	4.51	4.12	4.81	4.70
Puri & Sen	3.30	3.74	4.35	4.65	4.25	4.95	4.56	3.30	3.74	4.35	4.65	4.25	4.95	4.56
INT	5.58	5.68	5.97	6.09	5.65	6.79	6.55	5.55	5.54	5.80	6.05	5.69	6.76	6.51
ART INT	6.00	5.66	5.35	4.94	4.03	4.22	3.63	6.76	5.96	5.38	5.05	4.19	4.19	3.72
Koch	2.56	3.29	3.90	3.98	3.90	5.01	4.93	2.56	3.29	3.90	3.98	3.90	5.01	4.93
ATS	4.85	5.01	5.39	5.60	5.24	5.81	5.68	6.26	5.65	5.46	5.61	5.59	5.62	5.68
ATS (uncorr.)								6.26	5.65	5.46	5.61	5.59	5.62	5.68



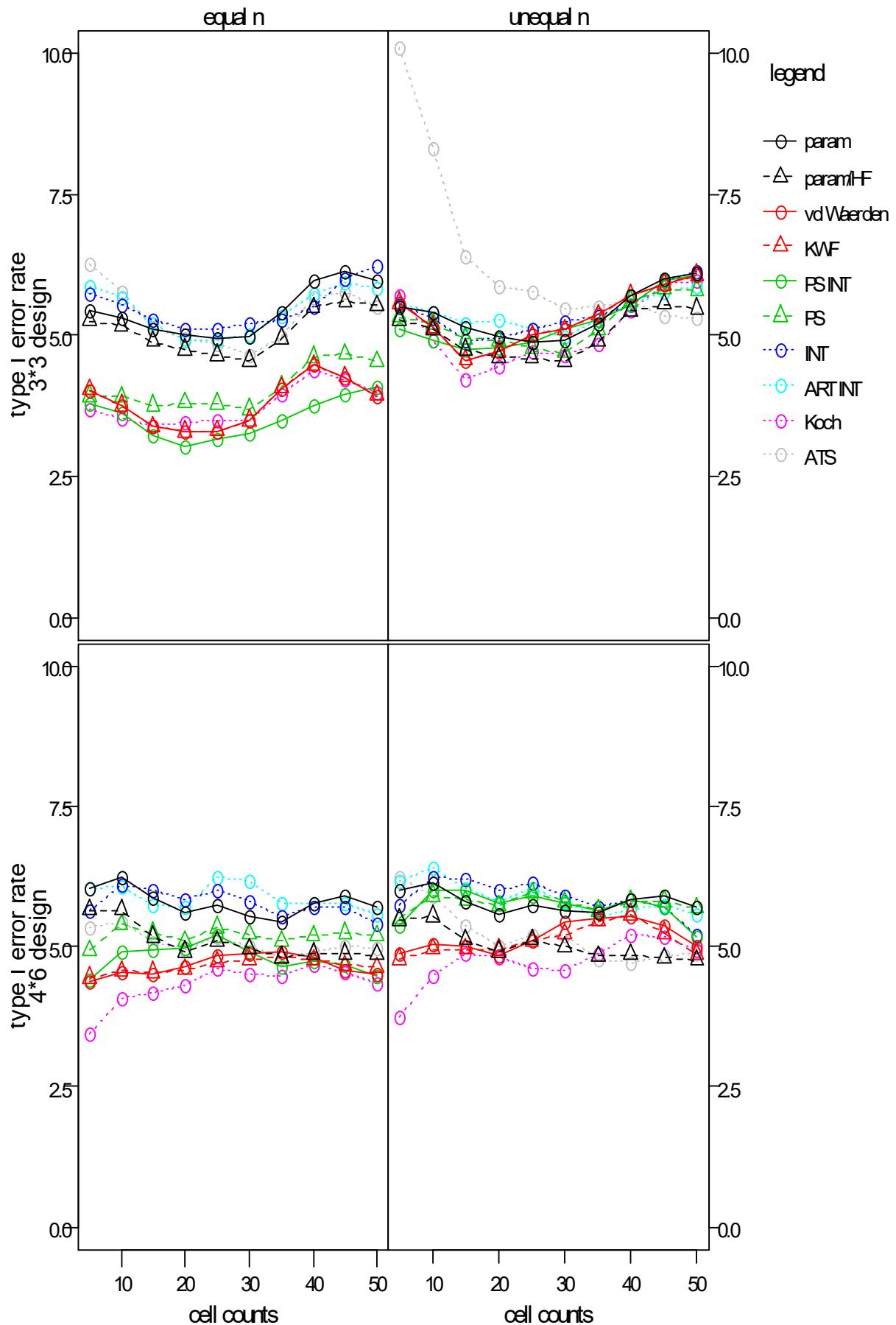
1. 6. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.63	5.24	5.44	5.10	5.45	4.99	5.15	4.87	5.12	5.30	5.26	5.21	6.24	6.34
parametric HF-adj	3.83	4.54	4.94	4.80	4.97	4.42	4.62	4.38	4.50	4.51	4.62	4.74	5.90	6.10
van der Waerden	3.48	3.98	4.19	4.00	4.39	3.75	3.50	4.20	4.15	3.99	3.92	4.28	4.76	5.03
KWF	3.65	4.08	4.21	4.00	4.34	3.75	3.57	4.30	4.19	3.98	3.90	4.28	4.69	5.04
Puri & Sen INT	4.35	4.69	4.55	4.20	4.26	4.05	3.94	3.82	4.09	4.25	4.20	4.25	4.83	5.70
Puri & Sen	4.13	4.54	4.60	4.49	4.81	4.26	3.90	3.98	4.36	4.60	4.61	4.71	5.11	6.10
INT	5.48	5.99	5.94	5.45	5.60	5.39	5.14	5.16	5.70	6.01	5.81	5.49	6.33	7.40
ART INT	6.41	6.50	6.33	6.75	8.18	9.49	10.97	5.50	5.79	6.26	6.49	6.45	7.56	8.65
Koch	3.91	4.02	3.90	3.75	4.34	3.74	3.60	4.10	3.96	3.84	3.84	4.09	4.81	4.75
ATS	6.15	6.34	6.09	5.71	5.71	5.34	4.75	8.36	7.14	6.10	6.06	5.53	5.89	6.52
ATS (uncorr.)								8.07	6.89	6.17	6.45	5.97	5.85	5.77
large design (4*6)														
parametric	5.20	5.51	5.85	5.74	5.26	5.19	6.04	5.20	5.41	5.74	5.69	5.24	5.29	6.07
parametric HF-adj	3.38	3.88	4.45	4.42	4.26	4.51	5.12	3.72	3.96	4.42	4.42	4.30	4.50	5.05
van der Waerden	3.53	3.65	3.96	4.05	3.69	4.56	4.25	3.53	3.65	3.96	4.05	3.69	4.56	4.25
KWF	3.68	3.77	4.04	4.19	3.82	4.61	4.21	3.68	3.77	4.04	4.19	3.82	4.61	4.21
Puri & Sen INT	3.23	3.60	3.98	4.19	3.86	4.34	4.20	3.23	3.60	3.98	4.19	3.86	4.34	4.20
Puri & Sen	3.33	3.86	4.36	4.36	3.96	4.76	4.75	3.33	3.86	4.36	4.36	3.96	4.76	4.75
INT	5.37	5.81	6.15	5.94	5.55	6.04	5.82	5.30	5.78	6.11	5.90	5.54	6.06	5.80
ART INT	5.92	5.44	5.29	5.25	5.40	5.71	5.94	7.09	6.38	6.04	6.01	6.24	6.35	6.92
Koch	2.30	2.91	3.69	3.74	3.62	4.69	4.36	2.30	2.91	3.69	3.74	3.62	4.69	4.36
ATS	4.65	4.94	5.33	5.32	4.79	5.76	5.56	5.31	5.08	5.41	5.55	5.41	5.45	5.63
ATS (uncorr.)								5.31	5.08	5.41	5.55	5.41	5.45	5.63



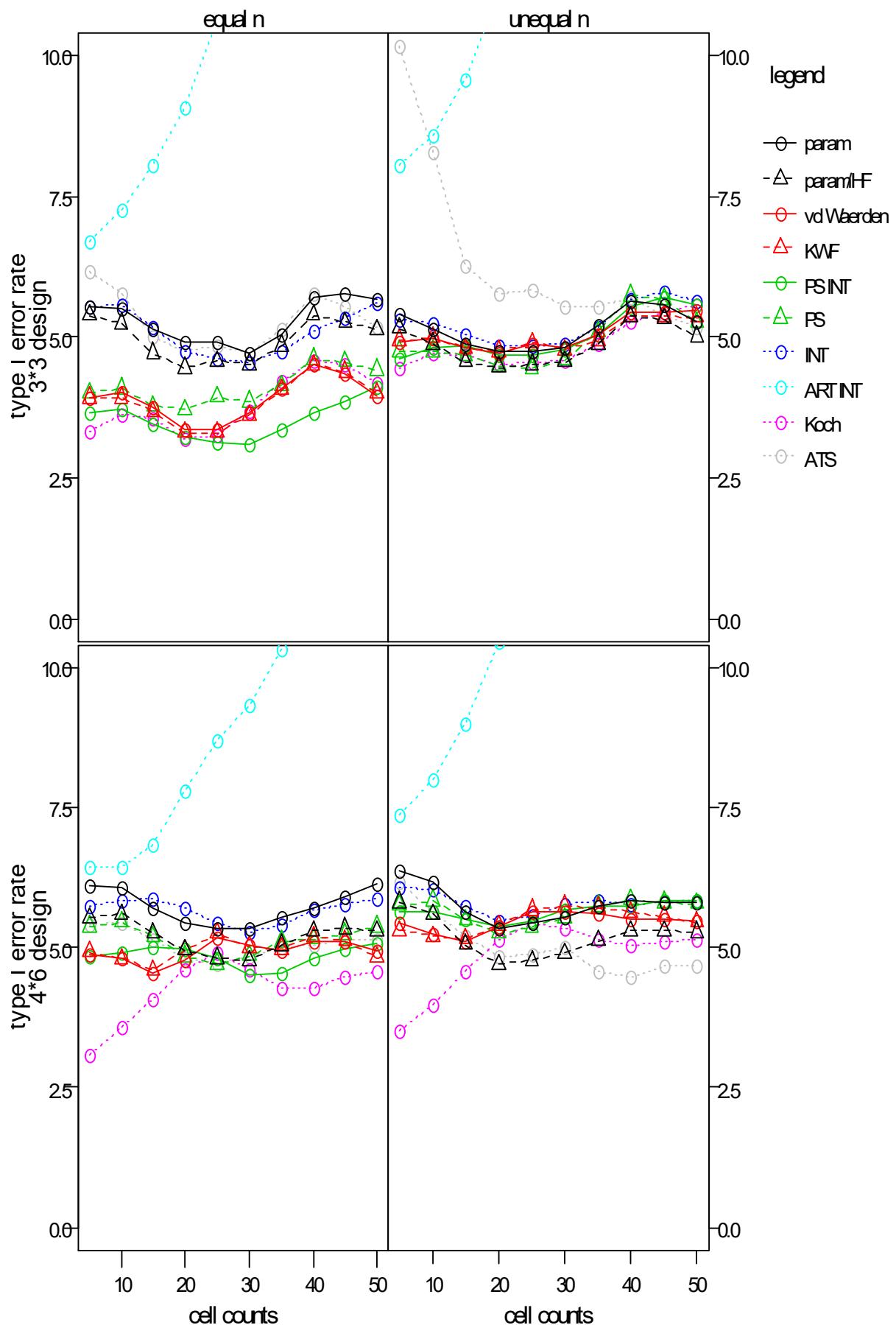
1. 6. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.45	5.31	5.10	5.01	4.99	5.96	5.98	5.50	5.39	5.15	4.97	4.90	5.71	6.10
parametric HF-adj	5.25	5.18	4.89	4.75	4.55	5.49	5.53	5.28	5.10	4.75	4.60	4.55	5.42	5.47
van der Waerden	4.03	3.76	3.38	3.29	3.49	4.47	3.93	5.57	5.14	4.56	4.71	5.10	5.70	6.07
KWF	4.03	3.76	3.38	3.29	3.49	4.47	3.93	5.57	5.14	4.56	4.71	5.10	5.70	6.07
Puri & Sen INT	3.78	3.62	3.21	3.04	3.26	3.75	4.08	5.12	4.92	4.74	4.78	5.10	5.53	6.05
Puri & Sen	3.92	3.91	3.75	3.80	3.69	4.61	4.53	5.32	5.21	4.95	4.90	4.69	5.60	5.80
INT	5.72	5.54	5.26	5.12	5.19	5.51	6.23	5.55	5.30	4.91	4.94	5.25	5.55	6.12
ART INT	5.88	5.66	5.19	4.92	5.00	5.74	5.83	5.58	5.40	5.20	5.26	4.97	5.55	5.87
Koch	3.68	3.52	3.39	3.46	3.50	4.38	3.97	5.69	4.90	4.20	4.46	4.65	5.42	5.95
ATS	6.27	5.76	5.15	4.94	4.65	5.67	5.50	10.08	8.32	6.41	5.85	5.47	5.59	5.30
ATS (uncorr.)								10.78	8.15	5.76	5.15	5.31	5.49	5.57
large design (4*6)														
parametric	6.03	6.24	5.86	5.59	5.53	5.77	5.70	6.01	6.14	5.80	5.57	5.64	5.85	5.70
parametric HF-adj	5.65	5.65	5.17	4.91	4.96	4.88	4.85	5.48	5.54	5.12	4.91	5.00	4.85	4.75
van der Waerden	4.36	4.53	4.51	4.65	4.86	4.79	4.50	4.88	5.05	4.99	4.84	5.43	5.55	5.00
KWF	4.45	4.57	4.54	4.59	4.76	4.76	4.63	4.78	4.95	4.95	4.94	5.22	5.57	4.88
Puri & Sen INT	4.41	4.89	4.94	4.96	4.89	4.75	4.47	5.38	6.01	5.99	5.76	5.76	5.84	5.18
Puri & Sen	4.93	5.40	5.24	5.09	5.22	5.20	5.20	5.50	5.91	5.83	5.72	5.79	5.80	5.68
INT	5.63	6.09	6.01	5.85	5.79	5.70	5.41	5.73	6.22	6.19	6.00	5.90	5.84	5.20
ART INT	6.02	6.07	5.75	5.71	6.16	5.78	5.56	6.18	6.40	6.05	5.80	5.80	5.67	5.56
Koch	3.46	4.06	4.18	4.31	4.50	4.66	4.33	3.73	4.49	4.86	4.79	4.56	5.21	4.95
ATS	5.35	5.44	5.06	4.95	5.00	4.90	4.97	6.25	5.89	5.36	4.99	5.22	4.69	4.88
ATS (uncorr.)								6.25	5.89	5.36	4.99	5.22	4.69	4.88



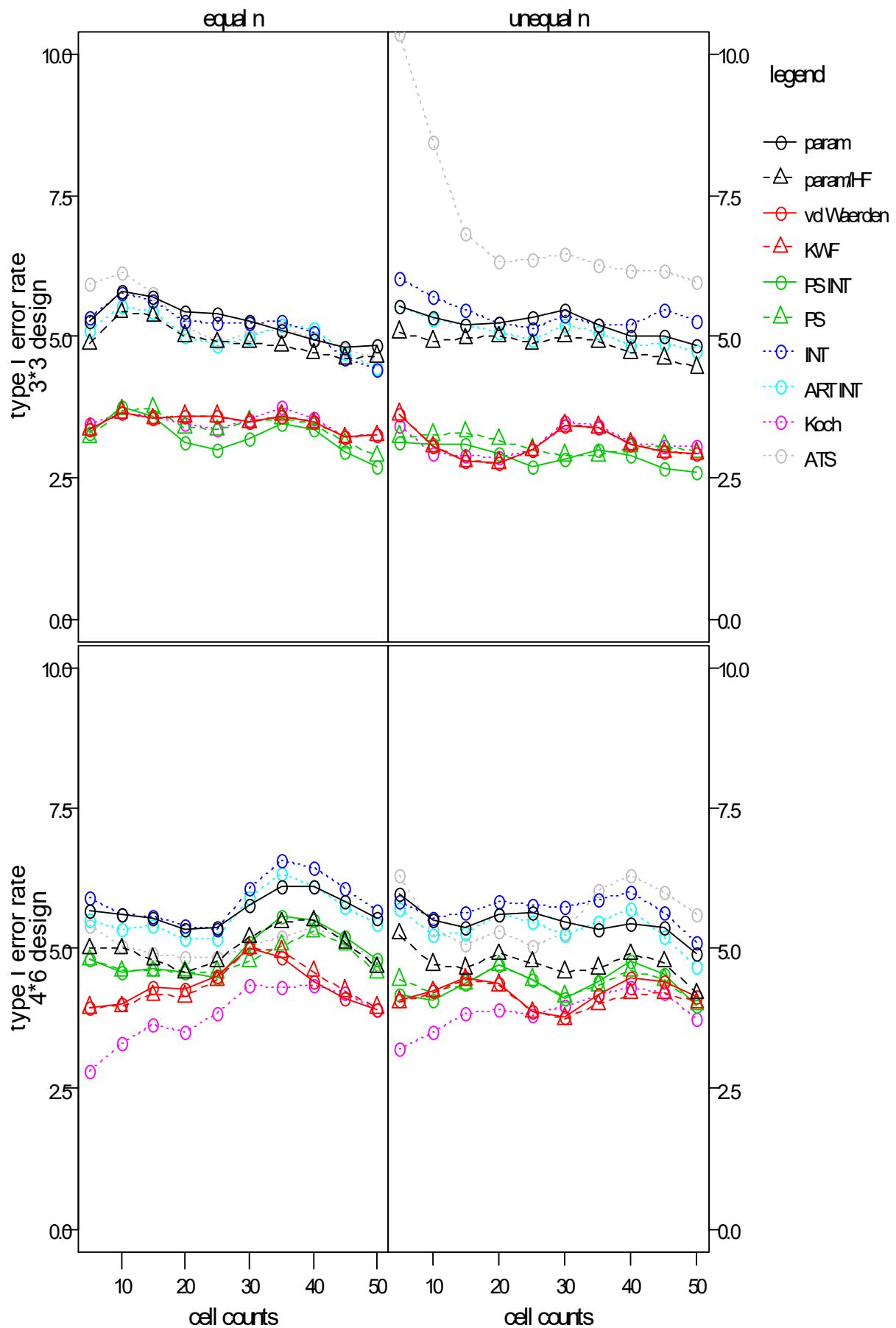
1. 6. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.53	5.51	5.15	4.90	4.72	5.69	5.67	5.40	5.14	4.86	4.75	4.82	5.65	5.27
parametric HF-adj	5.38	5.24	4.71	4.45	4.51	5.38	5.13	5.15	4.88	4.56	4.46	4.56	5.36	5.01
van der Waerden	3.93	4.00	3.76	3.36	3.66	4.50	3.96	4.92	4.99	4.80	4.70	4.81	5.43	5.47
KWF	3.92	3.92	3.68	3.30	3.61	4.50	4.00	4.95	4.99	4.80	4.75	4.77	5.36	5.35
Puri & Sen INT	3.66	3.71	3.45	3.23	3.09	3.65	4.12	4.60	4.81	4.84	4.66	4.76	5.54	5.58
Puri & Sen	4.01	4.09	3.78	3.71	3.86	4.61	4.42	4.75	4.75	4.66	4.49	4.59	5.74	5.26
INT	5.55	5.56	5.17	4.74	4.55	5.11	5.59	5.32	5.24	5.03	4.83	4.88	5.67	5.63
ART INT	6.70	7.26	8.03	9.06	12.00	15.54	18.82	8.03	8.59	9.57	11.12	14.56	17.81	20.38
Koch	3.33	3.62	3.54	3.19	3.69	4.59	4.18	4.46	4.70	4.66	4.51	4.59	5.27	5.57
ATS	6.15	5.76	5.01	4.75	4.72	5.75	5.18	10.16	8.26	6.25	5.76	5.53	5.70	5.18
ATS (uncorr.)								9.33	7.53	5.61	4.92	5.28	5.52	5.43
large design (4*6)														
parametric	6.10	6.06	5.71	5.44	5.33	5.70	6.13	6.37	6.17	5.64	5.34	5.55	5.85	5.80
parametric HF-adj	5.53	5.59	5.26	4.95	4.76	5.29	5.30	5.80	5.60	5.05	4.70	4.89	5.30	5.28
van der Waerden	4.87	4.79	4.54	4.78	5.03	5.10	4.93	5.45	5.24	5.10	5.36	5.65	5.50	5.48
KWF	4.92	4.79	4.60	4.95	5.01	5.19	4.83	5.30	5.19	5.15	5.39	5.74	5.62	5.45
Puri & Sen INT	4.85	4.91	4.99	4.96	4.51	4.80	5.07	5.62	5.64	5.51	5.36	5.66	5.75	5.82
Puri & Sen	5.38	5.45	5.19	4.84	4.85	5.15	5.37	5.75	5.84	5.50	5.25	5.53	5.85	5.78
INT	5.72	5.82	5.88	5.69	5.26	5.68	5.87	6.08	6.05	5.75	5.47	5.78	5.78	5.82
ART INT	6.45	6.42	6.84	7.80	9.32	12.01	13.78	7.35	8.00	9.00	10.45	13.71	17.33	19.50
Koch	3.08	3.59	4.06	4.60	4.62	4.27	4.57	3.50	3.99	4.58	5.15	5.34	5.04	5.13
ATS	5.42	5.44	5.14	4.81	4.83	5.04	5.15	6.17	5.65	5.22	4.84	4.99	4.47	4.68
ATS (uncorr.)								6.17	5.65	5.22	4.84	4.99	4.47	4.68



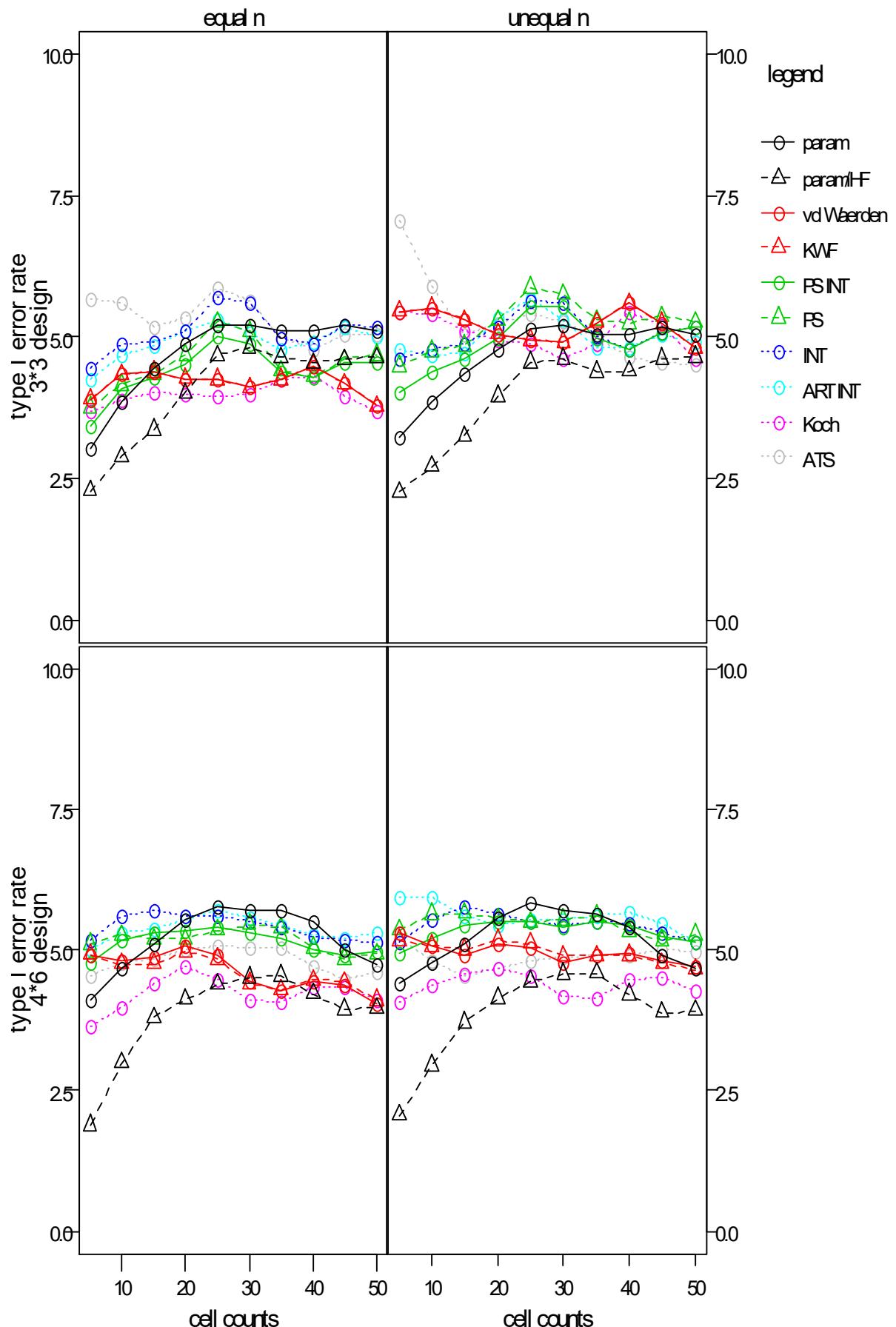
1. 6. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.26	5.81	5.71	5.42	5.28	4.95	4.83	5.53	5.34	5.21	5.24	5.46	5.00	4.83
parametric HF-adj	4.86	5.42	5.36	5.01	4.89	4.70	4.65	5.08	4.91	4.96	5.00	5.00	4.71	4.45
van der Waerden	3.36	3.65	3.54	3.59	3.48	3.48	3.25	3.62	3.05	2.80	2.76	3.42	3.10	2.93
KWF	3.36	3.65	3.54	3.59	3.48	3.48	3.25	3.62	3.05	2.80	2.76	3.42	3.10	2.93
Puri & Sen INT	3.29	3.74	3.57	3.12	3.19	3.35	2.68	3.13	3.09	3.10	2.94	2.84	2.88	2.60
Puri & Sen	3.21	3.70	3.73	3.39	3.49	3.45	2.88	3.22	3.26	3.30	3.17	2.89	3.04	2.95
INT	5.33	5.78	5.64	5.28	5.25	5.06	4.42	6.04	5.71	5.46	5.24	5.38	5.19	5.28
ART INT	5.09	5.54	5.43	5.01	4.97	5.15	4.45	5.55	5.30	5.19	5.06	5.19	4.85	4.73
Koch	3.46	3.64	3.59	3.45	3.53	3.54	3.27	3.42	2.94	2.88	2.85	3.48	3.11	3.07
ATS	5.93	6.12	5.76	5.18	5.03	4.99	4.60	10.35	8.45	6.81	6.33	6.45	6.15	5.95
ATS (uncorr.)								9.86	7.73	5.88	5.51	5.15	5.90	5.60
large design (4*6)														
parametric	5.67	5.60	5.53	5.35	5.76	6.10	5.53	5.97	5.51	5.36	5.59	5.47	5.44	4.91
parametric HF-adj	5.00	5.00	4.81	4.56	5.20	5.49	4.66	5.25	4.71	4.64	4.89	4.58	4.90	4.20
van der Waerden	3.93	4.01	4.30	4.29	4.99	4.40	3.92	4.06	4.25	4.46	4.39	3.76	4.46	4.15
KWF	3.95	3.96	4.16	4.14	4.99	4.59	3.95	4.05	4.22	4.44	4.35	3.74	4.19	4.03
Puri & Sen INT	4.80	4.59	4.65	4.56	5.11	5.51	4.81	4.17	4.06	4.36	4.70	4.12	4.78	3.96
Puri & Sen	4.80	4.60	4.60	4.59	4.78	5.30	4.56	4.45	4.22	4.38	4.70	4.15	4.61	4.00
INT	5.89	5.60	5.58	5.39	6.06	6.45	5.68	5.84	5.53	5.62	5.85	5.74	6.00	5.10
ART INT	5.50	5.34	5.39	5.18	5.91	6.11	5.45	5.69	5.25	5.26	5.60	5.25	5.69	4.66
Koch	2.80	3.31	3.64	3.50	4.33	4.33	3.90	3.21	3.50	3.84	3.91	3.99	4.30	3.73
ATS	5.39	5.04	4.91	4.84	5.05	5.36	4.73	6.31	5.35	5.06	5.31	5.28	6.29	5.61
ATS (uncorr.)								6.11	5.55	5.35	5.17	4.51	5.05	5.75



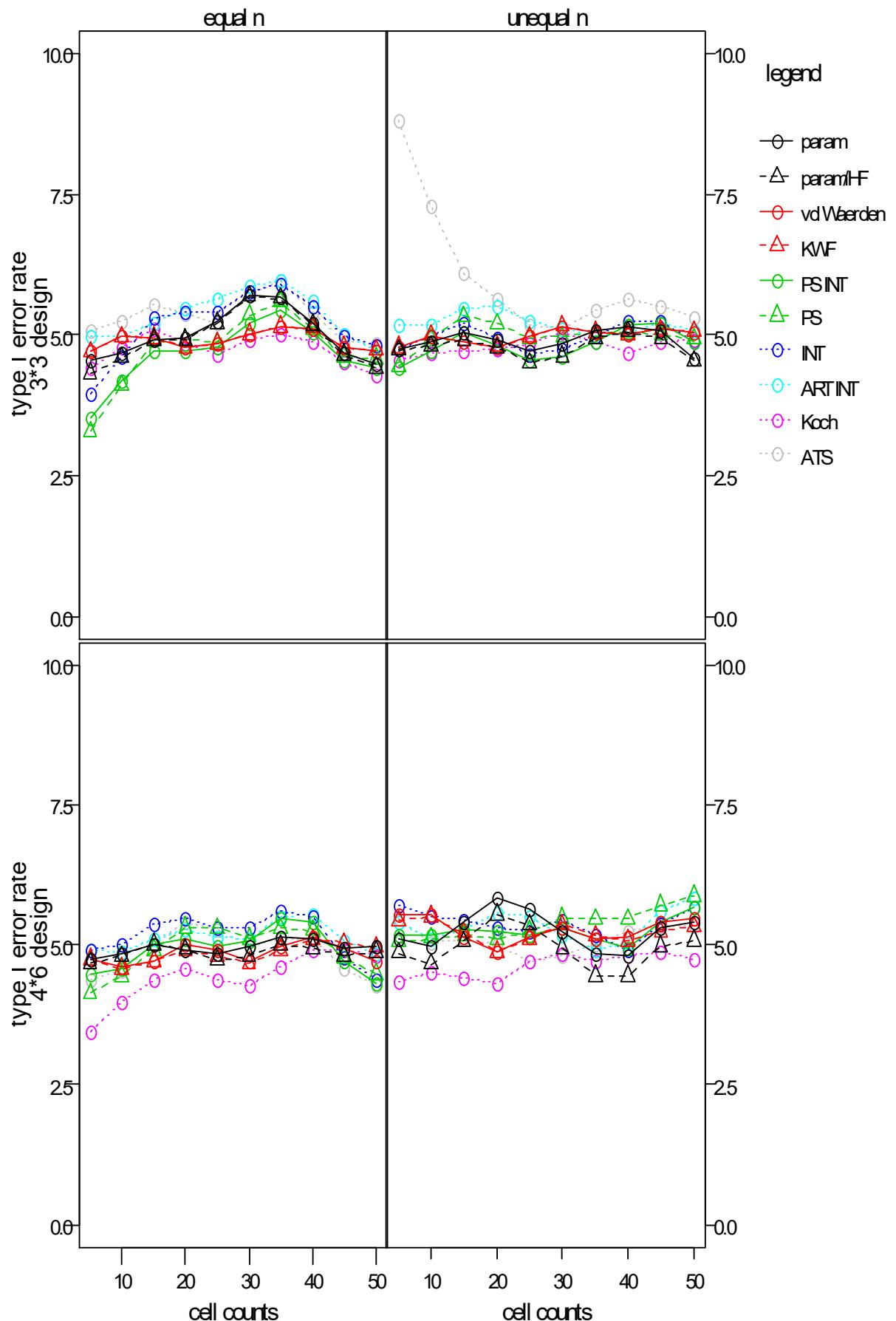
1. 6. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	3.03	3.86	4.45	4.86	5.22	5.10	5.10	3.23	3.84	4.35	4.79	5.22	5.04	5.05
parametric HF-adj	2.28	2.88	3.36	4.01	4.81	4.53	4.63	2.25	2.71	3.25	3.95	4.62	4.39	4.65
van der Waerden	3.90	4.33	4.38	4.26	4.11	4.49	3.77	5.45	5.50	5.29	5.05	4.91	5.59	4.80
KWF	3.90	4.33	4.38	4.26	4.11	4.49	3.77	5.45	5.50	5.29	5.05	4.91	5.59	4.80
Puri & Sen INT	3.43	4.07	4.29	4.51	4.89	4.29	4.55	4.01	4.38	4.60	4.96	5.52	4.76	5.17
Puri & Sen	3.75	4.15	4.33	4.68	5.09	4.29	4.68	4.48	4.75	4.85	5.30	5.76	5.24	5.26
INT	4.46	4.88	4.91	5.12	5.59	4.89	5.16	4.60	4.79	4.88	5.17	5.59	4.76	5.18
ART INT	4.25	4.67	4.85	5.11	5.06	4.90	5.01	4.78	4.67	4.72	5.33	5.29	4.81	4.91
Koch	3.68	3.90	4.03	3.98	3.99	4.30	3.67	5.45	5.40	5.09	4.93	4.61	5.44	4.61
ATS	5.66	5.61	5.17	5.34	5.64	4.79	5.03	7.06	5.90	5.03	5.24	5.26	4.64	4.52
ATS (uncorr.)								7.32	6.30	5.14	5.21	5.56	4.91	4.93
large design (4*6)														
parametric	4.10	4.66	5.11	5.53	5.69	5.50	4.75	4.40	4.76	5.10	5.57	5.69	5.40	4.67
parametric HF-adj	1.89	2.99	3.80	4.12	4.51	4.22	3.97	2.06	2.95	3.71	4.14	4.58	4.21	3.92
van der Waerden	4.90	4.81	4.86	5.06	4.44	4.44	4.05	5.30	5.08	4.90	5.10	4.78	4.95	4.72
KWF	4.92	4.75	4.75	4.97	4.41	4.47	4.11	5.17	5.08	5.01	5.17	4.89	4.91	4.65
Puri & Sen INT	4.78	5.18	5.31	5.35	5.29	5.01	4.98	4.95	5.22	5.44	5.51	5.42	5.43	5.15
Puri & Sen	5.11	5.26	5.20	5.20	5.45	5.04	4.93	5.35	5.64	5.65	5.56	5.54	5.32	5.28
INT	5.16	5.60	5.70	5.61	5.50	5.25	5.15	5.13	5.55	5.77	5.64	5.44	5.46	5.15
ART INT	5.00	5.31	5.38	5.53	5.58	5.27	5.30	5.93	5.95	5.60	5.44	5.55	5.66	5.13
Koch	3.63	3.96	4.42	4.70	4.12	4.33	4.12	4.06	4.39	4.56	4.66	4.16	4.46	4.28
ATS	4.53	4.76	4.85	5.00	5.05	4.69	4.62	5.22	4.81	4.54	4.67	4.88	4.91	4.98
ATS (uncorr.)								4.93	4.94	4.60	4.44	4.45	4.45	4.58



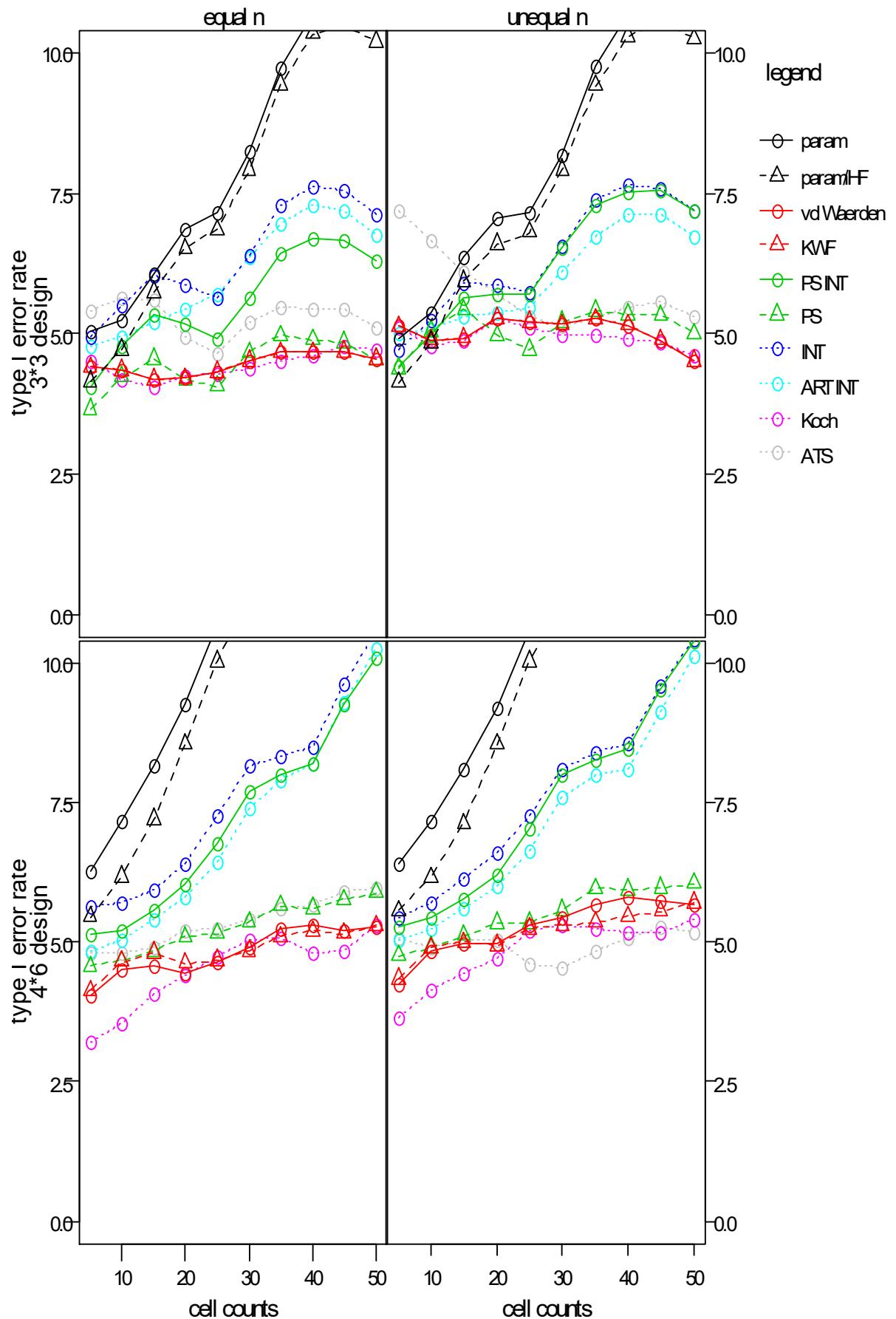
1. 6. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.55	4.69	4.90	4.93	5.70	5.20	4.47	4.75	4.89	5.04	4.92	4.85	5.15	4.59
parametric HF-adj	4.32	4.59	4.91	4.91	5.68	5.17	4.42	4.72	4.80	4.90	4.76	4.62	5.05	4.53
van der Waerden	4.70	4.97	4.95	4.76	5.01	5.12	4.72	4.78	4.99	4.89	4.79	5.15	5.00	5.05
KWF	4.70	4.97	4.95	4.76	5.01	5.12	4.72	4.78	4.99	4.89	4.79	5.15	5.00	5.05
Puri & Sen INT	3.51	4.17	4.72	4.72	5.20	5.05	4.40	4.40	4.72	5.03	4.81	4.62	5.18	4.88
Puri & Sen	3.28	4.11	4.89	4.91	5.35	5.10	4.58	4.43	4.92	5.33	5.20	4.97	5.04	4.92
INT	3.96	4.62	5.31	5.39	5.77	5.49	4.80	4.75	4.99	5.20	4.94	4.74	5.24	4.86
ART INT	4.98	4.99	5.20	5.46	5.88	5.59	4.70	5.17	5.18	5.46	5.50	5.09	5.04	5.06
Koch	4.40	4.76	5.11	4.84	4.91	4.88	4.27	4.53	4.66	4.71	4.74	5.03	4.67	4.92
ATS	5.08	5.25	5.54	5.38	5.71	5.39	4.85	8.81	7.29	6.10	5.65	5.10	5.64	5.32
ATS (uncorr.)								7.62	6.89	6.20	5.75	5.89	5.72	4.73
large design (4*6)														
parametric	4.75	4.84	5.00	4.90	4.96	5.09	4.97	5.09	4.97	5.40	5.84	5.25	4.81	5.41
parametric HF-adj	4.68	4.80	5.01	4.92	4.79	4.94	4.88	4.85	4.65	5.06	5.54	4.94	4.44	5.08
van der Waerden	4.74	4.60	4.72	5.02	4.69	5.15	4.72	5.55	5.53	5.14	4.86	5.29	5.14	5.47
KWF	4.74	4.58	4.71	4.91	4.68	5.10	4.95	5.43	5.51	5.22	4.88	5.36	5.08	5.33
Puri & Sen INT	4.47	4.59	4.99	5.11	5.06	5.39	4.30	5.18	5.17	5.28	5.24	5.30	4.94	5.68
Puri & Sen	4.13	4.44	4.91	5.31	5.11	5.25	4.48	5.05	5.12	5.16	5.10	5.48	5.46	5.87
INT	4.90	4.99	5.38	5.47	5.31	5.49	4.38	5.70	5.50	5.44	5.32	5.43	4.90	5.67
ART INT	4.90	4.88	5.09	5.26	5.10	5.54	4.85	5.39	5.11	5.26	5.58	5.18	5.03	5.83
Koch	3.46	3.96	4.39	4.57	4.26	4.92	4.82	4.33	4.50	4.41	4.31	4.85	4.82	4.75
ATS	4.38	4.53	5.00	5.41	4.96	5.09	4.27	5.46	5.04	5.12	5.00	4.81	5.24	5.35
ATS (uncorr.)								5.44	5.01	4.99	5.09	4.96	5.28	4.85



1. 6. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.03	5.23	6.05	6.85	8.25	10.68	10.61	4.91	5.38	6.36	7.04	8.19	10.69	10.60
parametric HF-adj	4.15	4.71	5.74	6.52	7.92	10.34	10.20	4.13	4.84	5.93	6.60	7.91	10.30	10.25
van der Waerden	4.40	4.35	4.19	4.20	4.51	4.67	4.55	5.13	4.89	4.92	5.28	5.16	5.15	4.51
KWF	4.40	4.35	4.19	4.20	4.51	4.67	4.55	5.13	4.89	4.92	5.28	5.16	5.15	4.51
Puri & Sen INT	4.06	4.78	5.35	5.16	5.64	6.70	6.31	4.41	4.96	5.64	5.71	6.53	7.53	7.18
Puri & Sen	3.66	4.23	4.55	4.19	4.66	4.89	4.55	4.38	5.04	5.42	4.97	5.21	5.34	5.00
INT	4.93	5.50	6.04	5.86	6.40	7.62	7.11	4.70	5.24	5.89	5.86	6.56	7.64	7.18
ART INT	4.76	4.94	5.20	5.44	6.36	7.29	6.76	5.02	5.08	5.29	5.36	6.11	7.11	6.71
Koch	4.50	4.19	4.06	4.24	4.38	4.62	4.70	5.12	4.79	4.88	5.26	4.96	4.90	4.60
ATS	5.40	5.64	5.61	4.93	5.22	5.42	5.11	8.93	7.65	6.74	5.96	4.67	5.82	4.96
ATS (uncorr.)								8.93	7.65	6.74	5.96	4.67	5.82	4.96
large design (4*6)														
parametric	6.28	7.18	8.16	9.25	11.97	14.65	17.91	6.39	7.18	8.10	9.19	11.90	14.74	17.80
parametric HF-adj	5.45	6.17	7.20	8.54	11.26	13.94	17.12	5.56	6.16	7.12	8.54	11.17	13.80	17.14
van der Waerden	4.03	4.50	4.58	4.45	4.89	5.31	5.28	4.23	4.84	4.97	4.97	5.45	5.80	5.68
KWF	4.13	4.65	4.81	4.62	4.84	5.19	5.29	4.35	4.90	5.00	4.94	5.30	5.46	5.70
Puri & Sen INT	5.13	5.19	5.58	6.03	7.70	8.19	10.10	5.27	5.45	5.76	6.20	8.00	8.45	10.40
Puri & Sen	4.57	4.66	4.83	5.09	5.36	5.61	5.88	4.75	4.91	5.12	5.34	5.57	5.94	6.05
INT	5.62	5.69	5.95	6.40	8.17	8.49	10.54	5.43	5.69	6.14	6.59	8.10	8.57	10.42
ART INT	4.83	5.04	5.41	5.81	7.40	8.21	10.24	5.03	5.24	5.60	5.99	7.61	8.09	10.12
Koch	3.20	3.56	4.08	4.41	5.03	4.80	5.30	3.65	4.14	4.44	4.72	5.30	5.17	5.40
ATS	4.82	4.79	4.90	5.19	5.39	5.66	5.96	5.07	4.89	5.04	5.04	4.54	5.06	5.18
ATS (uncorr.)								5.67	5.12	4.97	5.10	5.34	5.45	6.39

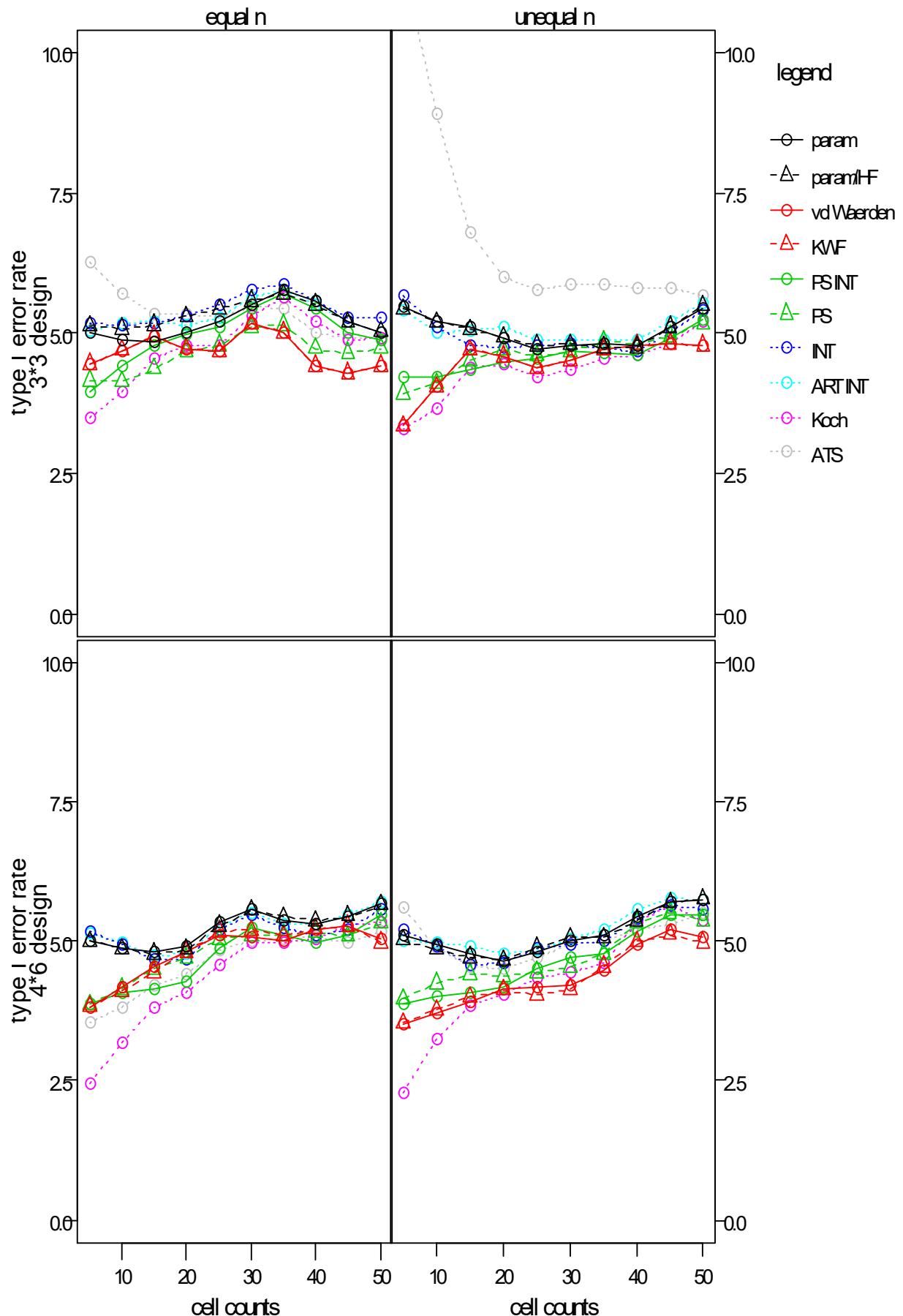


1. 7. Interaction effect AB - null model

1. 7. 1. equal correlations on B ($r=0.3$)

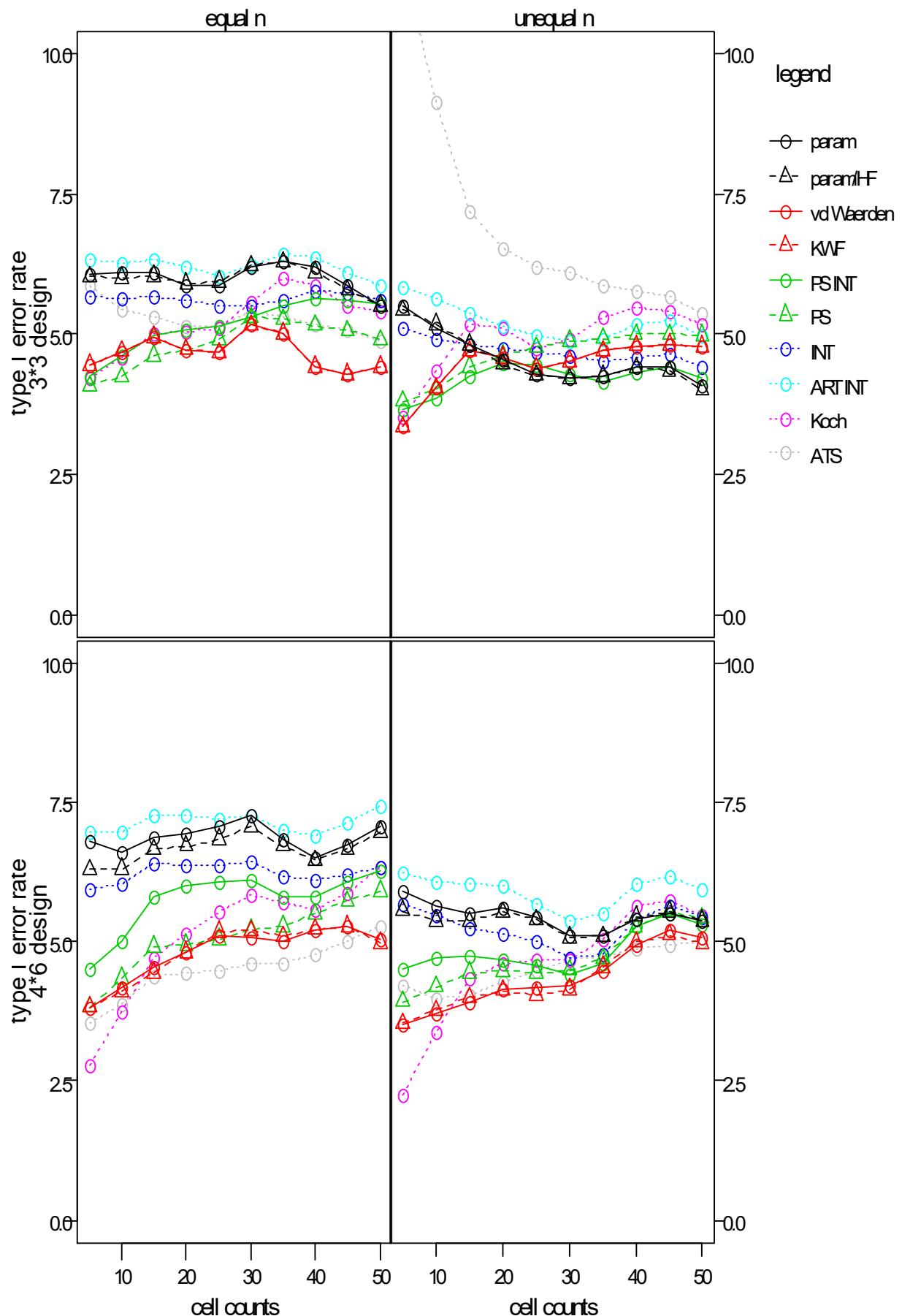
1. 7. 1. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.00	4.88	4.85	5.01	5.51	5.56	5.02	5.47	5.22	5.10	4.91	4.79	4.79	5.45
parametric HF-adj	5.13	5.08	5.14	5.29	5.57	5.51	5.02	5.42	5.20	5.06	4.92	4.80	4.74	5.49
van der Waerden	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.35	4.04	4.70	4.58	4.51	4.79	4.78
KWF	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.35	4.04	4.70	4.58	4.51	4.79	4.78
Puri & Sen INT	3.95	4.40	4.79	4.96	5.45	5.42	4.87	4.22	4.20	4.36	4.48	4.69	4.60	5.24
Puri & Sen	4.15	4.14	4.36	4.67	5.09	4.72	4.72	3.92	4.10	4.50	4.70	4.67	4.80	5.17
INT	5.18	5.15	5.18	5.30	5.78	5.56	5.27	5.66	5.09	4.78	4.75	4.81	4.67	5.39
ART INT	5.03	5.16	5.21	5.14	5.62	5.51	5.00	5.39	5.01	5.03	5.09	4.89	4.88	5.55
Koch	3.48	3.96	4.56	4.76	5.32	5.19	4.92	3.28	3.66	4.39	4.46	4.34	4.61	5.20
ATS	6.25	5.70	5.35	5.34	5.47	5.00	4.92	11.59	8.91	6.80	6.01	5.86	5.80	5.68
large design (4*6)														
parametric	5.02	4.88	4.81	4.91	5.58	5.31	5.67	5.10	4.94	4.76	4.65	5.00	5.45	5.75
parametric HF-adj	5.00	4.86	4.78	4.85	5.55	5.36	5.65	5.02	4.85	4.71	4.66	5.06	5.38	5.75
van der Waerden	3.81	4.19	4.53	4.81	5.07	5.21	5.05	3.50	3.71	3.92	4.14	4.21	4.94	5.08
KWF	3.82	4.10	4.45	4.81	5.20	5.22	4.98	3.53	3.76	4.00	4.12	4.14	4.99	4.98
Puri & Sen INT	3.87	4.09	4.15	4.26	5.24	4.96	5.47	3.87	4.00	4.07	4.17	4.69	5.16	5.48
Puri & Sen	3.87	4.14	4.50	4.69	5.11	5.15	5.32	3.96	4.24	4.41	4.38	4.54	5.34	5.37
INT	5.17	4.95	4.67	4.66	5.46	5.11	5.57	5.22	4.91	4.59	4.60	4.95	5.41	5.58
ART INT	5.13	4.96	4.74	4.78	5.49	5.31	5.70	5.00	4.96	4.90	4.78	5.03	5.56	5.73
Koch	2.46	3.17	3.81	4.06	4.97	5.05	5.35	2.29	3.23	3.84	4.03	4.45	5.33	5.38
ATS	3.53	3.81	4.20	4.42	5.00	5.07	5.17	5.59	4.88	4.53	4.50	4.94	5.19	5.49



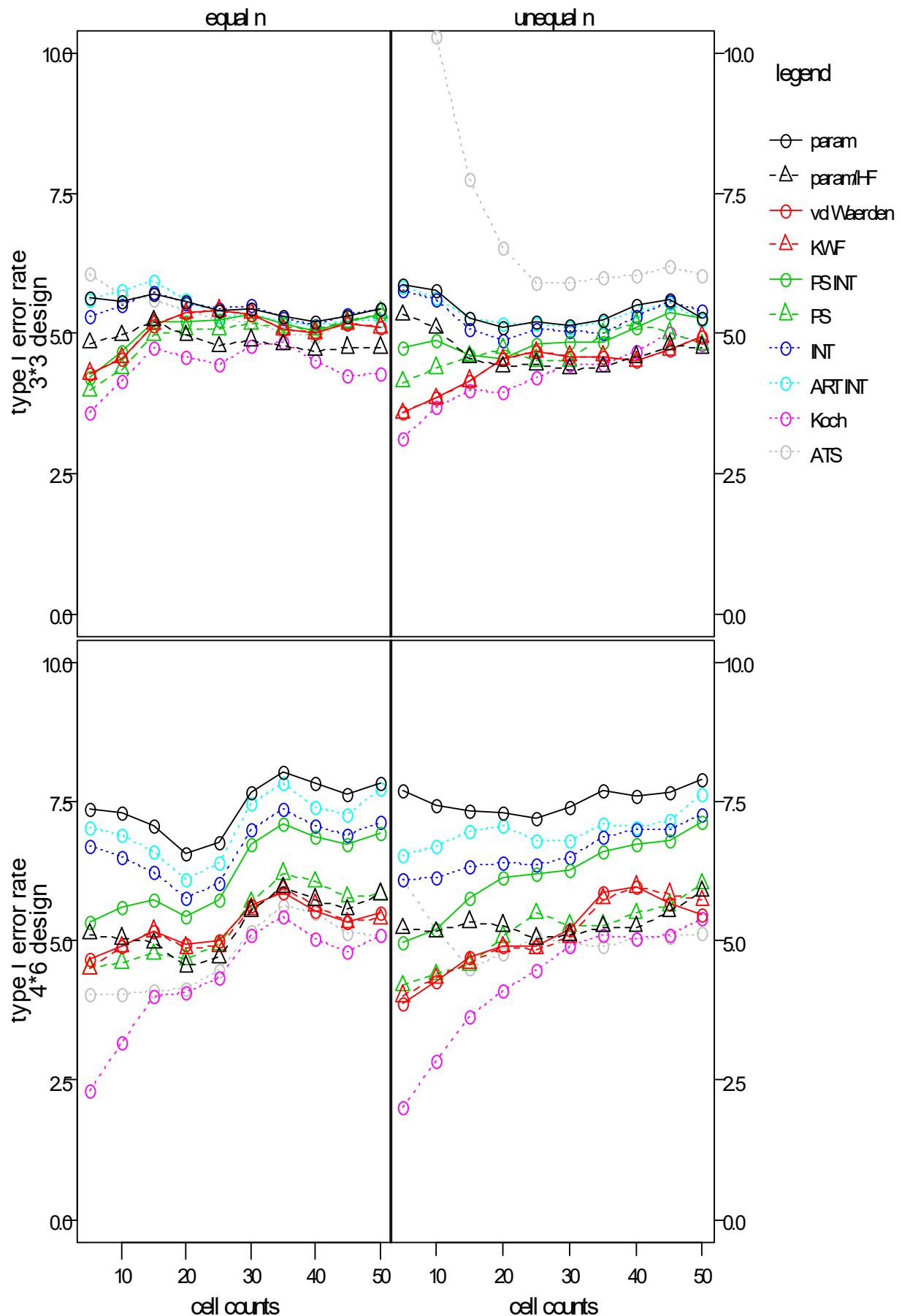
1. 7. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.07	6.10	6.10	5.86	6.19	6.19	5.50	5.50	5.12	4.80	4.53	4.22	4.41	4.08
parametric HF-adj	6.02	6.00	6.04	5.90	6.22	6.10	5.51	5.43	5.17	4.81	4.46	4.21	4.40	4.00
van der Waerden	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.35	4.04	4.70	4.58	4.51	4.79	4.78
KWF	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.35	4.04	4.70	4.58	4.51	4.79	4.78
Puri & Sen INT	4.26	4.62	4.99	5.06	5.30	5.65	5.52	3.65	3.86	4.24	4.47	4.29	4.30	4.23
Puri & Sen	4.07	4.24	4.61	4.72	5.29	5.15	4.90	3.80	4.00	4.41	4.62	4.88	5.00	4.98
INT	5.68	5.64	5.66	5.60	5.49	5.77	5.60	5.10	4.91	4.81	4.75	4.60	4.58	4.41
ART INT	6.32	6.26	6.34	6.18	6.24	6.36	5.88	5.82	5.65	5.38	5.14	4.88	5.16	4.96
Koch	4.21	4.59	5.00	5.04	5.57	5.86	5.40	3.53	4.34	5.17	5.10	4.92	5.47	5.17
ATS	5.85	5.45	5.31	5.15	5.40	5.16	4.88	11.67	9.14	7.17	6.51	6.09	5.75	5.36
large design (4*6)														
parametric	6.79	6.61	6.86	6.94	7.25	6.51	7.07	5.90	5.62	5.51	5.61	5.12	5.42	5.37
parametric HF-adj	6.29	6.31	6.66	6.71	7.06	6.46	6.97	5.55	5.38	5.36	5.53	5.07	5.45	5.38
van der Waerden	3.81	4.19	4.53	4.81	5.07	5.21	5.05	3.50	3.71	3.92	4.14	4.21	4.94	5.08
KWF	3.82	4.10	4.45	4.81	5.20	5.22	4.98	3.53	3.76	4.00	4.12	4.14	4.99	4.98
Puri & Sen INT	4.52	5.01	5.79	5.99	6.10	5.79	6.27	4.50	4.69	4.74	4.66	4.41	5.26	5.30
Puri & Sen	3.82	4.35	4.91	4.94	5.21	5.49	5.90	3.92	4.19	4.45	4.46	4.49	5.26	5.42
INT	5.95	6.03	6.40	6.38	6.44	6.09	6.34	5.67	5.46	5.24	5.14	4.69	5.40	5.43
ART INT	6.97	6.95	7.27	7.26	7.26	6.90	7.42	6.23	6.08	6.04	5.99	5.38	6.04	5.95
Koch	2.78	3.74	4.72	5.14	5.84	5.56	6.35	2.24	3.38	4.34	4.61	4.67	5.64	5.46
ATS	3.55	3.86	4.36	4.45	4.60	4.77	5.27	4.20	3.98	4.04	4.26	4.68	4.86	5.02



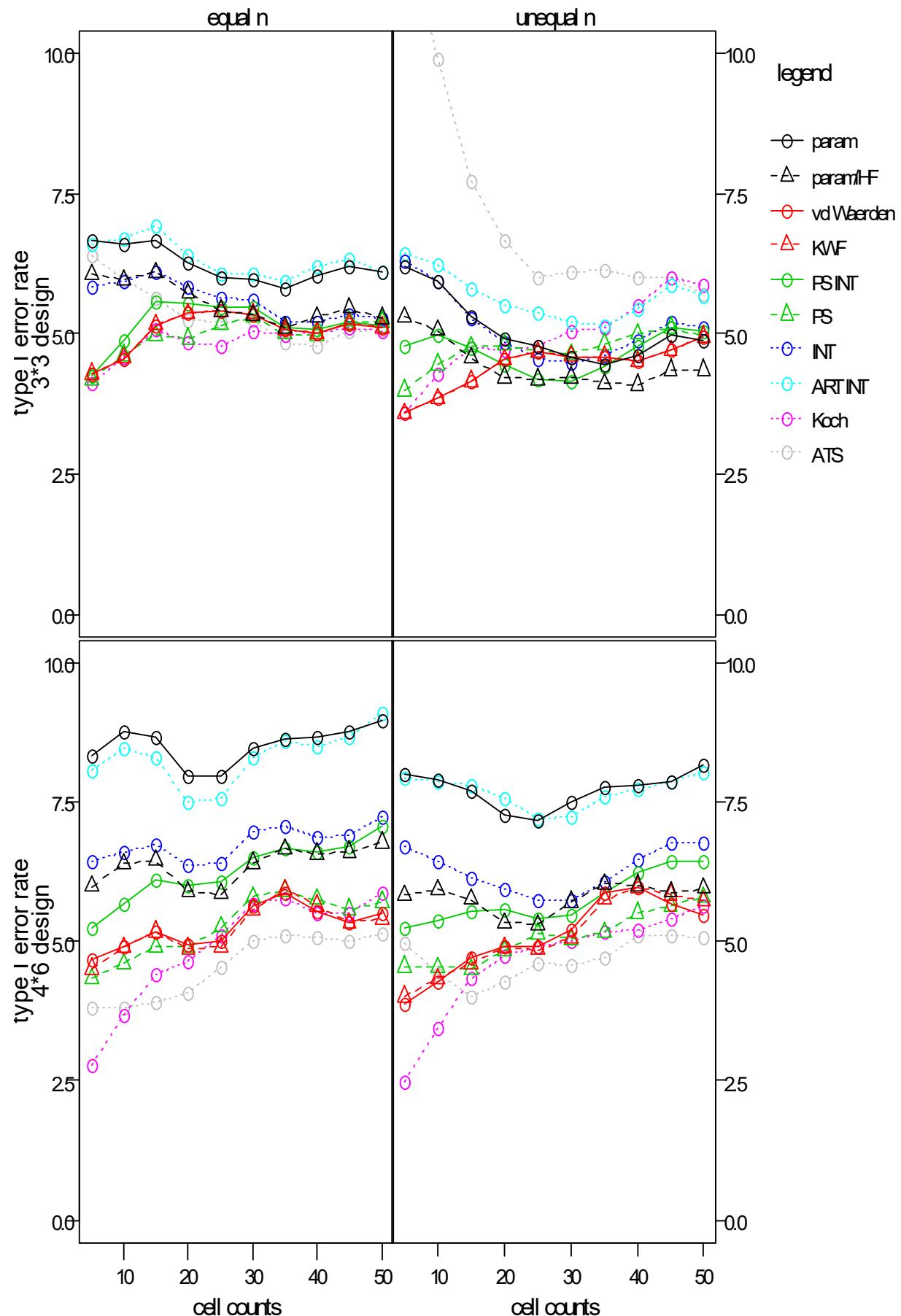
1. 7. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.62	5.57	5.71	5.58	5.44	5.19	5.42	5.85	5.75	5.27	5.11	5.14	5.49	5.28
parametric HF-adj	4.82	4.97	5.22	4.96	4.88	4.69	4.75	5.33	5.10	4.56	4.40	4.36	4.58	4.75
van der Waerden	4.28	4.56	5.15	5.36	5.35	5.01	5.11	3.58	3.84	4.15	4.54	4.59	4.50	4.95
KWF	4.28	4.56	5.15	5.36	5.35	5.01	5.11	3.58	3.84	4.15	4.54	4.59	4.50	4.95
Puri & Sen INT	4.20	4.69	5.21	5.21	5.35	5.04	5.33	4.73	4.86	4.62	4.56	4.84	5.10	5.26
Puri & Sen	3.97	4.36	4.96	5.07	5.16	5.06	5.37	4.13	4.38	4.59	4.72	4.50	5.17	4.80
INT	5.30	5.49	5.74	5.54	5.51	5.15	5.45	5.75	5.60	5.07	4.89	5.05	5.31	5.41
ART INT	5.60	5.75	5.92	5.59	5.34	5.15	5.23	5.83	5.64	5.26	5.16	5.11	5.41	5.25
Koch	3.60	4.14	4.75	4.59	4.76	4.52	4.29	3.13	3.69	3.97	3.96	4.46	4.68	4.81
ATS	6.07	5.68	5.59	5.40	5.22	4.95	5.33	12.83	10.30	7.76	6.54	5.91	6.04	6.03
large design (4*6)														
parametric	7.37	7.30	7.08	6.56	7.66	7.83	7.84	7.69	7.44	7.32	7.30	7.40	7.60	7.88
parametric HF-adj	5.12	5.04	4.96	4.55	5.54	5.74	5.84	5.22	5.16	5.34	5.28	5.11	5.25	5.88
van der Waerden	4.68	4.92	5.16	4.94	5.65	5.54	5.52	3.88	4.29	4.70	4.92	5.21	5.96	5.47
KWF	4.51	4.90	5.17	4.88	5.58	5.64	5.40	4.01	4.33	4.61	4.90	5.06	5.97	5.73
Puri & Sen INT	5.33	5.59	5.75	5.44	6.74	6.86	6.92	4.98	5.22	5.76	6.14	6.26	6.74	7.12
Puri & Sen	4.50	4.61	4.76	4.67	5.69	6.06	5.84	4.20	4.40	4.56	5.08	5.28	5.50	6.02
INT	6.70	6.50	6.22	5.78	7.01	7.08	7.12	6.10	6.14	6.33	6.40	6.50	6.99	7.27
ART INT	7.02	6.91	6.60	6.09	7.45	7.41	7.72	6.53	6.69	6.97	7.06	6.81	7.02	7.62
Koch	2.33	3.19	4.01	4.08	5.09	5.05	5.09	2.03	2.85	3.65	4.11	4.90	5.03	5.40
ATS	4.03	4.05	4.12	4.15	5.17	5.49	5.12	6.11	5.19	4.51	4.76	4.95	5.04	5.13



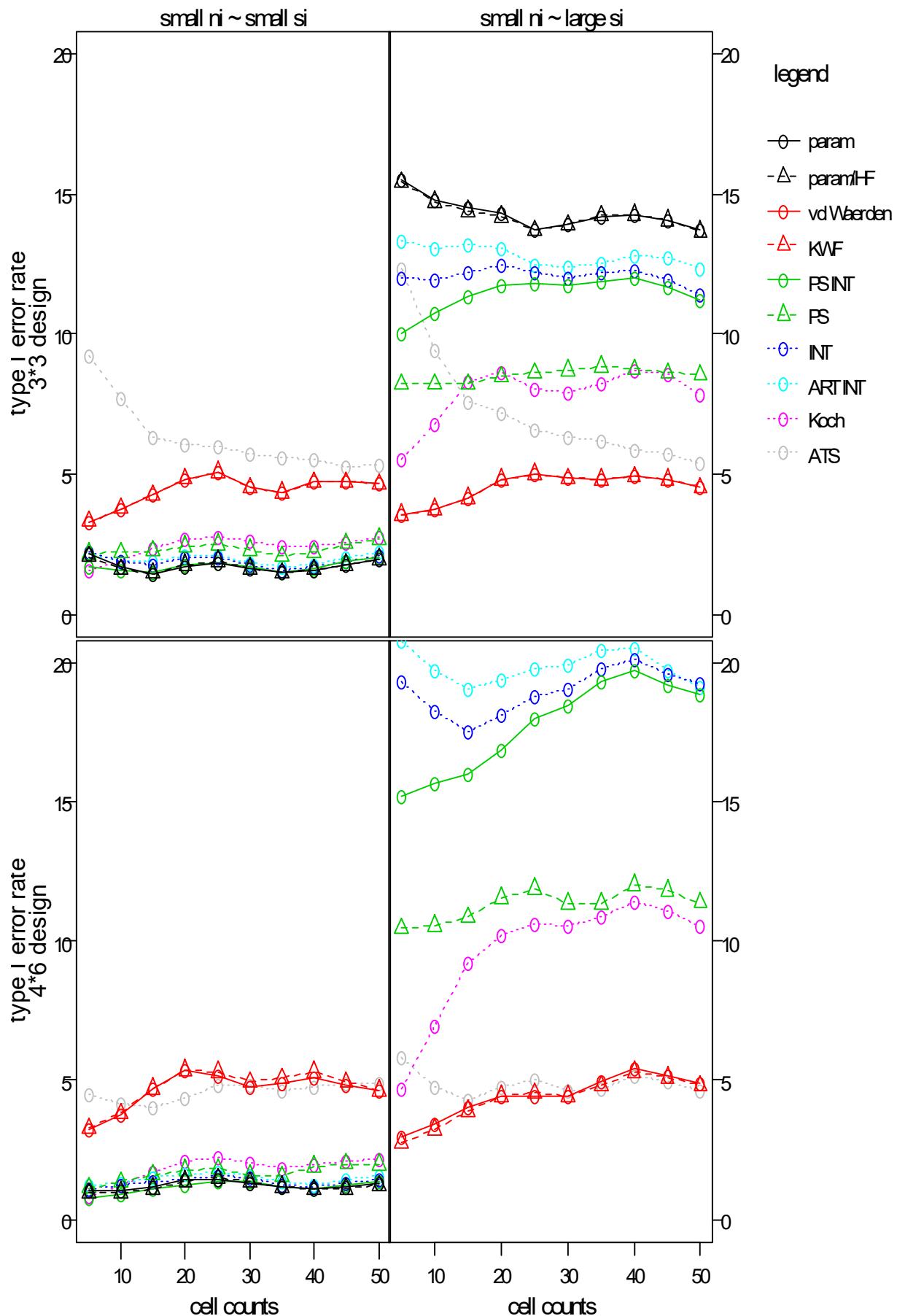
1. 7. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.65	6.59	6.65	6.25	5.97	6.03	6.10	6.20	5.92	5.31	4.90	4.59	4.62	4.86
parametric HF-adj	6.05	5.96	6.09	5.72	5.33	5.30	5.28	5.30	5.05	4.56	4.22	4.22	4.09	4.35
van der Waerden	4.28	4.56	5.15	5.36	5.35	5.01	5.11	3.58	3.84	4.15	4.54	4.59	4.50	4.95
KWF	4.28	4.56	5.15	5.36	5.35	5.01	5.11	3.58	3.84	4.15	4.54	4.59	4.50	4.95
Puri & Sen INT	4.26	4.88	5.58	5.53	5.46	5.06	5.13	4.78	4.96	4.74	4.45	4.14	4.76	5.03
Puri & Sen	4.18	4.62	4.96	4.91	5.31	4.96	5.21	3.98	4.45	4.76	4.79	4.64	5.00	4.95
INT	5.83	5.92	6.09	5.83	5.59	5.20	5.27	6.28	5.94	5.28	4.83	4.47	4.88	5.09
ART INT	6.60	6.69	6.91	6.41	6.07	6.20	6.10	6.43	6.24	5.81	5.51	5.20	5.44	5.68
Koch	4.10	4.58	5.06	4.84	5.03	5.00	5.05	3.60	4.28	4.75	4.71	5.04	5.51	5.86
ATS	6.39	5.97	5.62	5.24	5.25	4.76	5.08	12.43	9.89	7.70	6.67	6.08	5.99	5.71
large design (4*6)														
parametric	8.33	8.77	8.65	7.96	8.46	8.65	8.95	8.00	7.90	7.68	7.25	7.50	7.78	8.17
parametric HF-adj	5.98	6.39	6.45	5.89	6.41	6.57	6.77	5.82	5.93	5.75	5.33	5.70	6.01	5.95
van der Waerden	4.68	4.92	5.16	4.94	5.65	5.54	5.52	3.88	4.29	4.70	4.92	5.21	5.96	5.47
KWF	4.51	4.90	5.17	4.88	5.58	5.64	5.40	4.01	4.33	4.61	4.90	5.06	5.97	5.73
Puri & Sen INT	5.23	5.66	6.11	5.99	6.51	6.60	7.05	5.23	5.36	5.54	5.56	5.46	6.24	6.45
Puri & Sen	4.33	4.60	4.89	4.89	5.79	5.75	5.70	4.55	4.53	4.50	4.83	5.03	5.51	5.79
INT	6.43	6.60	6.73	6.36	6.95	6.85	7.24	6.70	6.45	6.15	5.95	5.74	6.48	6.78
ART INT	8.05	8.45	8.28	7.50	8.31	8.48	9.10	7.93	7.86	7.78	7.56	7.24	7.74	8.02
Koch	2.78	3.66	4.42	4.65	5.66	5.51	5.87	2.48	3.46	4.34	4.74	5.00	5.21	5.65
ATS	3.82	3.81	3.90	4.08	5.00	5.06	5.14	4.97	4.40	4.01	4.28	4.58	5.09	5.07



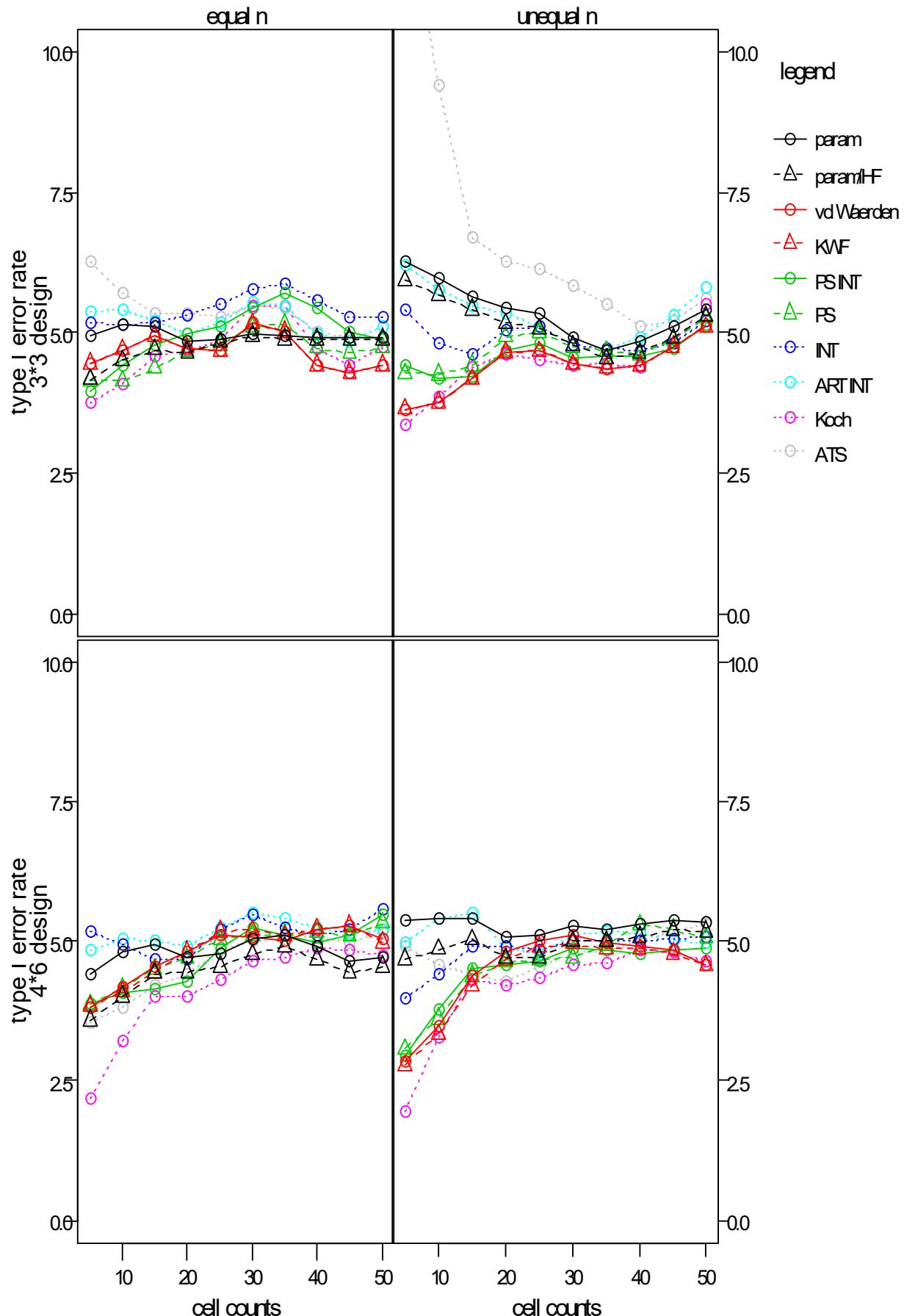
1. 7. 1. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.15	1.68	1.45	1.70	1.62	1.56	1.95	15.49	14.75	14.52	14.29	13.93	14.25	13.68
parametric HF-adj	2.05	1.60	1.45	1.76	1.64	1.59	1.95	15.40	14.71	14.39	14.18	13.89	14.25	13.65
van der Waerden	3.30	3.76	4.25	4.82	4.50	4.70	4.65	3.55	3.75	4.15	4.79	4.83	4.91	4.51
KWF	3.30	3.76	4.25	4.82	4.50	4.70	4.65	3.55	3.75	4.15	4.79	4.83	4.91	4.51
Puri & Sen INT	1.70	1.53	1.52	1.75	1.66	1.65	2.00	9.99	10.71	11.34	11.76	11.71	12.00	11.23
Puri & Sen	2.15	2.19	2.25	2.42	2.29	2.19	2.70	8.21	8.22	8.20	8.47	8.69	8.75	8.55
INT	2.25	1.86	1.75	1.99	1.76	1.69	2.08	11.98	11.96	12.21	12.46	11.99	12.26	11.43
ART INT	2.15	1.88	1.89	2.09	1.85	1.76	2.22	13.34	13.05	13.16	13.08	12.38	12.76	12.31
Koch	1.55	1.91	2.38	2.65	2.59	2.39	2.77	5.51	6.79	8.32	8.64	7.90	8.70	7.81
ATS	9.19	7.71	6.33	6.03	5.70	5.49	5.32	12.34	9.42	7.54	7.19	6.30	5.88	5.41
large design (4*6)														
parametric	1.03	1.04	1.19	1.43	1.32	1.09	1.28	24.95	23.33	22.24	22.61	23.15	24.29	22.72
parametric HF-adj	0.95	0.97	1.12	1.39	1.35	1.08	1.23	24.50	22.91	21.86	22.36	22.84	24.10	22.63
van der Waerden	3.21	3.74	4.70	5.35	4.78	5.10	4.65	2.95	3.42	4.04	4.44	4.41	5.40	4.88
KWF	3.28	3.80	4.69	5.36	4.93	5.30	4.63	2.75	3.23	3.91	4.44	4.44	5.31	4.82
Puri & Sen INT	0.77	0.94	1.09	1.23	1.36	1.11	1.40	15.19	15.69	15.96	16.85	18.44	19.74	18.83
Puri & Sen	1.13	1.36	1.60	1.79	1.59	1.90	1.97	10.45	10.56	10.86	11.54	11.35	12.01	11.37
INT	1.13	1.21	1.35	1.47	1.51	1.15	1.47	19.31	18.23	17.54	18.09	19.07	20.14	19.25
ART INT	1.25	1.30	1.48	1.65	1.57	1.26	1.60	20.78	19.68	19.05	19.38	19.93	20.54	19.12
Koch	0.86	1.27	1.72	2.09	2.01	1.95	2.15	4.69	6.94	9.20	10.20	10.53	11.41	10.57
ATS	4.49	4.19	4.04	4.34	4.82	4.79	4.87	5.83	4.78	4.30	4.75	4.66	5.16	4.63



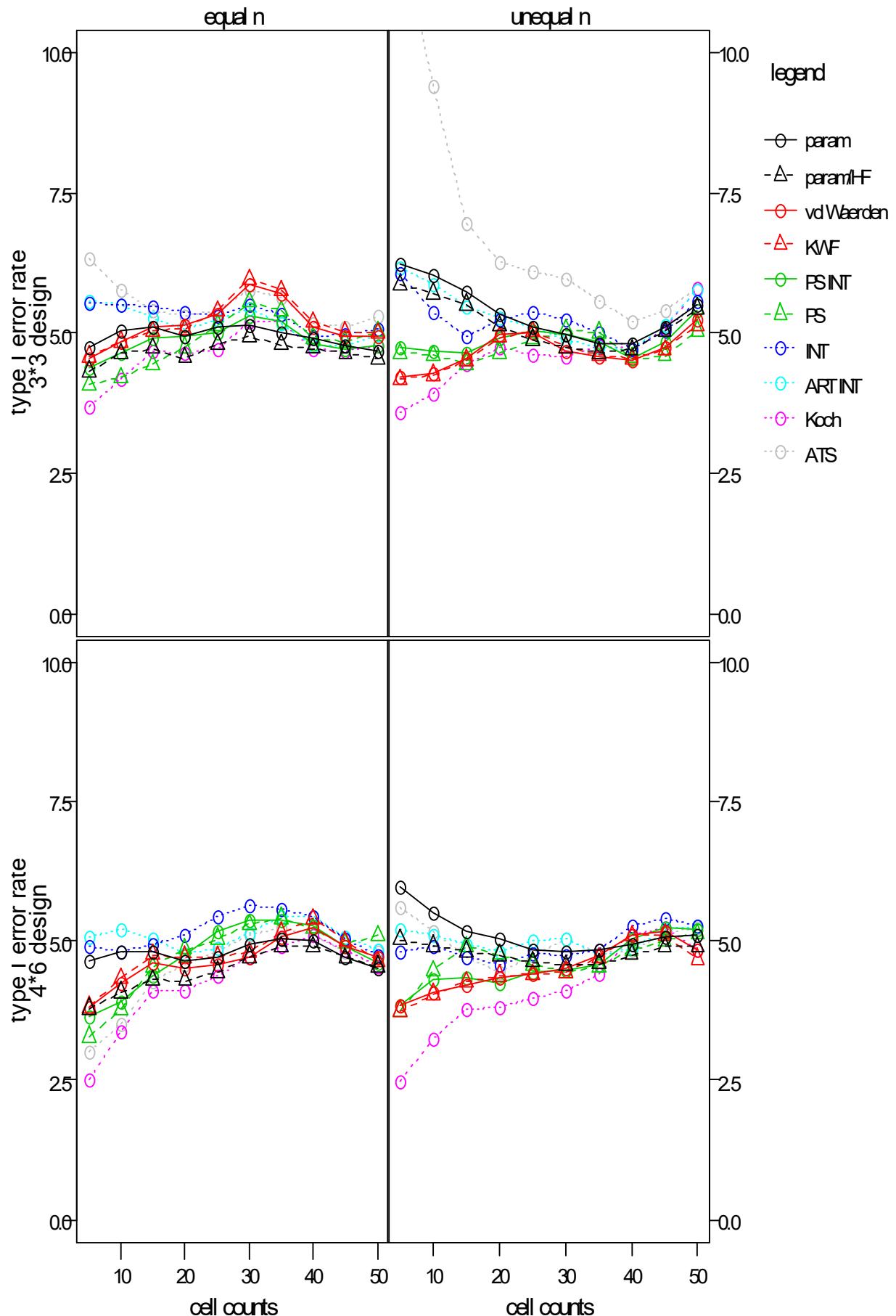
1. 7. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.93	5.14	5.12	4.85	4.99	4.92	4.90	6.27	5.97	5.65	5.44	4.92	4.84	5.39
parametric HF-adj	4.16	4.50	4.69	4.65	4.95	4.88	4.88	5.92	5.67	5.41	5.16	4.76	4.64	5.29
van der Waerden	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.63	3.75	4.17	4.65	4.44	4.42	5.10
KWF	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.63	3.75	4.17	4.65	4.44	4.42	5.10
Puri & Sen INT	3.95	4.40	4.79	4.96	5.45	5.42	4.87	4.42	4.18	4.20	4.69	4.55	4.58	5.14
Puri & Sen	4.15	4.14	4.36	4.67	5.09	4.72	4.72	4.27	4.25	4.42	4.92	4.75	4.61	5.25
INT	5.18	5.15	5.18	5.30	5.78	5.56	5.27	5.40	4.80	4.61	5.04	4.76	4.69	5.20
ART INT	5.38	5.40	5.22	4.99	5.55	4.99	5.12	6.20	5.76	5.48	5.35	4.76	4.90	5.80
Koch	3.75	4.09	4.58	4.66	5.48	4.70	4.74	3.35	3.85	4.38	4.60	4.41	4.39	5.49
ATS	6.25	5.70	5.35	5.34	5.47	5.00	4.92	12.81	9.41	6.70	6.26	5.84	5.11	5.59
large design (4*6)														
parametric	4.42	4.79	4.94	4.69	5.04	4.89	4.72	5.37	5.40	5.41	5.07	5.27	5.29	5.33
parametric HF-adj	3.58	4.01	4.42	4.45	4.76	4.68	4.55	4.68	4.85	5.03	4.70	4.99	5.08	5.18
van der Waerden	3.81	4.19	4.53	4.81	5.07	5.21	5.05	2.83	3.47	4.38	4.81	5.09	4.91	4.58
KWF	3.82	4.10	4.45	4.81	5.20	5.22	4.98	2.77	3.34	4.20	4.67	4.95	4.86	4.57
Puri & Sen INT	3.87	4.09	4.15	4.26	5.24	4.96	5.47	2.96	3.78	4.51	4.57	4.88	4.76	4.88
Puri & Sen	3.87	4.14	4.50	4.69	5.11	5.15	5.32	3.07	3.61	4.38	4.62	4.70	5.29	5.05
INT	5.17	4.95	4.67	4.66	5.46	5.11	5.57	3.96	4.41	4.90	4.90	4.99	4.99	5.07
ART INT	4.83	5.03	5.00	4.90	5.50	5.23	5.22	4.97	5.39	5.50	4.88	5.10	5.14	4.98
Koch	2.19	3.21	4.00	4.01	4.64	4.88	4.75	1.94	3.29	4.31	4.21	4.56	4.83	4.65
ATS	3.53	3.81	4.20	4.42	5.00	5.07	5.17	4.90	4.59	4.41	4.29	4.78	5.01	5.30



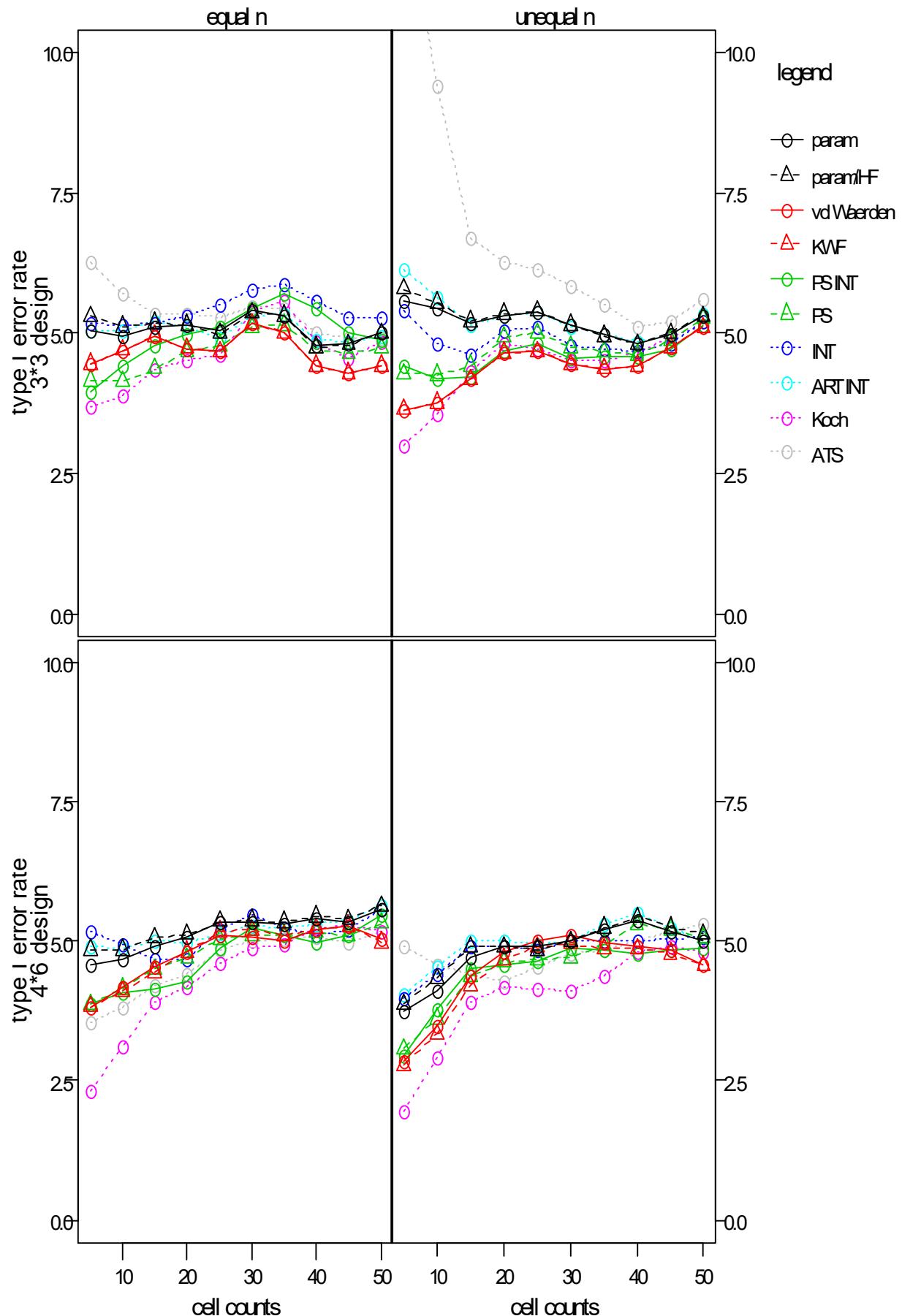
1. 7. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.73	5.05	5.09	4.95	5.15	4.92	4.67	6.24	6.04	5.74	5.34	4.96	4.81	5.49
parametric HF-adj	4.32	4.64	4.72	4.56	4.95	4.72	4.55	5.85	5.70	5.51	5.12	4.75	4.70	5.44
van der Waerden	4.53	4.84	5.11	5.14	5.86	5.12	4.95	4.23	4.28	4.56	4.97	4.69	4.51	5.24
KWF	4.58	4.84	5.03	5.06	5.95	5.19	5.00	4.17	4.25	4.52	4.92	4.75	4.53	5.14
Puri & Sen INT	4.38	4.64	4.90	4.94	5.31	4.81	4.78	4.75	4.66	4.64	4.92	4.97	4.55	5.39
Puri & Sen	4.07	4.20	4.44	4.74	5.55	4.91	5.02	4.63	4.60	4.45	4.65	5.05	4.56	5.04
INT	5.55	5.49	5.48	5.38	5.49	4.94	5.08	6.05	5.36	4.94	5.24	5.24	4.70	5.57
ART INT	5.58	5.50	5.28	5.06	5.45	4.77	4.97	6.15	5.85	5.47	5.28	4.89	4.72	5.75
Koch	3.68	4.17	4.66	4.65	5.20	4.71	4.78	3.60	3.91	4.44	4.74	4.59	4.71	5.80
ATS	6.32	5.75	5.40	5.31	5.76	5.17	5.32	12.17	9.41	6.97	6.26	5.96	5.19	5.79
large design (4*6)														
parametric	4.65	4.79	4.81	4.65	4.94	4.99	4.52	5.97	5.49	5.16	5.03	4.81	4.95	5.10
parametric HF-adj	3.78	4.08	4.30	4.29	4.71	4.90	4.55	5.02	4.91	4.81	4.74	4.56	4.75	4.90
van der Waerden	3.80	4.25	4.60	4.51	4.72	5.25	4.70	3.83	4.08	4.21	4.33	4.50	5.10	4.85
KWF	3.81	4.33	4.75	4.71	4.80	5.39	4.63	3.75	4.04	4.26	4.38	4.45	5.10	4.68
Puri & Sen INT	3.65	3.92	4.39	4.75	5.38	5.26	4.60	3.84	4.31	4.35	4.25	4.47	5.04	5.22
Puri & Sen	3.28	3.76	4.53	4.85	5.30	5.22	5.09	3.75	4.46	4.90	4.75	4.45	4.83	5.13
INT	4.89	4.81	4.94	5.09	5.62	5.44	4.73	4.80	4.90	4.71	4.59	4.75	5.26	5.27
ART INT	5.07	5.20	5.05	4.76	5.15	5.45	4.83	5.20	5.10	4.94	4.82	5.03	4.88	5.28
Koch	2.51	3.39	4.11	4.11	4.70	5.09	4.53	2.48	3.25	3.77	3.80	4.12	5.09	4.83
ATS	3.00	3.50	4.27	4.57	5.09	5.11	4.82	5.60	5.17	4.71	4.44	5.03	4.84	5.25



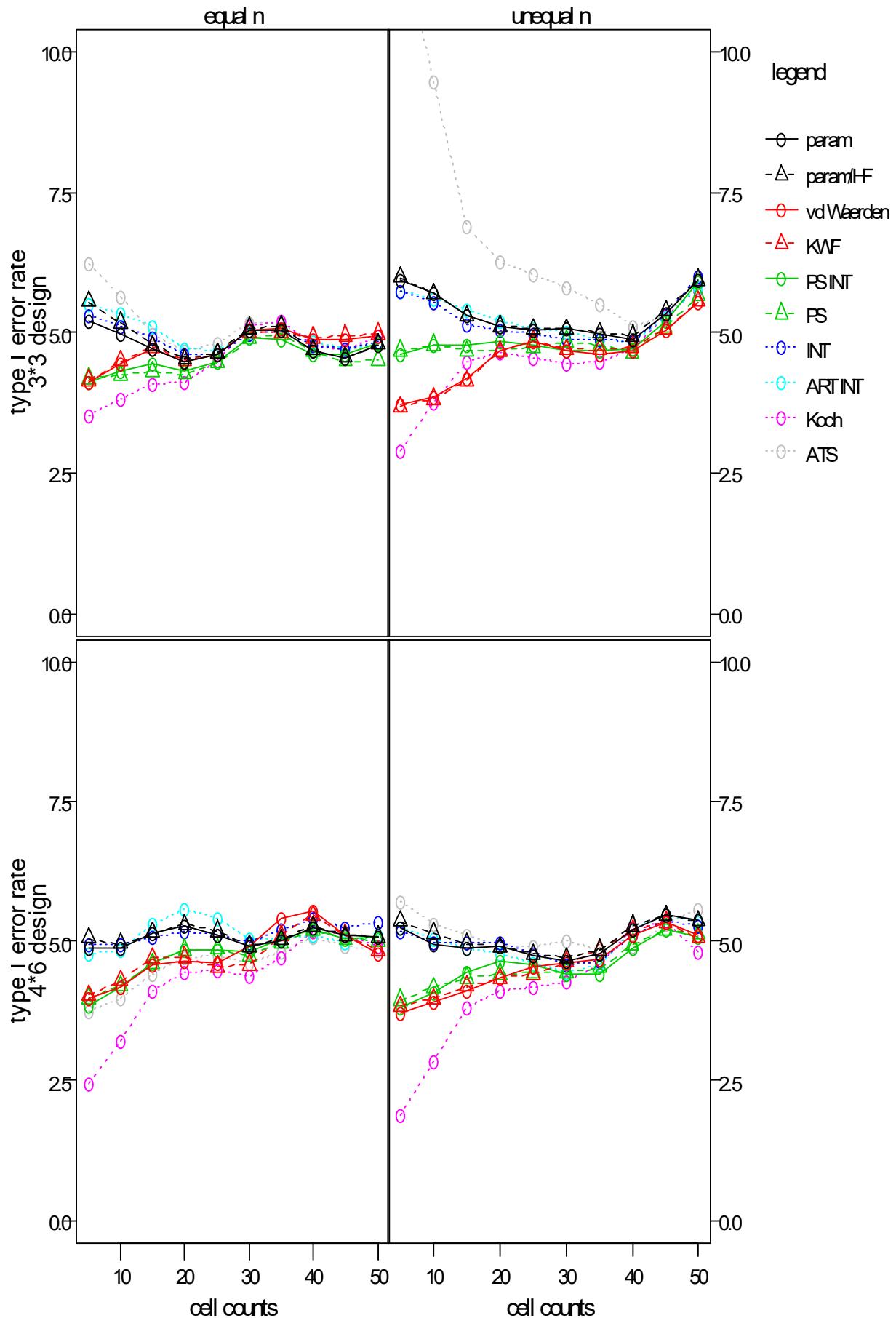
1. 7. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.03	4.94	5.09	5.14	5.40	4.76	5.00	5.58	5.42	5.17	5.31	5.15	4.80	5.29
parametric HF-adj	5.29	5.11	5.17	5.14	5.36	4.75	5.00	5.78	5.54	5.21	5.34	5.14	4.80	5.30
van der Waerden	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.63	3.75	4.17	4.65	4.44	4.42	5.10
KWF	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.63	3.75	4.17	4.65	4.44	4.42	5.10
Puri & Sen INT	3.95	4.40	4.79	4.96	5.45	5.42	4.87	4.42	4.18	4.20	4.69	4.55	4.58	5.14
Puri & Sen	4.15	4.14	4.36	4.67	5.09	4.72	4.72	4.27	4.25	4.42	4.92	4.75	4.61	5.25
INT	5.18	5.15	5.18	5.30	5.78	5.56	5.27	5.40	4.80	4.61	5.04	4.76	4.69	5.20
ART INT	5.05	5.05	5.21	5.11	5.31	4.86	4.95	6.12	5.62	5.14	5.31	5.12	4.83	5.34
Koch	3.68	3.89	4.34	4.50	5.36	4.84	4.84	3.00	3.54	4.30	4.80	4.50	4.64	5.13
ATS	6.25	5.70	5.35	5.34	5.47	5.00	4.92	12.81	9.41	6.70	6.26	5.84	5.11	5.59
large design (4*6)														
parametric	4.59	4.66	4.92	5.07	5.34	5.42	5.57	3.73	4.12	4.72	4.89	4.99	5.38	5.00
parametric HF-adj	4.84	4.84	5.06	5.12	5.38	5.44	5.62	3.87	4.33	4.90	4.89	4.99	5.43	5.13
van der Waerden	3.81	4.19	4.53	4.81	5.07	5.21	5.05	2.83	3.47	4.38	4.81	5.09	4.91	4.58
KWF	3.82	4.10	4.45	4.81	5.20	5.22	4.98	2.77	3.34	4.20	4.67	4.95	4.86	4.57
Puri & Sen INT	3.87	4.09	4.15	4.26	5.24	4.96	5.47	2.96	3.78	4.51	4.57	4.88	4.76	4.88
Puri & Sen	3.87	4.14	4.50	4.69	5.11	5.15	5.32	3.07	3.61	4.38	4.62	4.70	5.29	5.05
INT	5.17	4.95	4.67	4.66	5.46	5.11	5.57	3.96	4.41	4.90	4.90	4.99	4.99	5.07
ART INT	4.89	4.88	5.01	4.98	5.26	5.31	5.65	4.03	4.53	5.00	5.01	4.99	5.49	5.02
Koch	2.30	3.11	3.92	4.19	4.86	5.25	5.17	1.96	2.92	3.91	4.18	4.11	4.79	4.80
ATS	3.53	3.81	4.20	4.42	5.00	5.07	5.17	4.90	4.59	4.41	4.29	4.78	5.01	5.30



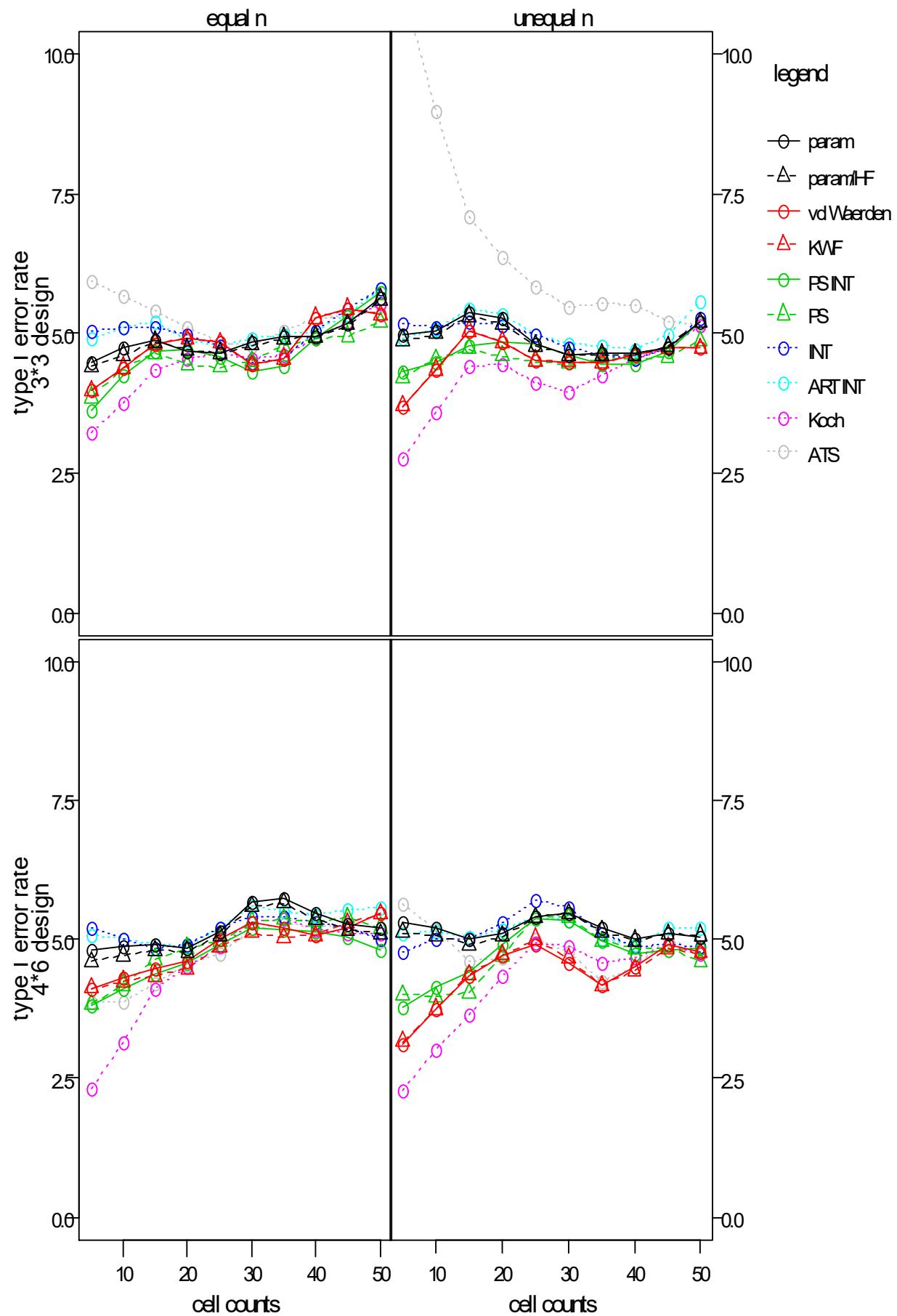
1. 7. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.22	4.99	4.71	4.47	5.03	4.69	4.77	5.93	5.70	5.31	5.09	5.07	4.88	5.92
parametric HF-adj	5.55	5.17	4.77	4.53	5.08	4.69	4.79	5.98	5.69	5.29	5.11	5.06	4.94	5.94
van der Waerden	4.12	4.46	4.71	4.49	5.05	4.88	4.95	3.72	3.86	4.18	4.66	4.69	4.67	5.52
KWF	4.15	4.49	4.74	4.51	5.00	4.91	4.98	3.68	3.82	4.14	4.66	4.70	4.74	5.55
Puri & Sen INT	4.12	4.31	4.45	4.31	4.90	4.61	4.80	4.60	4.78	4.78	4.83	4.68	4.70	5.90
Puri & Sen	4.18	4.24	4.30	4.26	4.89	4.68	4.52	4.68	4.78	4.67	4.67	4.84	4.64	5.65
INT	5.29	5.12	4.92	4.60	4.99	4.76	4.85	5.72	5.53	5.15	5.05	4.89	4.84	5.99
ART INT	5.50	5.35	5.09	4.71	5.00	4.84	4.82	5.73	5.60	5.40	5.21	5.00	4.83	5.79
Koch	3.52	3.83	4.09	4.12	5.11	4.79	4.95	2.89	3.76	4.47	4.64	4.45	4.71	5.77
ATS	6.24	5.63	4.99	4.66	5.17	4.84	4.78	12.20	9.45	6.89	6.25	5.79	5.09	5.92
large design (4*6)														
parametric	4.87	4.86	5.15	5.28	4.90	5.25	5.08	5.24	4.95	4.86	4.90	4.65	5.21	5.38
parametric HF-adj	5.05	4.95	5.15	5.29	4.91	5.26	5.07	5.35	5.14	4.95	4.89	4.69	5.28	5.35
van der Waerden	3.97	4.19	4.59	4.65	4.90	5.55	4.78	3.71	3.91	4.12	4.33	4.61	5.12	5.10
KWF	4.03	4.29	4.69	4.71	4.58	5.46	4.83	3.83	3.96	4.19	4.33	4.62	5.20	5.05
Puri & Sen INT	3.83	4.16	4.62	4.84	4.79	5.20	5.07	3.82	4.08	4.45	4.64	4.40	4.86	5.08
Puri & Sen	3.98	4.20	4.60	4.84	4.74	5.20	5.00	3.95	4.16	4.35	4.41	4.45	4.94	5.13
INT	4.95	4.94	5.08	5.17	4.96	5.40	5.34	5.17	4.98	4.96	4.97	4.59	5.10	5.28
ART INT	4.77	4.85	5.31	5.58	5.04	5.12	5.09	5.25	5.05	4.88	4.78	4.44	5.19	5.35
Koch	2.45	3.21	4.11	4.44	4.39	5.18	4.90	1.88	2.86	3.82	4.11	4.28	5.25	4.81
ATS	3.75	3.96	4.42	4.72	4.60	5.08	4.85	5.70	5.30	5.11	4.92	5.01	4.90	5.57



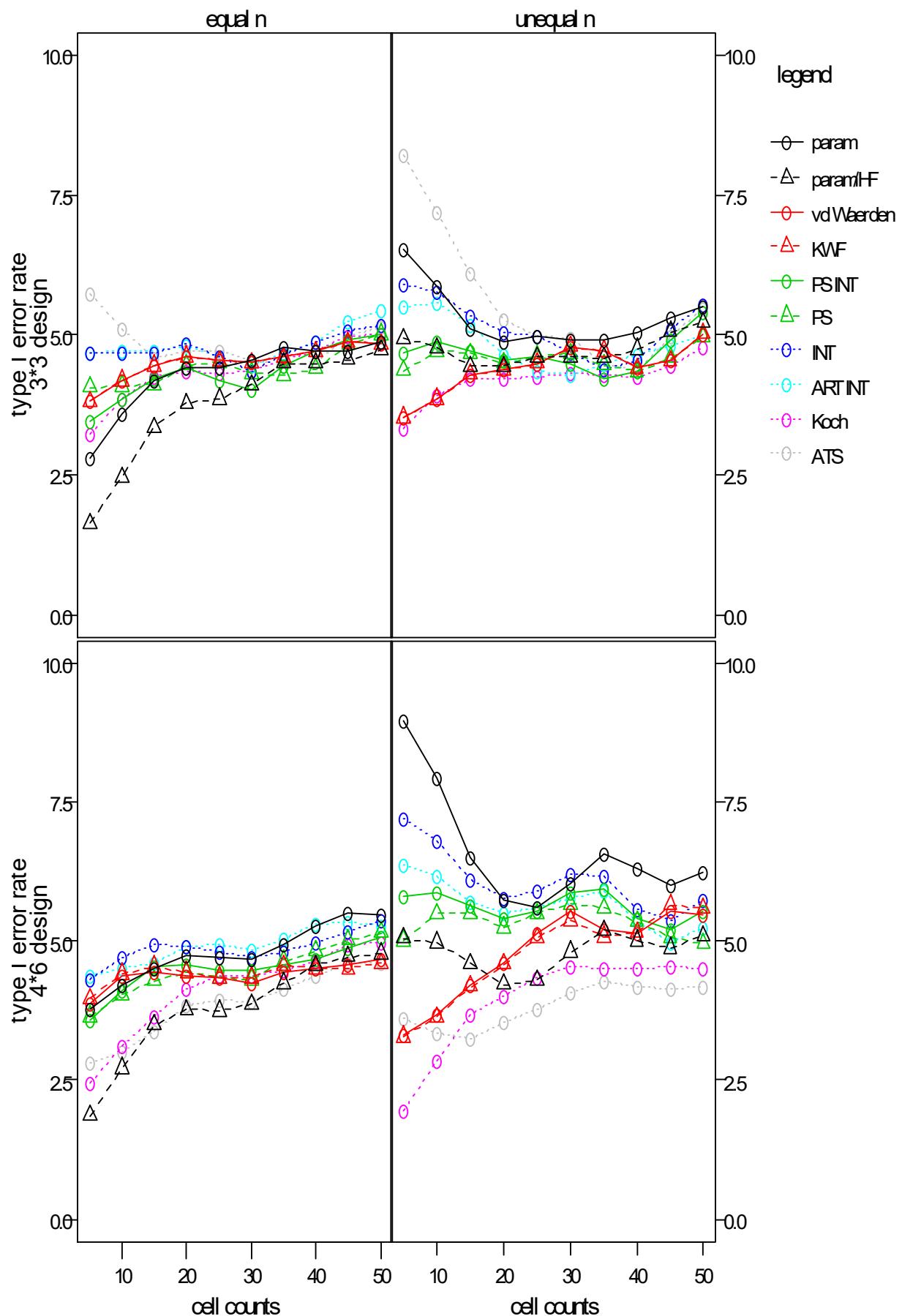
1. 7. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.47	4.75	4.89	4.66	4.84	4.95	5.62	4.97	5.03	5.38	5.26	4.61	4.64	5.19
parametric HF-adj	4.40	4.61	4.84	4.71	4.79	4.94	5.60	4.88	4.99	5.31	5.17	4.61	4.61	5.20
van der Waerden	3.97	4.38	4.81	4.90	4.44	5.28	5.33	3.70	4.35	5.04	4.84	4.49	4.62	4.73
KWF	3.97	4.38	4.81	4.90	4.44	5.28	5.33	3.70	4.35	5.04	4.84	4.49	4.62	4.73
Puri & Sen INT	3.61	4.24	4.69	4.71	4.30	4.91	5.72	4.30	4.47	4.78	4.85	4.62	4.44	5.21
Puri & Sen	3.86	4.38	4.64	4.44	4.50	4.92	5.20	4.20	4.53	4.72	4.59	4.46	4.56	4.87
INT	5.05	5.12	5.12	4.97	4.47	5.04	5.80	5.17	5.12	5.21	5.15	4.75	4.54	5.27
ART INT	4.92	5.12	5.21	4.89	4.91	5.03	5.80	4.92	5.06	5.43	5.34	4.82	4.71	5.57
Koch	3.21	3.76	4.34	4.54	4.56	4.92	5.54	2.75	3.59	4.41	4.44	3.96	4.53	5.14
ATS	5.94	5.67	5.39	5.09	4.79	5.26	5.50	11.23	8.98	7.08	6.36	5.46	5.50	5.17
large design (4*6)														
parametric	4.80	4.88	4.90	4.85	5.66	5.47	5.20	5.30	5.21	5.01	5.12	5.46	5.01	5.05
parametric HF-adj	4.60	4.71	4.80	4.78	5.59	5.36	5.10	5.12	5.06	4.90	5.05	5.46	4.97	5.07
van der Waerden	4.12	4.31	4.49	4.60	5.31	5.08	5.47	3.11	3.73	4.34	4.69	4.57	4.51	4.78
KWF	4.12	4.24	4.34	4.47	5.12	5.06	5.45	3.16	3.75	4.36	4.72	4.65	4.45	4.75
Puri & Sen INT	3.81	4.12	4.38	4.59	5.19	5.14	4.80	3.78	4.15	4.40	4.89	5.34	4.74	4.83
Puri & Sen	3.83	4.18	4.64	4.84	5.31	5.32	5.21	4.00	3.96	4.03	4.70	5.40	4.83	4.60
INT	5.22	5.01	4.84	4.92	5.41	5.31	5.01	4.78	5.00	5.01	5.30	5.56	4.88	4.87
ART INT	5.07	5.00	4.90	4.86	5.60	5.44	5.57	5.10	5.15	5.03	5.16	5.34	4.91	5.21
Koch	2.30	3.15	4.10	4.51	5.32	5.17	5.10	2.29	3.02	3.65	4.35	4.88	4.68	4.75
ATS	3.87	3.86	4.22	4.55	5.16	5.24	4.98	5.63	5.17	4.62	4.67	4.76	4.51	4.76



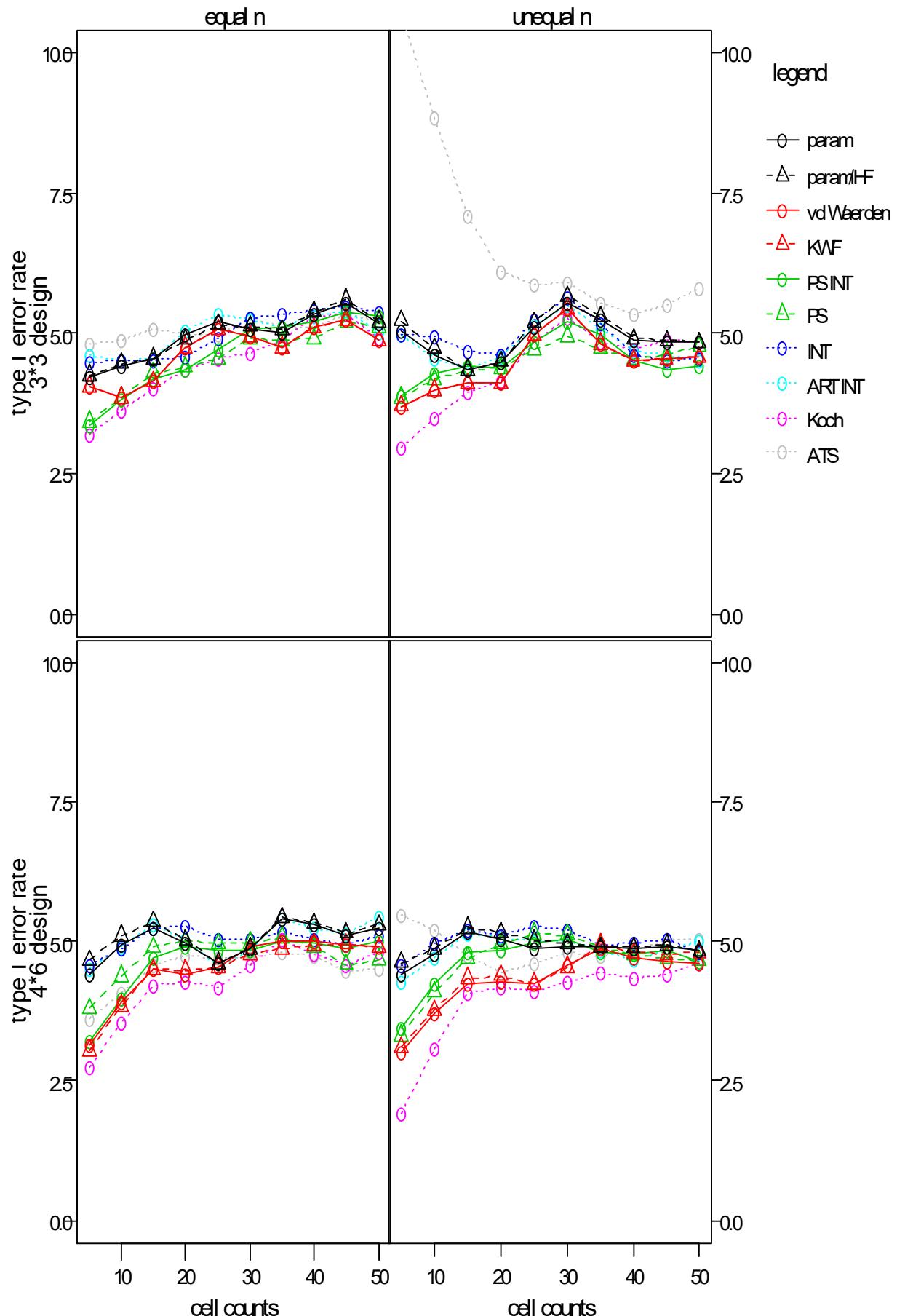
1. 7. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.79	3.59	4.17	4.41	4.53	4.70	4.88	6.54	5.88	5.09	4.89	4.92	5.05	5.50
parametric HF-adj	1.63	2.46	3.34	3.77	4.10	4.49	4.73	4.93	4.76	4.43	4.43	4.60	4.74	5.23
van der Waerden	3.81	4.18	4.45	4.61	4.50	4.70	4.83	3.52	3.85	4.29	4.38	4.79	4.40	5.02
KWF	3.81	4.18	4.45	4.61	4.50	4.70	4.83	3.52	3.85	4.29	4.38	4.79	4.40	5.02
Puri & Sen INT	3.46	3.85	4.20	4.42	4.03	4.71	5.02	4.68	4.88	4.71	4.53	4.47	4.33	5.39
Puri & Sen	4.06	4.08	4.10	4.46	4.31	4.39	5.01	4.36	4.70	4.67	4.49	4.67	4.33	4.97
INT	4.68	4.69	4.68	4.85	4.36	4.89	5.17	5.90	5.78	5.34	5.05	4.69	4.54	5.52
ART INT	4.68	4.72	4.70	4.81	4.46	4.86	5.45	5.51	5.57	5.17	4.64	4.29	4.64	5.02
Koch	3.23	3.84	4.26	4.36	4.35	4.70	5.01	3.33	3.93	4.22	4.20	4.32	4.24	4.79
ATS	5.74	5.12	4.59	4.71	4.54	4.51	5.15	8.22	7.20	6.09	5.27	4.94	4.35	5.47
large design (4*6)														
parametric	3.78	4.21	4.50	4.74	4.67	5.28	5.46	8.95	7.92	6.50	5.74	6.04	6.31	6.22
parametric HF-adj	1.86	2.71	3.49	3.77	3.86	4.56	4.77	5.05	4.97	4.60	4.22	4.81	5.01	5.10
van der Waerden	3.88	4.36	4.45	4.36	4.25	4.50	4.68	3.30	3.69	4.21	4.60	5.54	5.15	5.48
KWF	3.96	4.41	4.55	4.45	4.35	4.51	4.60	3.28	3.63	4.19	4.59	5.38	5.16	5.60
Puri & Sen INT	3.58	4.12	4.55	4.56	4.49	4.67	5.08	5.80	5.88	5.62	5.40	5.88	5.40	5.55
Puri & Sen	3.65	4.04	4.29	4.44	4.31	4.82	5.15	5.01	5.49	5.50	5.24	5.66	5.35	4.95
INT	4.30	4.72	4.95	4.91	4.71	4.96	5.37	7.20	6.81	6.11	5.78	6.19	5.56	5.72
ART INT	4.37	4.50	4.62	4.90	4.83	5.29	5.28	6.38	6.18	5.69	5.50	5.77	5.34	5.25
Koch	2.44	3.11	3.65	4.14	4.36	4.65	4.96	1.94	2.84	3.66	4.00	4.55	4.50	4.52
ATS	2.80	3.02	3.38	3.83	3.91	4.39	4.61	3.62	3.33	3.26	3.54	4.08	4.17	4.17



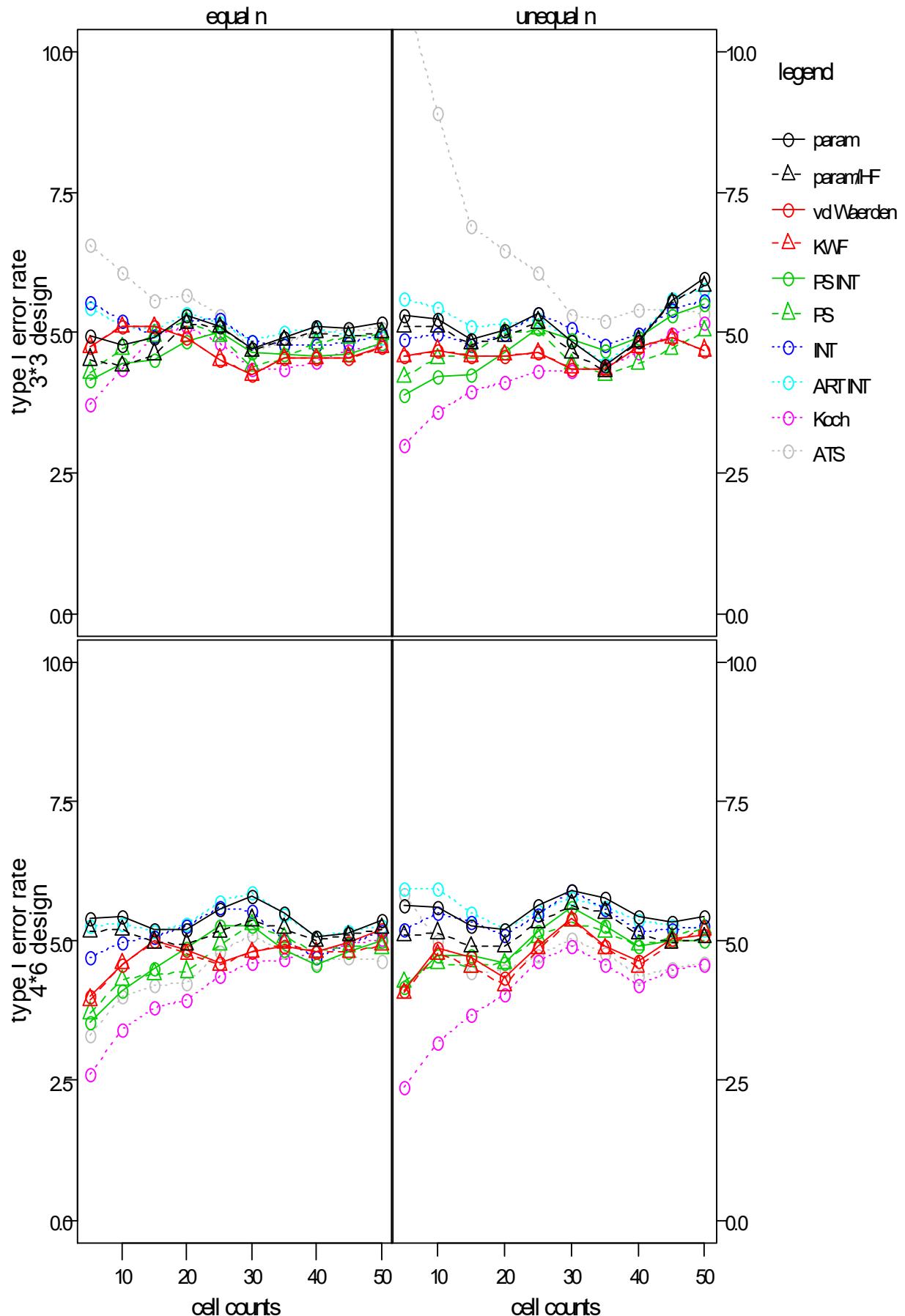
1. 7. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.20	4.40	4.56	4.98	5.07	5.35	5.18	5.04	4.61	4.34	4.47	5.55	4.86	4.83
parametric HF-adj	4.25	4.46	4.55	4.89	5.12	5.38	5.21	5.22	4.72	4.35	4.49	5.66	4.90	4.83
van der Waerden	4.05	3.85	4.14	4.74	4.94	5.10	4.86	3.70	3.99	4.10	4.11	5.44	4.51	4.57
KWF	4.05	3.85	4.14	4.74	4.94	5.10	4.86	3.70	3.99	4.10	4.11	5.44	4.51	4.57
Puri & Sen INT	3.35	3.83	4.17	4.35	5.08	5.19	5.30	3.90	4.29	4.41	4.39	5.22	4.50	4.40
Puri & Sen	3.43	3.85	4.29	4.39	4.90	4.90	5.11	3.85	4.17	4.34	4.38	4.94	4.54	4.77
INT	4.48	4.51	4.50	4.59	5.26	5.40	5.38	4.98	4.95	4.68	4.61	5.62	4.62	4.53
ART INT	4.62	4.51	4.53	5.03	5.24	5.31	5.01	4.99	4.56	4.39	4.57	5.50	4.67	4.52
Koch	3.20	3.61	4.00	4.35	4.65	5.29	4.91	2.95	3.48	3.95	4.15	5.27	4.72	4.83
ATS	4.80	4.88	5.07	4.99	5.26	5.10	5.21	10.68	8.85	7.09	6.10	5.89	5.35	5.80
large design (4*6)														
parametric	4.41	4.94	5.24	4.96	4.86	5.29	5.25	4.40	4.76	5.16	5.03	4.90	4.88	4.85
parametric HF-adj	4.66	5.11	5.35	5.03	4.88	5.33	5.30	4.62	4.88	5.24	5.16	4.96	4.90	4.83
van der Waerden	3.13	3.91	4.50	4.40	4.90	4.99	4.90	3.00	3.70	4.25	4.28	4.59	4.71	4.62
KWF	3.05	3.85	4.50	4.49	4.78	4.94	4.90	3.10	3.76	4.35	4.39	4.55	4.80	4.80
Puri & Sen INT	3.21	3.96	4.71	4.91	4.83	4.97	5.00	3.46	4.24	4.79	4.83	5.04	4.78	4.63
Puri & Sen	3.80	4.38	4.89	5.01	4.97	4.89	4.67	3.31	4.09	4.71	4.95	5.12	4.75	4.65
INT	4.57	4.88	5.25	5.26	5.03	5.05	5.10	4.58	4.96	5.19	5.11	5.22	4.96	4.80
ART INT	4.50	4.92	5.29	5.04	4.83	5.24	5.45	4.27	4.72	5.15	5.08	5.00	4.67	5.00
Koch	2.73	3.54	4.22	4.29	4.58	4.78	4.82	1.91	3.08	4.08	4.16	4.29	4.34	4.60
ATS	3.60	4.09	4.59	4.74	4.69	4.74	4.50	5.47	5.19	4.74	4.44	4.79	4.84	5.05



1. 7. 1. 13 normal distribution - equal variances - contaminated III

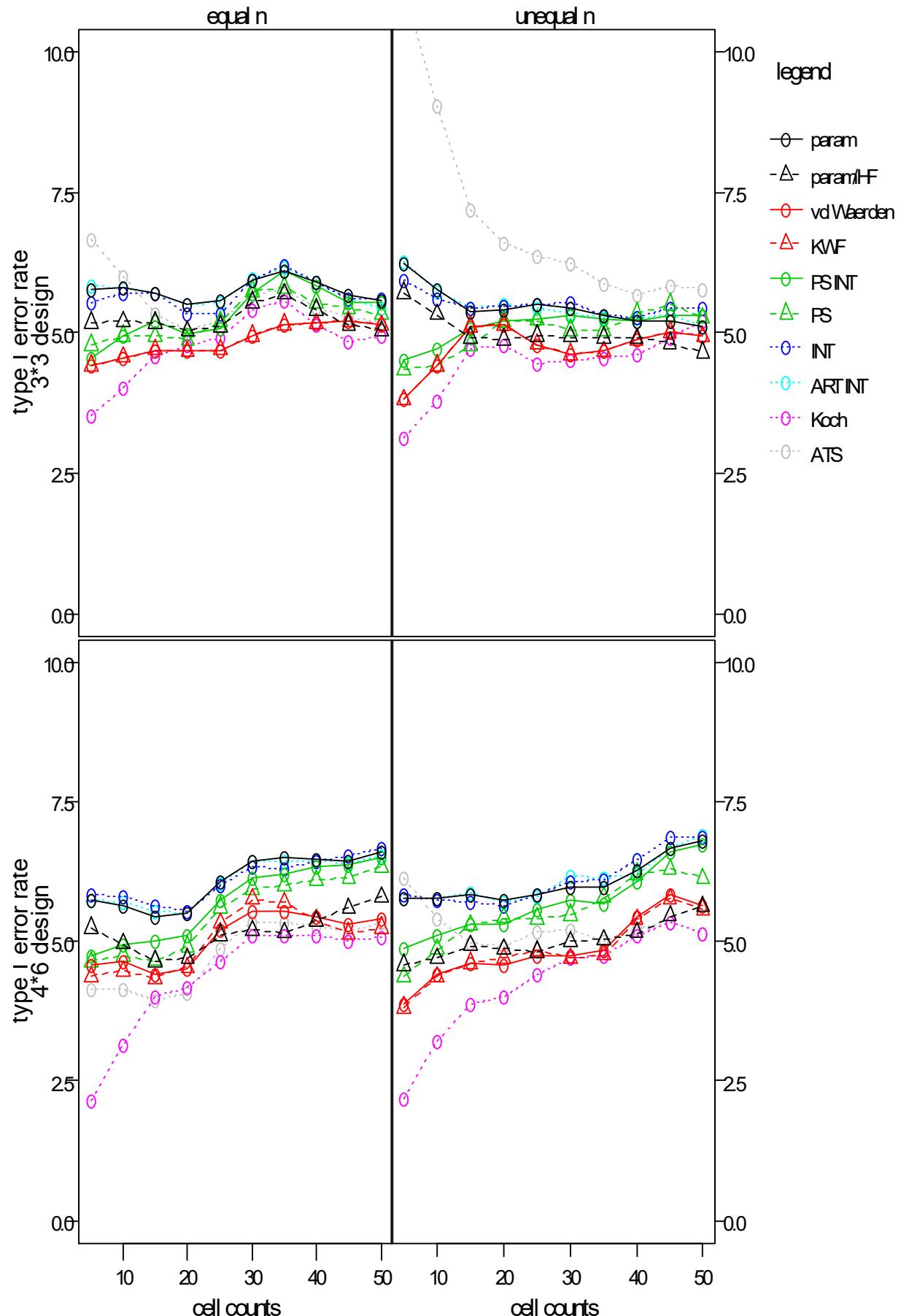
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.93	4.79	4.91	5.31	4.71	5.09	5.18	5.30	5.25	4.88	5.03	4.85	4.85	5.95
parametric HF-adj	4.52	4.40	4.61	5.15	4.67	5.01	5.00	5.11	5.11	4.79	4.94	4.64	4.84	5.82
van der Waerden	4.75	5.10	5.09	4.92	4.25	4.54	4.75	4.57	4.68	4.58	4.59	4.36	4.74	4.68
KWF	4.75	5.10	5.09	4.92	4.25	4.54	4.75	4.57	4.68	4.58	4.59	4.36	4.74	4.68
Puri & Sen INT	4.16	4.44	4.50	4.85	4.64	4.59	4.82	3.90	4.21	4.26	4.65	4.86	4.91	5.50
Puri & Sen	4.28	4.71	4.94	5.19	4.39	4.81	4.97	4.21	4.53	4.65	4.99	4.44	4.45	5.02
INT	5.53	5.21	4.94	5.22	4.84	4.78	4.98	4.88	4.96	4.77	4.99	5.06	4.97	5.58
ART INT	5.44	5.10	5.05	5.35	4.84	5.08	4.92	5.60	5.45	5.12	5.14	4.84	4.91	5.77
Koch	3.71	4.36	4.95	5.12	4.34	4.49	4.78	3.00	3.59	3.96	4.12	4.30	4.65	5.17
ATS	6.57	6.05	5.56	5.67	4.66	5.01	5.08	11.13	8.91	6.90	6.45	5.31	5.39	5.35
large design (4*6)														
parametric	5.41	5.45	5.22	5.22	5.80	5.08	5.37	5.62	5.59	5.27	5.22	5.91	5.44	5.45
parametric HF-adj	5.18	5.19	4.98	4.94	5.38	4.99	5.22	5.10	5.14	4.90	4.89	5.65	5.12	5.05
van der Waerden	4.01	4.59	5.00	4.85	4.79	4.82	5.20	4.12	4.86	4.71	4.34	5.39	4.65	5.10
KWF	3.95	4.59	4.96	4.76	4.80	4.80	4.92	4.07	4.76	4.54	4.20	5.36	4.55	5.20
Puri & Sen INT	3.53	4.10	4.51	4.86	5.26	4.59	5.00	4.16	4.74	4.75	4.62	5.61	4.91	5.00
Puri & Sen	3.71	4.30	4.41	4.44	5.30	4.80	4.88	4.26	4.60	4.54	4.60	5.35	4.92	5.23
INT	4.70	4.97	5.08	5.26	5.54	4.69	5.18	5.21	5.49	5.34	5.09	5.89	5.16	5.27
ART INT	5.26	5.30	5.16	5.31	5.88	5.08	5.27	5.93	5.92	5.50	5.22	5.76	5.38	5.22
Koch	2.61	3.42	3.80	3.94	4.61	4.79	5.03	2.39	3.19	3.67	4.05	4.92	4.21	4.56
ATS	3.31	4.01	4.21	4.25	5.09	4.60	4.65	5.84	5.00	4.44	4.49	5.03	4.39	4.60



1. 7. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

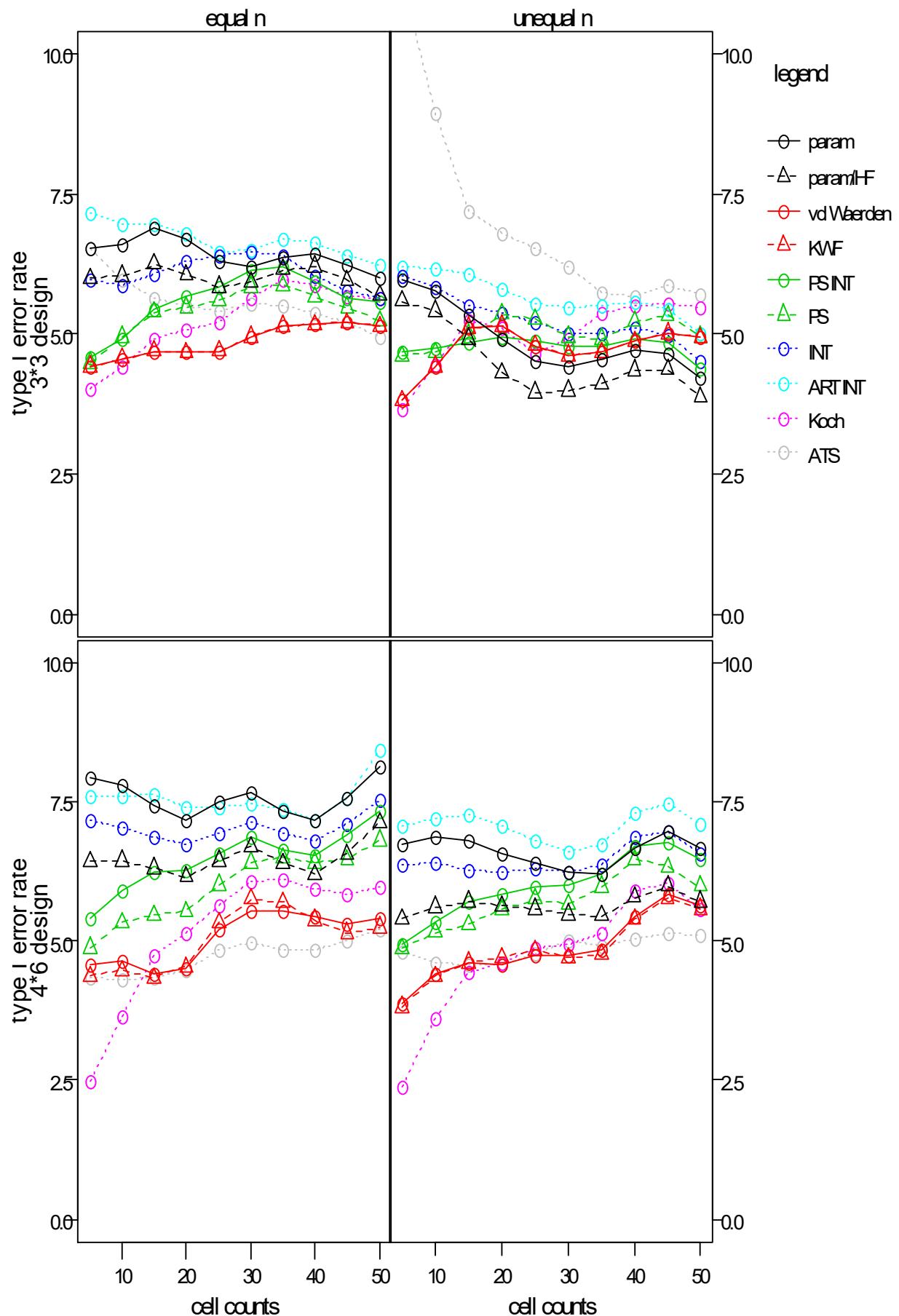
1. 7. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.78	5.81	5.71	5.50	5.94	5.89	5.57	6.22	5.76	5.38	5.40	5.45	5.21	5.12
parametric HF-adj	5.17	5.20	5.17	5.03	5.54	5.40	5.03	5.70	5.32	4.91	4.88	4.92	4.90	4.65
van der Waerden	4.42	4.56	4.69	4.67	4.95	5.16	5.13	3.81	4.41	5.11	5.14	4.61	4.86	4.93
KWF	4.42	4.56	4.69	4.67	4.95	5.16	5.13	3.81	4.41	5.11	5.14	4.61	4.86	4.93
Puri & Sen INT	4.53	4.95	5.21	4.99	5.70	5.84	5.52	4.50	4.71	5.08	5.21	5.32	5.19	5.30
Puri & Sen	4.78	4.95	4.93	4.86	5.74	5.54	5.32	4.33	4.40	4.78	5.21	5.04	5.34	5.26
INT	5.55	5.69	5.69	5.34	5.93	5.89	5.60	5.92	5.61	5.45	5.46	5.54	5.26	5.42
ART INT	5.83	5.79	5.71	5.51	5.96	5.89	5.43	6.27	5.74	5.44	5.49	5.35	5.28	5.11
Koch	3.53	4.03	4.59	4.79	5.39	5.14	4.93	3.11	3.80	4.71	4.78	4.50	4.61	5.22
ATS	6.65	6.01	5.34	5.04	5.66	5.44	5.18	11.16	9.03	7.20	6.58	6.23	5.68	5.78
large design (4*6)														
parametric	5.73	5.64	5.44	5.49	6.45	6.46	6.59	5.77	5.77	5.85	5.75	5.97	6.28	6.80
parametric HF-adj	5.24	4.95	4.64	4.70	5.19	5.36	5.79	4.58	4.70	4.92	4.86	5.00	5.15	5.62
van der Waerden	4.58	4.65	4.41	4.50	5.54	5.43	5.40	3.88	4.42	4.60	4.59	4.75	5.45	5.63
KWF	4.37	4.46	4.33	4.53	5.75	5.38	5.24	3.81	4.36	4.61	4.69	4.70	5.39	5.58
Puri & Sen INT	4.73	4.94	4.99	5.11	6.15	6.33	6.50	4.87	5.12	5.30	5.31	5.74	6.06	6.72
Puri & Sen	4.63	4.74	4.65	4.91	5.94	6.09	6.32	4.36	4.85	5.29	5.42	5.47	6.20	6.13
INT	5.83	5.80	5.62	5.54	6.33	6.45	6.65	5.85	5.74	5.69	5.64	6.08	6.47	6.87
ART INT	5.75	5.70	5.54	5.51	6.44	6.42	6.55	5.77	5.77	5.86	5.69	6.18	6.21	6.90
Koch	2.16	3.16	4.00	4.16	5.09	5.10	5.07	2.18	3.20	3.86	4.01	4.71	5.12	5.13
ATS	4.13	4.14	3.93	4.06	5.33	5.26	5.35	6.14	5.39	4.97	4.92	5.21	5.25	5.15



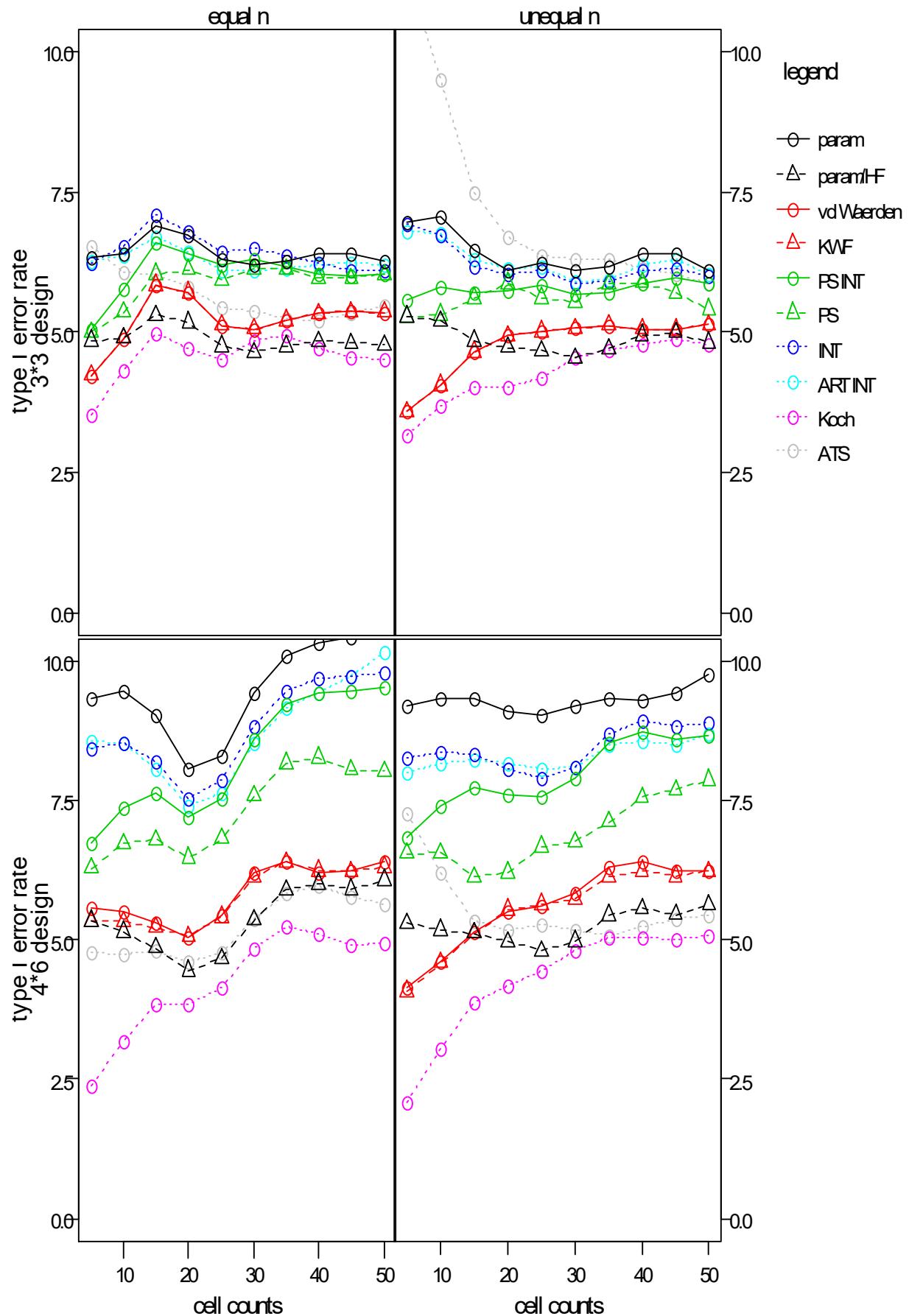
1. 7. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.54	6.60	6.88	6.70	6.19	6.42	6.00	5.97	5.76	5.35	4.90	4.41	4.72	4.20
parametric HF-adj	5.99	6.03	6.24	6.06	5.92	6.20	5.68	5.58	5.41	4.91	4.30	3.98	4.35	3.88
van der Waerden	4.42	4.56	4.69	4.67	4.95	5.16	5.13	3.81	4.41	5.11	5.14	4.61	4.86	4.93
KWF	4.42	4.56	4.69	4.67	4.95	5.16	5.13	3.81	4.41	5.11	5.14	4.61	4.86	4.93
Puri & Sen INT	4.58	4.91	5.43	5.68	6.12	5.92	5.58	4.67	4.74	4.84	4.95	4.76	4.90	4.39
Puri & Sen	4.48	4.94	5.38	5.47	5.84	5.66	5.23	4.60	4.66	4.99	5.35	4.94	5.22	4.95
INT	5.95	5.85	6.06	6.31	6.47	6.04	5.65	6.02	5.82	5.50	5.36	5.01	5.10	4.51
ART INT	7.14	6.94	6.96	6.78	6.50	6.64	6.23	6.18	6.17	6.05	5.81	5.46	5.58	5.01
Koch	4.02	4.41	4.90	5.06	5.64	5.85	5.63	3.65	4.46	5.24	5.09	4.90	5.49	5.48
ATS	6.54	5.97	5.64	5.49	5.54	5.36	4.93	11.32	8.94	7.17	6.78	6.21	5.66	5.70
large design (4*6)														
parametric	7.92	7.78	7.44	7.17	7.65	7.18	8.12	6.72	6.88	6.81	6.56	6.22	6.65	6.65
parametric HF-adj	6.42	6.44	6.31	6.15	6.69	6.19	7.12	5.40	5.61	5.70	5.62	5.47	5.78	5.70
van der Waerden	4.58	4.65	4.41	4.50	5.54	5.43	5.40	3.88	4.42	4.60	4.59	4.75	5.45	5.63
KWF	4.37	4.46	4.33	4.53	5.75	5.38	5.24	3.81	4.36	4.61	4.69	4.70	5.39	5.58
Puri & Sen INT	5.40	5.90	6.25	6.26	6.85	6.53	7.32	4.93	5.33	5.70	5.84	5.99	6.71	6.46
Puri & Sen	4.88	5.33	5.46	5.53	6.40	6.40	6.80	4.86	5.15	5.29	5.56	5.66	6.46	5.98
INT	7.15	7.03	6.87	6.74	7.12	6.80	7.52	6.37	6.40	6.28	6.22	6.24	6.85	6.58
ART INT	7.60	7.60	7.62	7.40	7.47	7.18	8.44	7.05	7.19	7.26	7.06	6.60	7.29	7.10
Koch	2.49	3.65	4.73	5.14	6.06	5.94	5.97	2.37	3.61	4.45	4.62	4.93	5.91	5.58
ATS	4.33	4.31	4.34	4.47	4.98	4.85	5.22	4.80	4.61	4.59	4.57	4.99	5.03	5.12



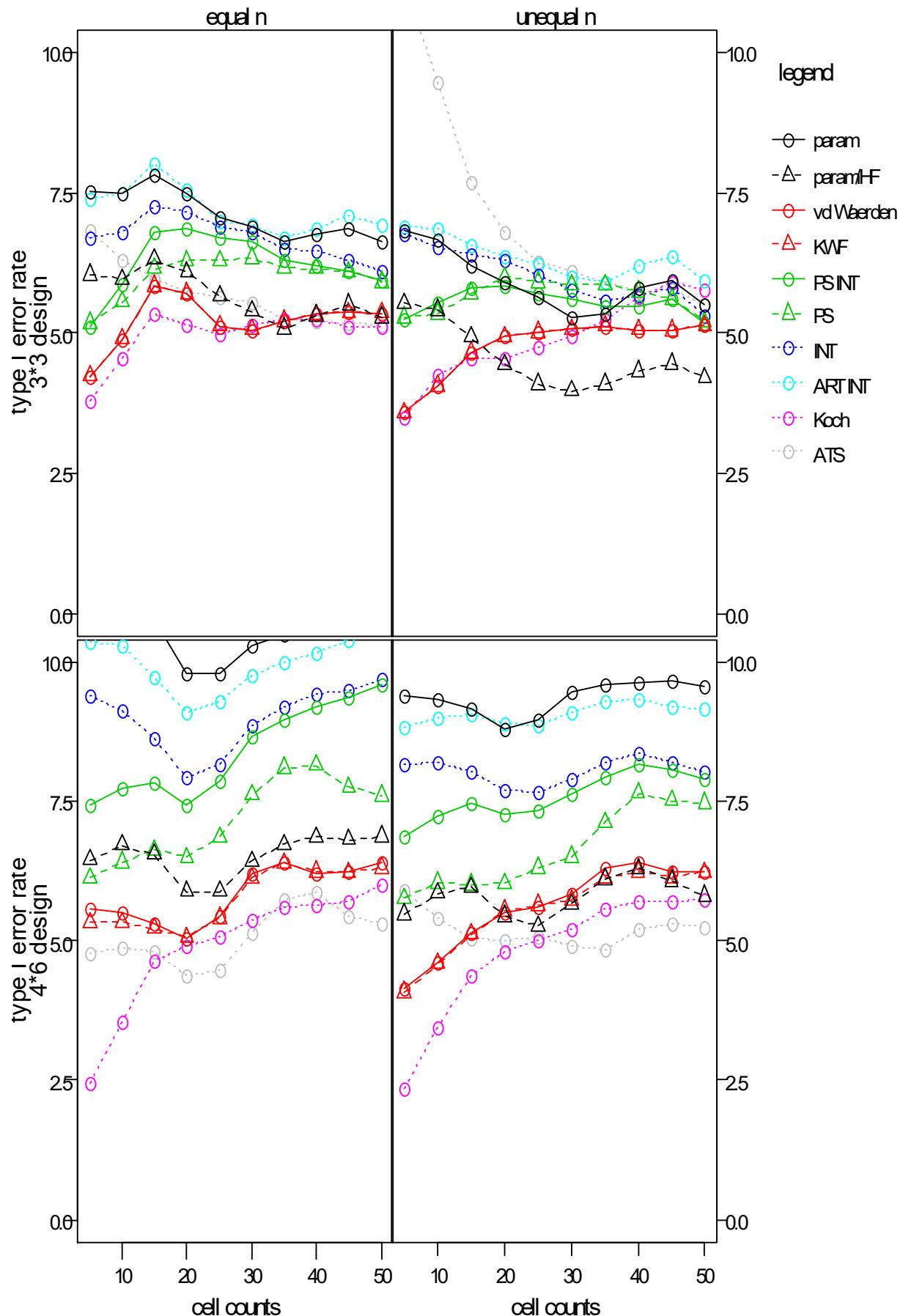
1. 7. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.32	6.41	6.90	6.74	6.21	6.40	6.27	6.95	7.05	6.47	6.11	6.10	6.41	6.10
parametric HF-adj	4.85	4.89	5.30	5.17	4.64	4.83	4.77	5.28	5.19	4.84	4.72	4.53	4.95	4.81
van der Waerden	4.23	4.89	5.83	5.70	5.05	5.33	5.35	3.58	4.05	4.65	4.93	5.06	5.05	5.13
KWF	4.23	4.89	5.83	5.70	5.05	5.33	5.35	3.58	4.05	4.65	4.93	5.06	5.05	5.13
Puri & Sen INT	5.03	5.75	6.60	6.41	6.31	6.03	6.03	5.56	5.81	5.71	5.74	5.66	5.88	5.85
Puri & Sen	5.00	5.35	6.03	6.11	6.12	5.95	6.02	5.28	5.31	5.61	5.87	5.54	5.88	5.41
INT	6.24	6.54	7.09	6.80	6.49	6.24	6.08	6.91	6.74	6.16	6.04	5.88	6.08	6.01
ART INT	6.25	6.35	6.70	6.44	6.11	6.21	6.20	6.78	6.76	6.31	6.14	5.91	6.21	6.03
Koch	3.53	4.30	4.99	4.71	4.85	4.71	4.50	3.15	3.69	4.01	4.00	4.54	4.79	4.76
ATS	6.54	6.06	6.04	5.81	5.38	5.21	5.47	11.41	9.49	7.50	6.69	6.30	6.14	5.85
large design (4*6)														
parametric	9.33	9.46	9.03	8.07	9.41	10.31	10.65	9.20	9.32	9.34	9.10	9.20	9.30	9.74
parametric HF-adj	5.34	5.14	4.85	4.45	5.35	6.01	6.07	5.29	5.18	5.12	4.96	4.97	5.56	5.62
van der Waerden	5.58	5.50	5.30	5.04	6.21	6.21	6.40	4.15	4.61	5.15	5.51	5.82	6.39	6.23
KWF	5.33	5.33	5.22	5.06	6.12	6.24	6.30	4.08	4.59	5.12	5.54	5.72	6.24	6.22
Puri & Sen INT	6.73	7.35	7.62	7.19	8.59	9.44	9.53	6.83	7.39	7.73	7.61	7.90	8.74	8.65
Puri & Sen	6.28	6.72	6.79	6.47	7.58	8.26	8.02	6.55	6.56	6.12	6.21	6.76	7.56	7.87
INT	8.42	8.54	8.20	7.54	8.84	9.69	9.78	8.27	8.36	8.34	8.07	8.11	8.93	8.90
ART INT	8.55	8.53	8.07	7.40	8.53	9.43	10.15	7.98	8.15	8.23	8.15	8.11	8.57	8.69
Koch	2.38	3.19	3.85	3.85	4.85	5.12	4.93	2.08	3.03	3.86	4.19	4.81	5.04	5.08
ATS	4.77	4.75	4.80	4.61	5.36	5.98	5.62	7.27	6.21	5.34	5.17	5.17	5.25	5.45



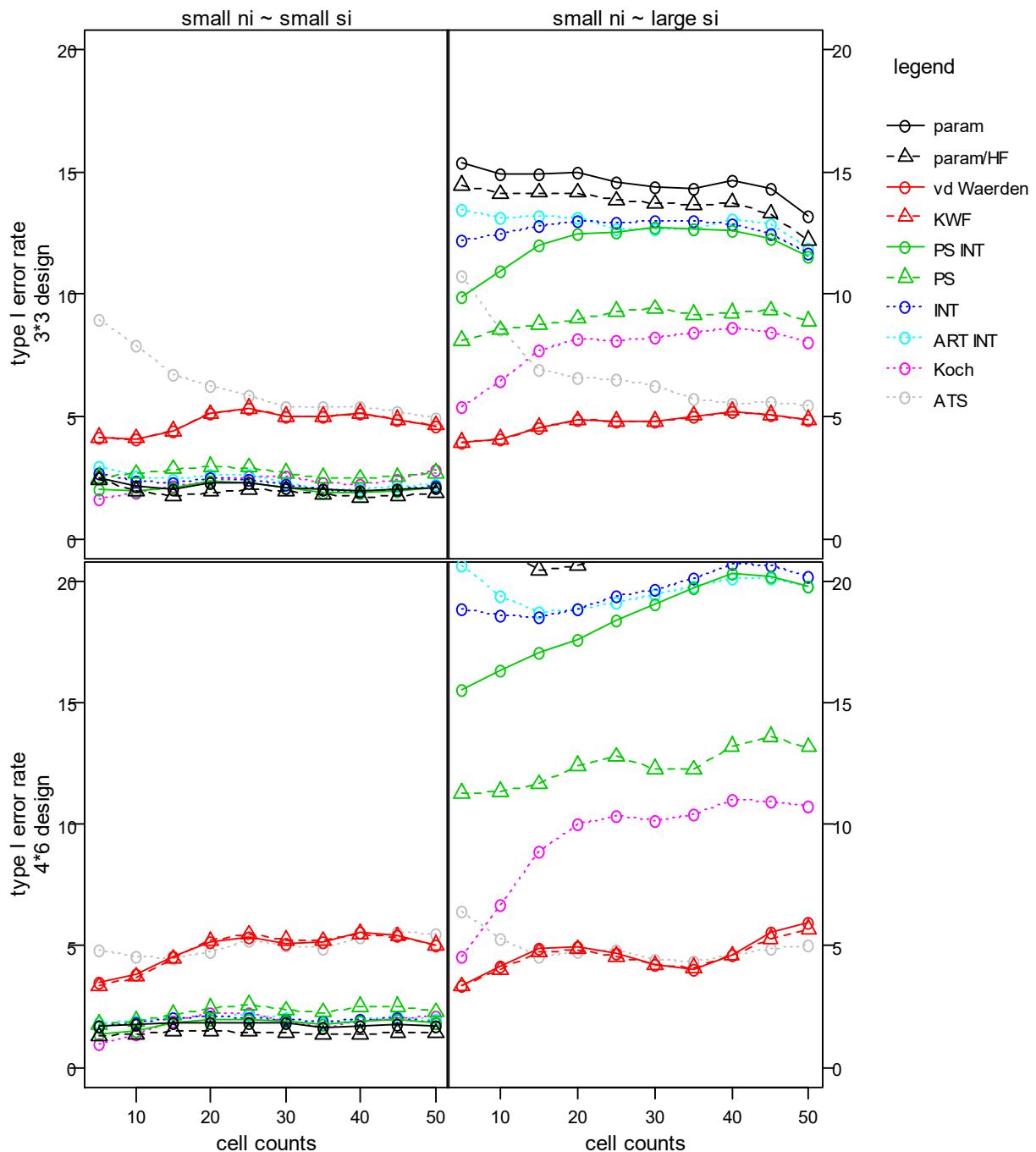
1. 7. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	7.52	7.47	7.80	7.50	6.88	6.77	6.62	6.82	6.67	6.20	5.91	5.28	5.79	5.51
parametric HF-adj	6.04	5.95	6.31	6.09	5.38	5.31	5.28	5.52	5.40	4.92	4.44	3.96	4.31	4.20
van der Waerden	4.23	4.89	5.83	5.70	5.05	5.33	5.35	3.58	4.05	4.65	4.93	5.06	5.05	5.13
KWF	4.23	4.89	5.83	5.70	5.05	5.33	5.35	3.58	4.05	4.65	4.93	5.06	5.05	5.13
Puri & Sen INT	5.12	5.85	6.80	6.84	6.64	6.20	5.92	5.25	5.55	5.80	5.84	5.59	5.47	5.18
Puri & Sen	5.18	5.55	6.14	6.28	6.33	6.14	5.90	5.28	5.34	5.70	5.99	5.86	5.74	5.19
INT	6.70	6.78	7.26	7.16	6.78	6.45	6.10	6.75	6.54	6.39	6.29	5.76	5.66	5.31
ART INT	7.37	7.49	8.00	7.56	6.91	6.86	6.93	6.90	6.84	6.55	6.35	6.00	6.20	5.93
Koch	3.80	4.55	5.33	5.15	5.15	5.25	5.10	3.48	4.24	4.54	4.56	4.95	5.62	5.78
ATS	6.82	6.28	5.98	5.74	5.55	5.19	5.13	11.26	9.46	7.69	6.80	6.09	5.73	5.51
large design (4*6)														
parametric	11.45	11.36	10.76	9.79	10.30	10.82	11.17	9.39	9.33	9.16	8.80	9.45	9.61	9.57
parametric HF-adj	6.45	6.71	6.55	5.88	6.42	6.85	6.87	5.48	5.85	5.96	5.44	5.66	6.29	5.80
van der Waerden	5.58	5.50	5.30	5.04	6.21	6.21	6.40	4.15	4.61	5.15	5.51	5.82	6.39	6.23
KWF	5.33	5.33	5.22	5.06	6.12	6.24	6.30	4.08	4.59	5.12	5.54	5.72	6.24	6.22
Puri & Sen INT	7.42	7.72	7.82	7.42	8.66	9.20	9.59	6.87	7.24	7.45	7.27	7.62	8.16	7.90
Puri & Sen	6.13	6.41	6.62	6.49	7.61	8.14	7.60	5.76	6.04	6.00	6.03	6.51	7.64	7.47
INT	9.39	9.12	8.64	7.94	8.86	9.41	9.69	8.17	8.18	8.03	7.69	7.91	8.35	8.03
ART INT	10.35	10.28	9.72	9.10	9.76	10.14	10.91	8.83	8.98	9.05	8.89	9.08	9.32	9.15
Koch	2.46	3.56	4.64	4.91	5.38	5.65	5.99	2.36	3.46	4.36	4.80	5.22	5.69	5.73
ATS	4.78	4.88	4.80	4.36	5.14	5.86	5.30	5.89	5.41	5.04	5.00	4.89	5.20	5.25



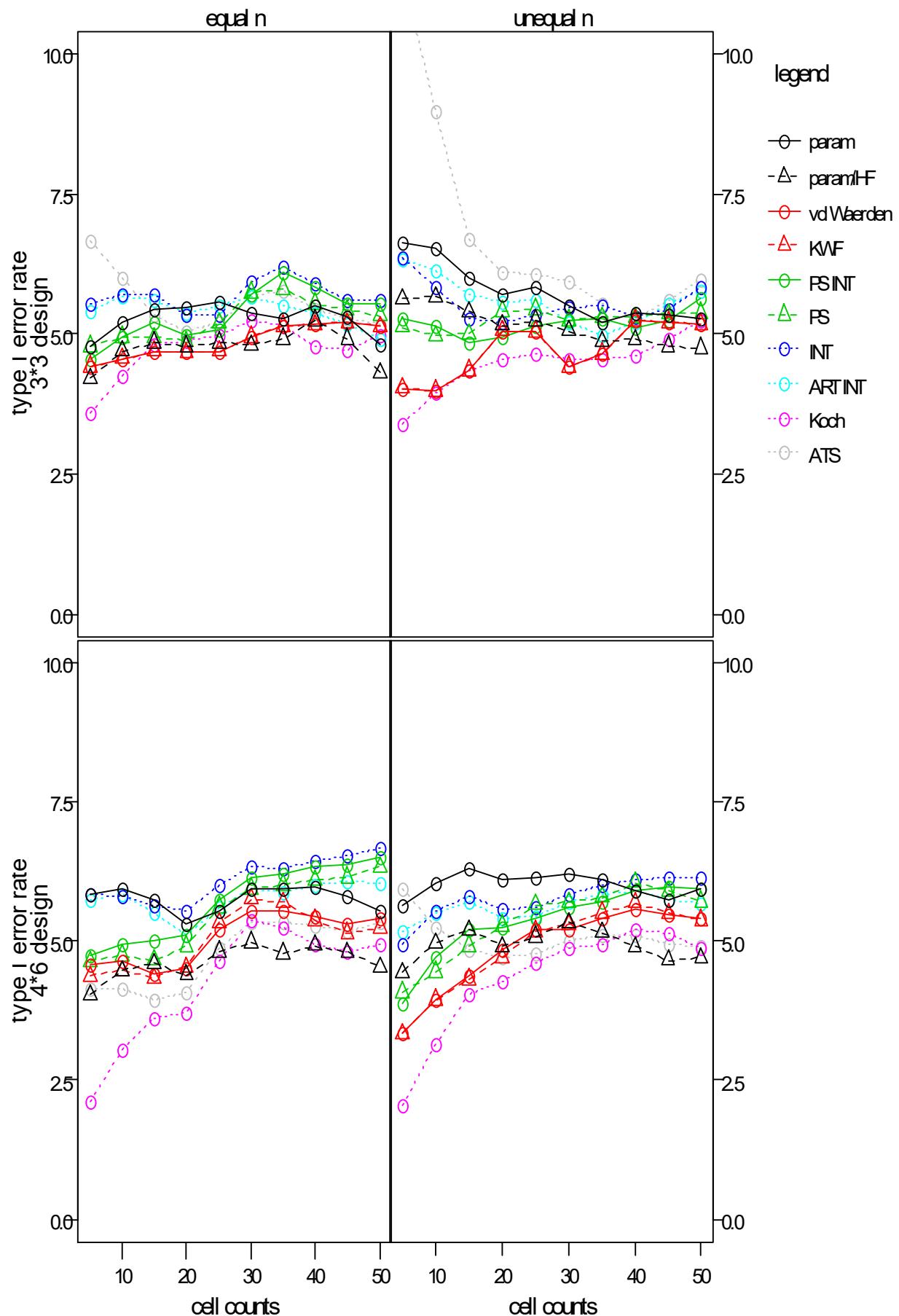
1. 7. 2. 5 normal distribution - unequal variances (on A) - pairing

	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
method	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.50	2.14	2.04	2.26	2.10	1.96	2.10	15.37	14.91	14.91	14.95	14.34	14.65	13.17
parametric HF-adj	2.40	1.96	1.75	1.91	1.95	1.69	1.88	14.44	14.10	14.13	14.14	13.70	13.74	12.21
van der Waerden	4.15	4.10	4.40	5.10	5.01	5.12	4.62	3.95	4.08	4.56	4.85	4.80	5.22	4.88
KWF	4.15	4.10	4.40	5.10	5.01	5.12	4.62	3.95	4.08	4.56	4.85	4.80	5.22	4.88
Puri & Sen INT	2.02	1.97	2.11	2.34	2.08	1.86	2.08	9.86	10.96	11.99	12.44	12.69	12.61	11.53
Puri & Sen	2.50	2.65	2.84	2.95	2.70	2.46	2.68	8.11	8.55	8.76	8.98	9.39	9.23	8.91
INT	2.69	2.36	2.29	2.46	2.20	1.90	2.13	12.18	12.43	12.80	13.00	12.97	12.84	11.66
ART INT	2.94	2.54	2.39	2.61	2.31	2.04	2.20	13.44	13.10	13.20	13.10	12.65	13.02	11.86
Koch	1.60	1.89	2.17	2.36	2.54	2.20	2.79	5.38	6.42	7.70	8.16	8.26	8.65	8.00
ATS	8.95	7.88	6.68	6.25	5.41	5.42	4.95	10.77	8.53	6.88	6.59	6.28	5.53	5.43
large design (4*6)														
parametric	1.70	1.75	1.81	1.81	1.81	1.69	1.72	24.98	23.64	22.68	22.86	23.40	24.52	23.43
parametric HF-adj	1.28	1.34	1.50	1.50	1.45	1.38	1.43	22.54	21.36	20.46	20.64	21.24	22.01	21.43
van der Waerden	3.52	3.86	4.55	5.16	5.12	5.56	5.01	3.36	4.14	4.90	4.97	4.24	4.65	5.97
KWF	3.35	3.73	4.48	5.21	5.24	5.50	5.03	3.35	4.00	4.75	4.86	4.22	4.61	5.70
Puri & Sen INT	1.40	1.51	1.82	1.95	1.90	1.91	1.85	15.53	16.31	17.06	17.60	19.02	20.29	19.78
Puri & Sen	1.77	1.92	2.18	2.44	2.36	2.52	2.27	11.27	11.34	11.65	12.41	12.27	13.20	13.16
INT	1.73	1.86	2.06	2.09	2.00	1.96	1.85	18.84	18.58	18.49	18.86	19.66	20.70	20.16
ART INT	1.85	1.88	2.04	2.11	2.04	2.00	1.98	20.61	19.36	18.73	18.85	19.43	20.12	19.80
Koch	0.98	1.39	1.92	2.25	1.89	1.88	2.08	4.59	6.72	8.90	10.03	10.14	10.98	10.75
ATS	4.85	4.58	4.47	4.75	5.06	5.36	5.48	6.41	5.26	4.55	4.78	4.45	4.65	5.05



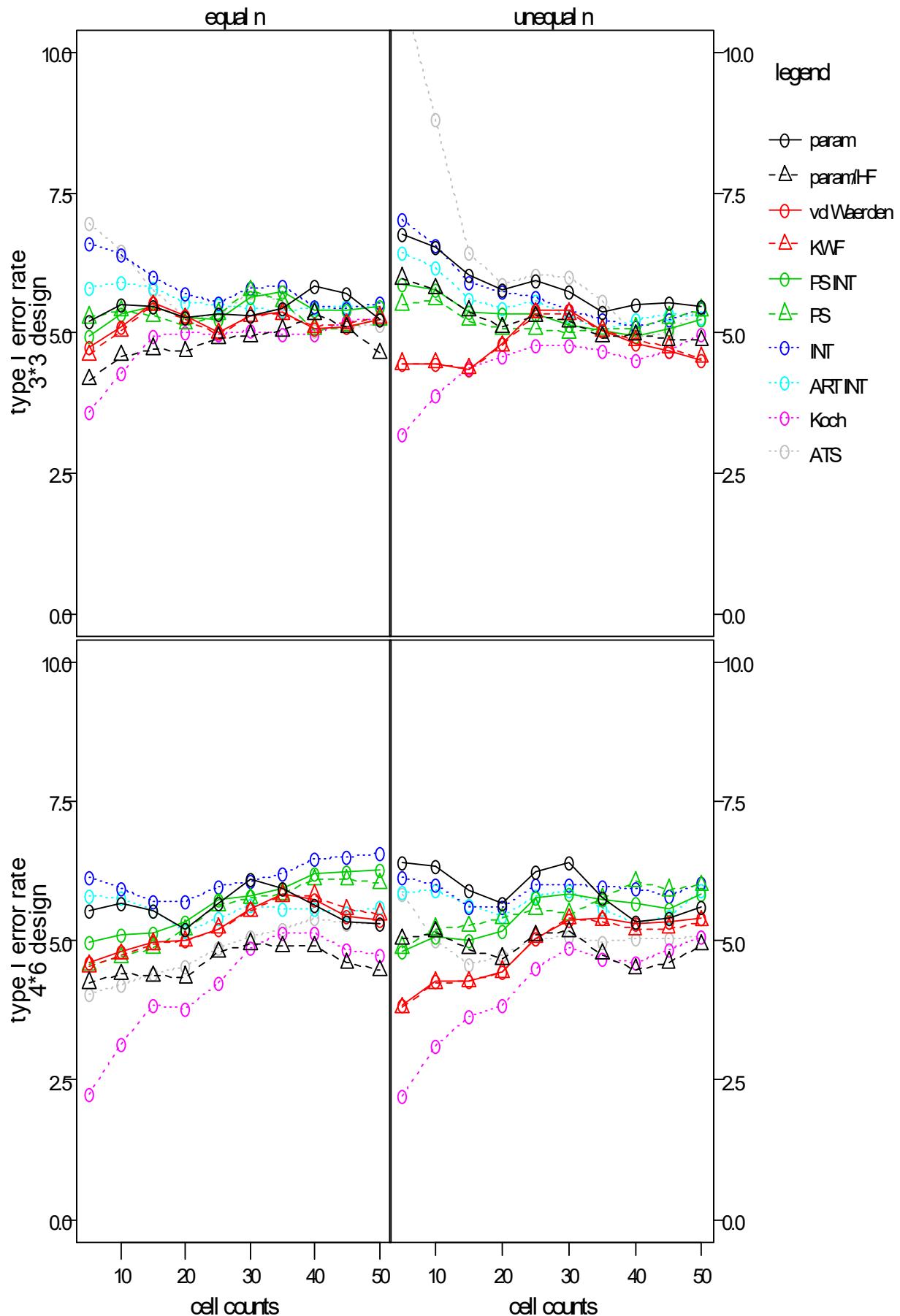
1. 7. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.78	5.20	5.43	5.47	5.38	5.50	4.81	6.62	6.51	6.00	5.71	5.49	5.36	5.28
parametric HF-adj	4.21	4.69	4.85	4.78	4.80	5.24	4.30	5.62	5.66	5.39	5.15	5.05	4.90	4.75
van der Waerden	4.42	4.56	4.69	4.67	4.95	5.16	5.13	4.03	3.99	4.35	5.05	4.41	5.24	5.17
KWF	4.42	4.56	4.69	4.67	4.95	5.16	5.13	4.03	3.99	4.35	5.05	4.41	5.24	5.17
Puri & Sen INT	4.53	4.95	5.21	4.99	5.70	5.84	5.52	5.28	5.14	4.85	4.95	5.24	5.09	5.62
Puri & Sen	4.78	4.95	4.93	4.86	5.74	5.54	5.32	5.12	4.96	5.00	5.40	5.24	5.30	5.37
INT	5.55	5.69	5.69	5.34	5.93	5.89	5.60	6.35	5.84	5.26	5.19	5.46	5.30	5.82
ART INT	5.40	5.66	5.60	5.36	5.66	5.36	4.92	6.32	6.12	5.69	5.56	5.21	5.19	5.75
Koch	3.60	4.25	4.81	4.88	5.24	4.76	4.97	3.40	3.95	4.34	4.55	4.55	4.62	5.25
ATS	6.65	6.01	5.34	5.04	5.66	5.44	5.18	11.48	8.98	6.68	6.08	5.94	5.28	5.97
large design (4*6)														
parametric	5.83	5.95	5.74	5.29	5.94	5.97	5.53	5.65	6.03	6.31	6.10	6.20	5.91	5.95
parametric HF-adj	4.03	4.47	4.60	4.39	4.98	4.92	4.53	4.43	4.96	5.19	4.89	5.33	4.89	4.70
van der Waerden	4.58	4.65	4.41	4.50	5.54	5.43	5.40	3.33	3.94	4.39	4.85	5.21	5.57	5.40
KWF	4.37	4.46	4.33	4.53	5.75	5.38	5.24	3.33	3.94	4.31	4.70	5.30	5.68	5.38
Puri & Sen INT	4.73	4.94	4.99	5.11	6.15	6.33	6.50	3.89	4.69	5.22	5.25	5.59	5.89	5.93
Puri & Sen	4.63	4.74	4.65	4.91	5.94	6.09	6.32	4.08	4.45	4.91	5.28	5.69	6.05	5.70
INT	5.83	5.80	5.62	5.54	6.33	6.45	6.65	4.95	5.55	5.80	5.57	5.82	6.11	6.12
ART INT	5.75	5.85	5.50	5.11	5.95	6.01	6.05	5.17	5.50	5.69	5.42	5.69	5.90	5.67
Koch	2.13	3.05	3.60	3.71	5.38	4.95	4.95	2.04	3.16	4.05	4.26	4.88	5.19	4.87
ATS	4.13	4.14	3.93	4.06	5.33	5.26	5.35	5.94	5.24	4.83	4.69	4.99	5.11	4.90



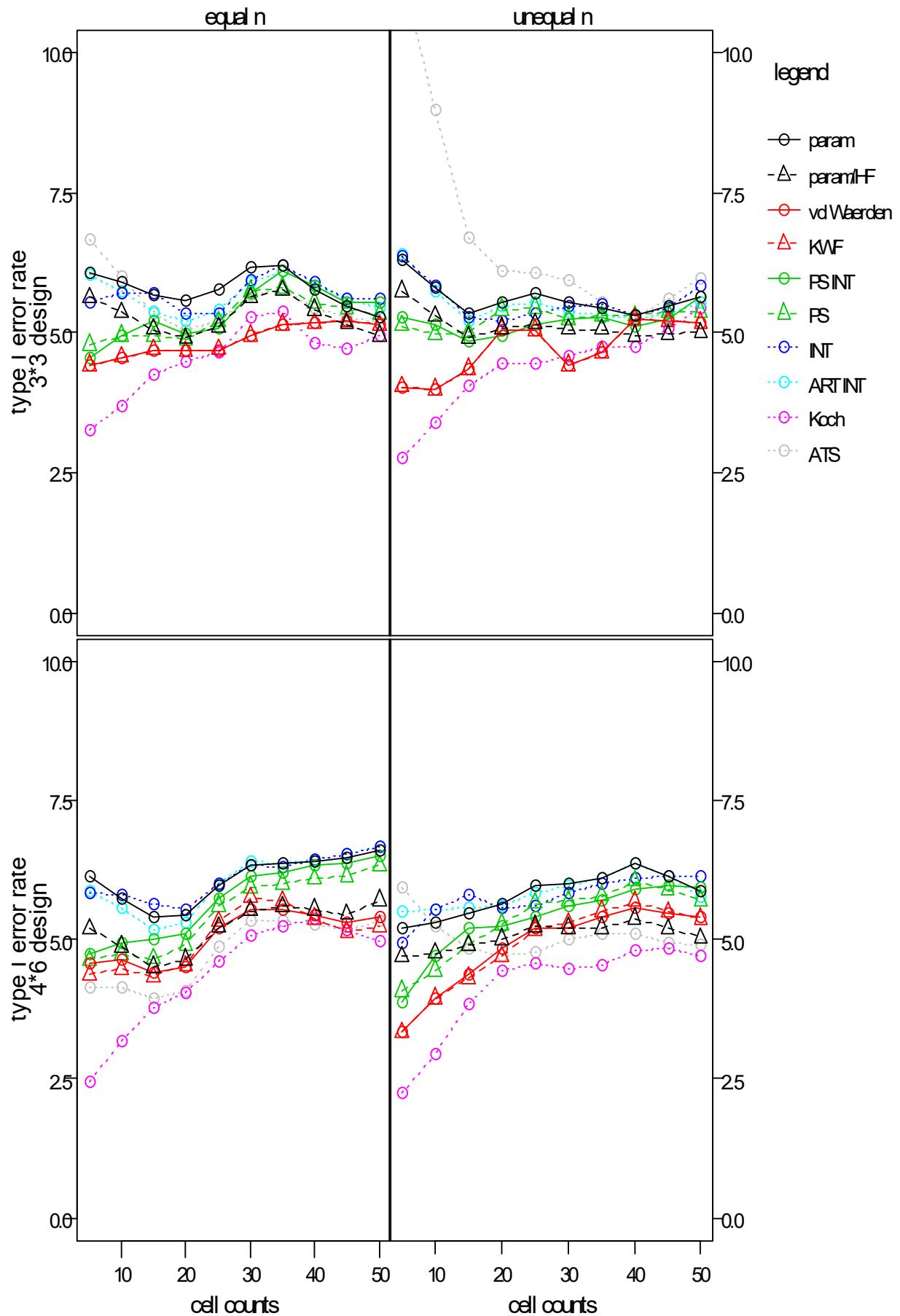
1. 7. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.20	5.49	5.46	5.28	5.31	5.82	5.25	6.77	6.51	6.03	5.75	5.74	5.51	5.48
parametric HF-adj	4.16	4.59	4.71	4.66	4.95	5.34	4.63	5.97	5.78	5.38	5.10	5.19	4.96	4.87
van der Waerden	4.73	5.11	5.54	5.30	5.30	5.08	5.23	4.43	4.44	4.36	4.80	5.40	4.81	4.50
KWF	4.60	5.03	5.49	5.25	5.29	5.09	5.27	4.45	4.46	4.36	4.76	5.34	4.86	4.56
Puri & Sen INT	4.95	5.33	5.46	5.26	5.65	5.39	5.47	5.85	5.77	5.38	5.34	5.14	4.94	5.23
Puri & Sen	5.28	5.39	5.29	5.15	5.76	5.05	5.23	5.50	5.60	5.22	5.08	5.00	5.07	5.40
INT	6.58	6.38	6.01	5.69	5.79	5.46	5.55	7.02	6.57	5.90	5.72	5.41	5.10	5.42
ART INT	5.80	5.89	5.79	5.54	5.45	5.45	5.48	6.42	6.16	5.61	5.45	5.29	5.24	5.28
Koch	3.60	4.28	4.93	5.00	5.05	4.99	5.27	3.20	3.90	4.39	4.57	4.79	4.50	4.99
ATS	6.94	6.45	5.76	5.27	5.72	5.05	5.15	11.16	8.79	6.44	5.85	6.00	4.94	5.43
large design (4*6)														
parametric	5.53	5.68	5.54	5.22	6.09	5.65	5.30	6.40	6.35	5.91	5.66	6.41	5.34	5.60
parametric HF-adj	4.25	4.40	4.36	4.35	4.94	4.89	4.47	5.03	5.15	4.85	4.67	5.16	4.49	4.92
van der Waerden	4.60	4.80	4.97	4.99	5.56	5.75	5.38	3.83	4.29	4.29	4.45	5.36	5.31	5.40
KWF	4.55	4.75	4.94	5.00	5.53	5.81	5.48	3.80	4.24	4.27	4.44	5.40	5.19	5.35
Puri & Sen INT	4.97	5.10	5.15	5.33	5.81	6.21	6.27	4.81	5.08	4.99	5.16	5.84	5.66	5.85
Puri & Sen	4.57	4.69	4.88	5.19	5.76	6.09	6.02	4.88	5.21	5.26	5.39	5.47	6.06	5.99
INT	6.15	5.94	5.70	5.69	6.06	6.46	6.58	6.12	6.00	5.60	5.61	6.00	5.94	6.02
ART INT	5.80	5.78	5.54	5.16	5.62	5.57	5.60	5.88	5.91	5.62	5.44	5.91	5.31	5.91
Koch	2.25	3.16	3.83	3.76	4.86	5.15	4.75	2.23	3.12	3.64	3.84	4.88	4.60	5.07
ATS	4.03	4.21	4.40	4.54	5.06	5.39	5.30	5.84	5.00	4.57	4.73	5.06	5.05	5.08



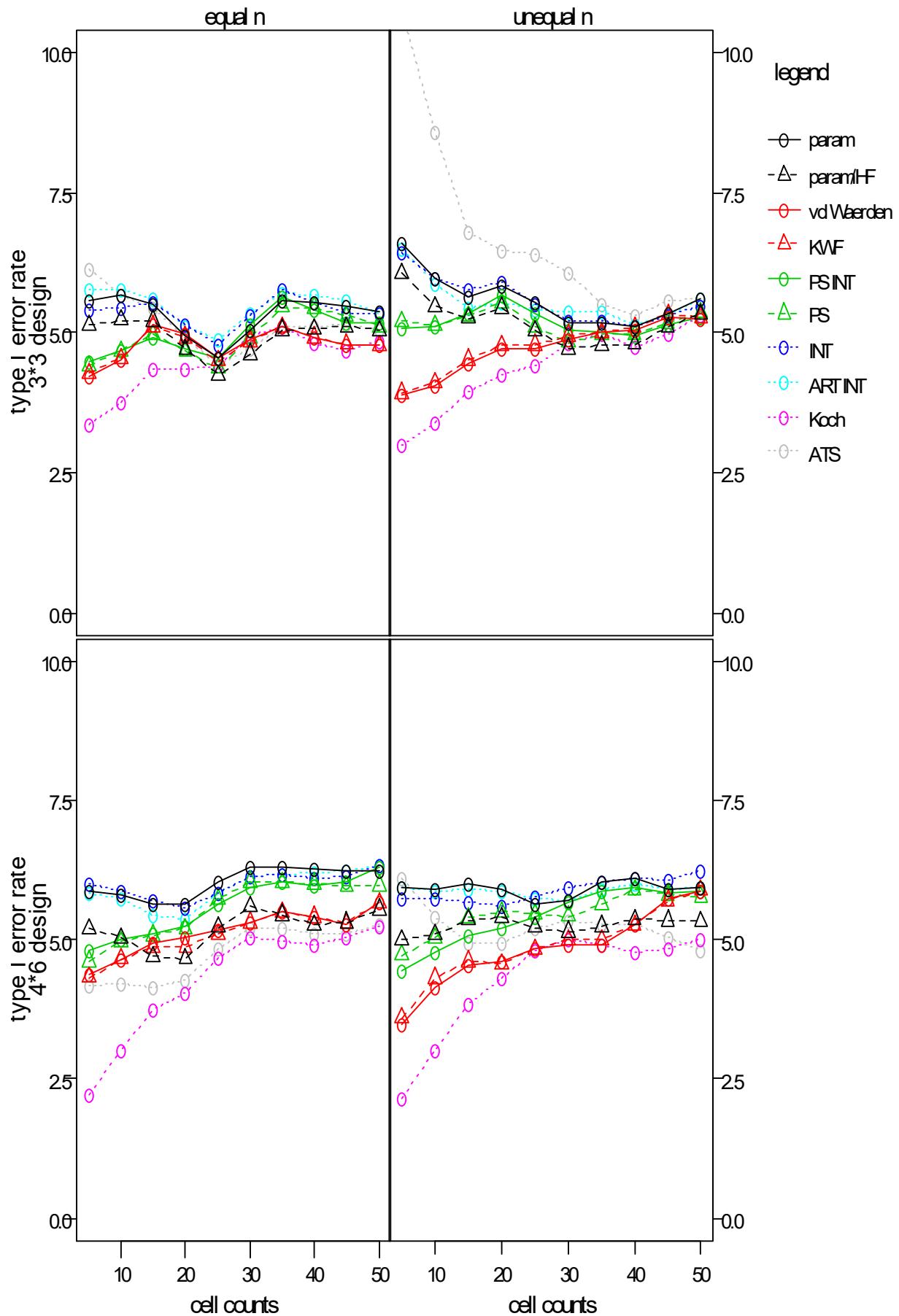
1. 7. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.05	5.90	5.67	5.57	6.17	5.76	5.28	6.29	5.80	5.34	5.55	5.55	5.30	5.62
parametric HF-adj	5.63	5.36	5.05	4.90	5.62	5.40	4.95	5.74	5.29	4.91	5.08	5.05	4.95	5.00
van der Waerden	4.42	4.56	4.69	4.67	4.95	5.16	5.13	4.03	3.99	4.35	5.05	4.41	5.24	5.17
KWF	4.42	4.56	4.69	4.67	4.95	5.16	5.13	4.03	3.99	4.35	5.05	4.41	5.24	5.17
Puri & Sen INT	4.53	4.95	5.21	4.99	5.70	5.84	5.52	5.28	5.14	4.85	4.95	5.24	5.09	5.62
Puri & Sen	4.78	4.95	4.93	4.86	5.74	5.54	5.32	5.12	4.96	5.00	5.40	5.24	5.30	5.37
INT	5.55	5.69	5.69	5.34	5.93	5.89	5.60	6.35	5.84	5.26	5.19	5.46	5.30	5.82
ART INT	6.02	5.72	5.36	5.20	5.91	5.83	5.43	6.39	5.72	5.21	5.46	5.36	5.24	5.52
Koch	3.26	3.67	4.25	4.47	5.28	4.80	4.95	2.76	3.39	4.05	4.44	4.57	4.75	5.43
ATS	6.65	6.01	5.34	5.04	5.66	5.44	5.18	11.48	8.98	6.68	6.08	5.94	5.28	5.97
large design (4*6)														
parametric	6.15	5.75	5.39	5.45	6.33	6.39	6.60	5.20	5.29	5.47	5.65	6.00	6.38	5.88
parametric HF-adj	5.20	4.88	4.51	4.64	5.52	5.54	5.70	4.70	4.75	4.89	5.01	5.21	5.38	5.03
van der Waerden	4.58	4.65	4.41	4.50	5.54	5.43	5.40	3.33	3.94	4.39	4.85	5.21	5.57	5.40
KWF	4.37	4.46	4.33	4.53	5.75	5.38	5.24	3.33	3.94	4.31	4.70	5.30	5.68	5.38
Puri & Sen INT	4.73	4.94	4.99	5.11	6.15	6.33	6.50	3.89	4.69	5.22	5.25	5.59	5.89	5.93
Puri & Sen	4.63	4.74	4.65	4.91	5.94	6.09	6.32	4.08	4.45	4.91	5.28	5.69	6.05	5.70
INT	5.83	5.80	5.62	5.54	6.33	6.45	6.65	4.95	5.55	5.80	5.57	5.82	6.11	6.12
ART INT	5.87	5.56	5.16	5.29	6.39	6.43	6.68	5.50	5.55	5.58	5.59	5.98	6.38	5.77
Koch	2.45	3.18	3.79	4.05	5.06	5.36	4.98	2.26	2.95	3.85	4.45	4.46	4.81	4.70
ATS	4.13	4.14	3.93	4.06	5.33	5.26	5.35	5.94	5.24	4.83	4.69	4.99	5.11	4.90



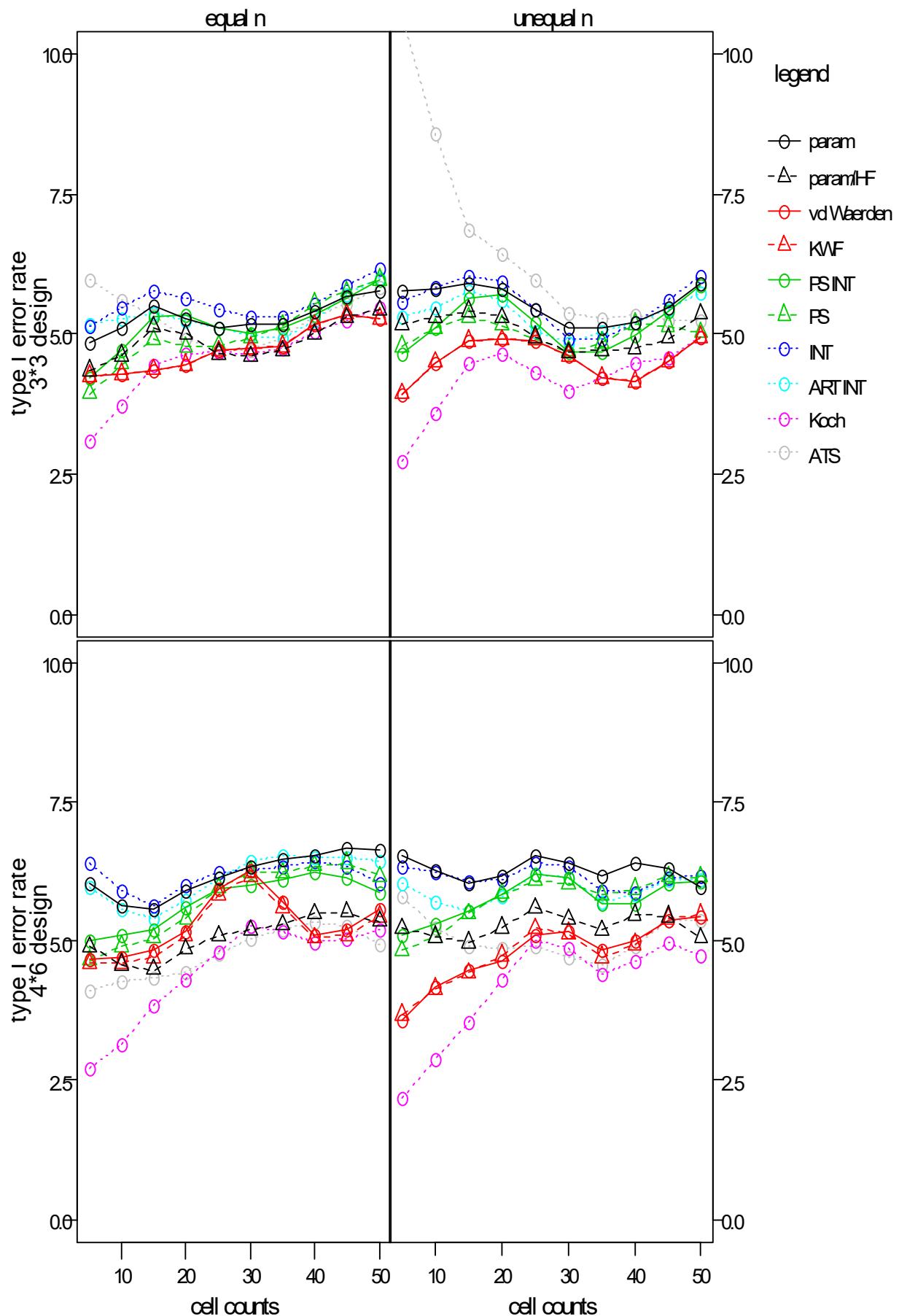
1. 7. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.58	5.66	5.51	4.94	5.04	5.53	5.38	6.59	5.95	5.62	5.83	5.17	5.11	5.60
parametric HF-adj	5.13	5.22	5.21	4.70	4.61	5.06	5.03	6.05	5.46	5.25	5.44	4.71	4.79	5.33
van der Waerden	4.22	4.51	5.14	4.96	4.88	4.92	4.77	3.90	4.04	4.45	4.71	4.89	5.05	5.25
KWF	4.27	4.54	5.11	4.91	4.85	4.91	4.77	3.92	4.10	4.52	4.76	4.94	5.09	5.28
Puri & Sen INT	4.47	4.67	4.90	4.70	5.14	5.39	5.17	5.07	5.11	5.33	5.66	5.03	4.94	5.28
Puri & Sen	4.40	4.67	4.97	4.66	4.91	5.44	5.10	5.20	5.12	5.30	5.53	4.82	4.96	5.35
INT	5.40	5.45	5.55	5.15	5.29	5.52	5.35	6.44	5.96	5.75	5.90	5.21	5.10	5.48
ART INT	5.75	5.75	5.61	5.12	5.34	5.67	5.35	6.49	5.85	5.44	5.55	5.38	5.15	5.60
Koch	3.35	3.75	4.34	4.36	4.95	4.81	4.85	2.98	3.40	3.95	4.26	4.80	4.75	5.30
ATS	6.14	5.68	5.42	4.90	4.72	5.12	5.05	10.75	8.56	6.79	6.46	6.07	5.29	5.60
large design (4*6)														
parametric	5.87	5.80	5.65	5.64	6.31	6.26	6.23	5.92	5.91	5.99	5.89	5.70	6.09	5.92
parametric HF-adj	5.20	5.03	4.69	4.65	5.59	5.26	5.54	5.00	5.10	5.35	5.39	5.14	5.36	5.33
van der Waerden	4.37	4.65	4.95	5.03	5.30	5.41	5.66	3.48	4.15	4.55	4.62	4.92	5.28	5.88
KWF	4.32	4.65	4.86	4.88	5.31	5.41	5.66	3.59	4.31	4.61	4.56	5.00	5.26	5.88
Puri & Sen INT	4.80	4.99	5.11	5.25	5.94	5.97	6.30	4.45	4.78	5.08	5.20	5.66	5.92	5.87
Puri & Sen	4.61	4.96	5.08	5.19	6.04	6.00	5.97	4.72	5.03	5.39	5.49	5.42	5.89	5.77
INT	6.00	5.88	5.69	5.56	6.14	6.09	6.34	5.75	5.74	5.66	5.61	5.93	6.10	6.22
ART INT	5.85	5.75	5.45	5.38	6.15	6.19	6.35	5.93	5.86	5.91	5.88	5.69	6.01	5.95
Koch	2.20	3.00	3.73	4.05	5.04	4.92	5.25	2.14	3.02	3.85	4.32	5.01	4.77	5.00
ATS	4.18	4.22	4.15	4.26	5.21	5.11	5.27	6.09	5.39	4.95	4.94	5.33	5.28	4.80



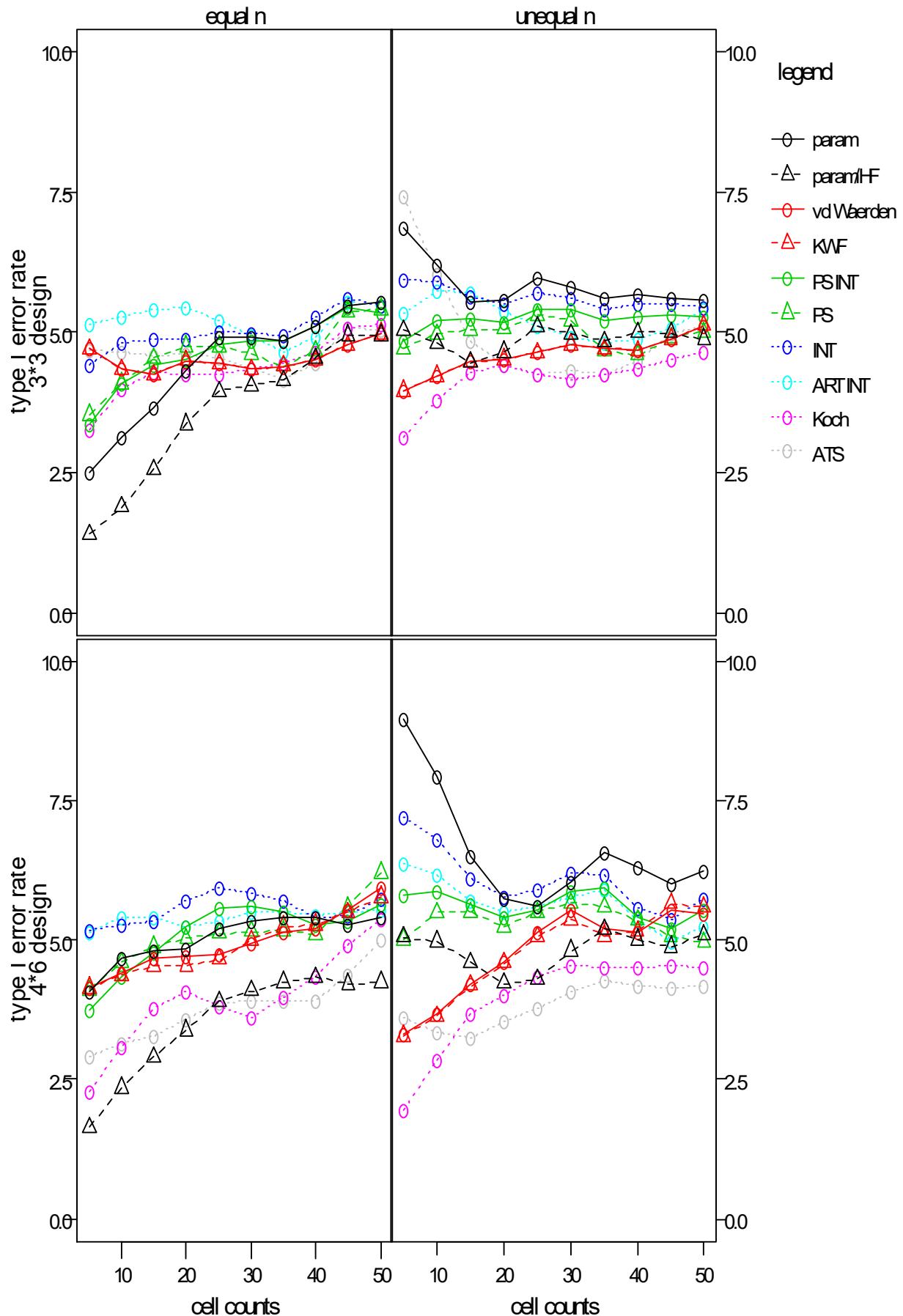
1. 7. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.85	5.12	5.50	5.28	5.17	5.39	5.78	5.77	5.79	5.90	5.79	5.12	5.19	5.90
parametric HF-adj	4.35	4.62	5.12	5.00	4.60	5.00	5.42	5.18	5.30	5.41	5.29	4.66	4.75	5.35
van der Waerden	4.25	4.28	4.36	4.45	4.75	5.16	5.27	3.93	4.49	4.88	4.90	4.62	4.15	4.94
KWF	4.25	4.28	4.36	4.45	4.75	5.16	5.27	3.93	4.49	4.88	4.90	4.62	4.15	4.94
Puri & Sen INT	4.23	4.70	5.29	5.34	5.00	5.34	5.95	4.65	5.12	5.65	5.69	4.69	4.96	5.87
Puri & Sen	3.93	4.46	4.90	4.76	4.93	5.54	5.97	4.78	5.10	5.29	5.15	4.69	5.17	5.02
INT	5.13	5.47	5.78	5.65	5.29	5.54	6.15	5.58	5.84	6.03	5.94	4.90	5.21	6.02
ART INT	5.17	5.27	5.38	5.25	4.98	5.23	6.00	5.30	5.47	5.76	5.59	4.84	5.22	5.74
Koch	3.08	3.72	4.45	4.64	4.65	5.04	5.47	2.73	3.58	4.47	4.64	3.97	4.47	4.94
ATS	5.95	5.61	5.33	4.92	4.72	5.30	5.84	10.68	8.58	6.85	6.42	5.38	5.34	5.23
large design (4*6)														
parametric	6.04	5.65	5.56	5.90	6.35	6.55	6.63	6.52	6.26	6.04	6.16	6.41	6.39	5.96
parametric HF-adj	4.90	4.58	4.49	4.85	5.19	5.49	5.35	5.23	5.08	4.97	5.24	5.39	5.47	5.05
van der Waerden	4.67	4.70	4.84	5.18	6.28	5.12	5.57	3.58	4.19	4.48	4.65	5.16	5.00	5.45
KWF	4.60	4.61	4.71	5.09	6.16	5.06	5.44	3.68	4.15	4.43	4.74	5.14	4.94	5.47
Puri & Sen INT	5.00	5.11	5.21	5.59	6.00	6.24	5.88	5.12	5.30	5.54	5.85	6.14	5.68	6.08
Puri & Sen	4.65	4.91	5.05	5.39	6.24	6.35	6.16	4.83	5.06	5.50	5.85	6.04	5.94	6.15
INT	6.40	5.89	5.64	6.00	6.26	6.45	6.03	6.33	6.25	6.07	6.10	6.35	5.88	6.18
ART INT	5.97	5.56	5.40	5.75	6.42	6.50	6.42	6.05	5.71	5.55	5.79	6.14	5.83	6.10
Koch	2.70	3.15	3.84	4.30	5.26	4.96	5.22	2.19	2.89	3.54	4.31	4.86	4.65	4.75
ATS	4.10	4.28	4.33	4.44	5.05	5.35	4.95	5.80	5.25	4.89	4.88	4.71	4.91	5.38



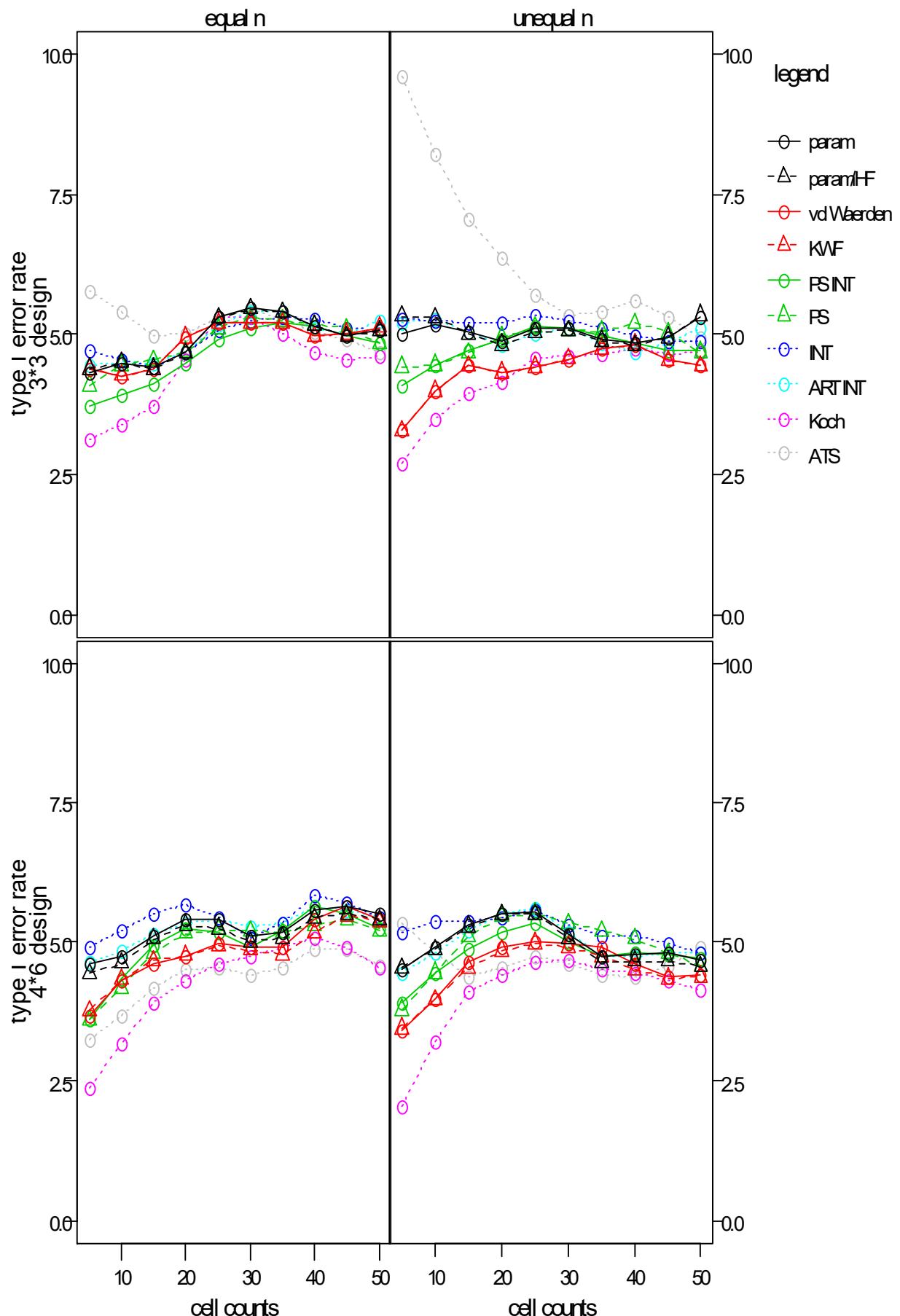
1. 7. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.51	3.11	3.66	4.31	4.90	5.12	5.52	6.85	6.21	5.53	5.58	5.80	5.66	5.57
parametric HF-adj	1.40	1.88	2.55	3.36	4.04	4.54	4.95	5.03	4.80	4.46	4.65	4.96	5.00	4.88
van der Waerden	4.70	4.33	4.24	4.49	4.34	4.50	4.98	3.95	4.22	4.47	4.51	4.78	4.67	5.12
KWF	4.70	4.33	4.24	4.49	4.34	4.50	4.98	3.95	4.22	4.47	4.51	4.78	4.67	5.12
Puri & Sen INT	3.34	4.09	4.42	4.51	4.85	5.12	5.33	4.85	5.20	5.24	5.17	5.39	5.26	5.28
Puri & Sen	3.53	4.09	4.54	4.75	4.61	4.67	5.41	4.70	4.97	5.04	5.05	5.21	4.59	5.00
INT	4.40	4.81	4.88	4.88	4.97	5.28	5.46	5.93	5.91	5.62	5.51	5.59	5.49	5.42
ART INT	5.15	5.26	5.39	5.45	4.94	4.90	5.46	5.33	5.72	5.71	5.38	4.91	4.86	5.40
Koch	3.24	3.97	4.29	4.24	4.35	4.65	5.15	3.14	3.79	4.29	4.42	4.14	4.36	4.65
ATS	4.68	4.64	4.59	4.62	4.35	4.46	5.05	7.41	6.03	4.85	4.40	4.30	4.49	5.10
large design (4*6)														
parametric	4.06	4.66	4.79	4.83	5.33	5.39	5.42	8.95	7.92	6.50	5.74	6.04	6.31	6.22
parametric HF-adj	1.64	2.35	2.90	3.38	4.09	4.33	4.25	5.05	4.97	4.60	4.22	4.81	5.01	5.10
van der Waerden	4.13	4.40	4.67	4.72	4.95	5.19	5.92	3.30	3.69	4.21	4.60	5.54	5.15	5.48
KWF	4.15	4.36	4.54	4.54	4.99	5.28	5.77	3.28	3.63	4.19	4.59	5.38	5.16	5.60
Puri & Sen INT	3.73	4.33	4.78	5.25	5.60	5.26	5.63	5.80	5.88	5.62	5.40	5.88	5.40	5.55
Puri & Sen	4.10	4.60	4.88	5.03	5.15	5.11	6.20	5.01	5.49	5.50	5.24	5.66	5.35	4.95
INT	5.18	5.28	5.34	5.71	5.84	5.40	5.75	7.20	6.81	6.11	5.78	6.19	5.56	5.72
ART INT	5.15	5.42	5.39	5.25	5.51	5.44	5.53	6.38	6.18	5.69	5.50	5.77	5.34	5.25
Koch	2.28	3.08	3.78	4.06	3.61	4.34	5.38	1.94	2.84	3.66	4.00	4.55	4.50	4.52
ATS	2.91	3.15	3.28	3.59	3.91	3.91	5.00	3.62	3.33	3.26	3.54	4.08	4.17	4.17



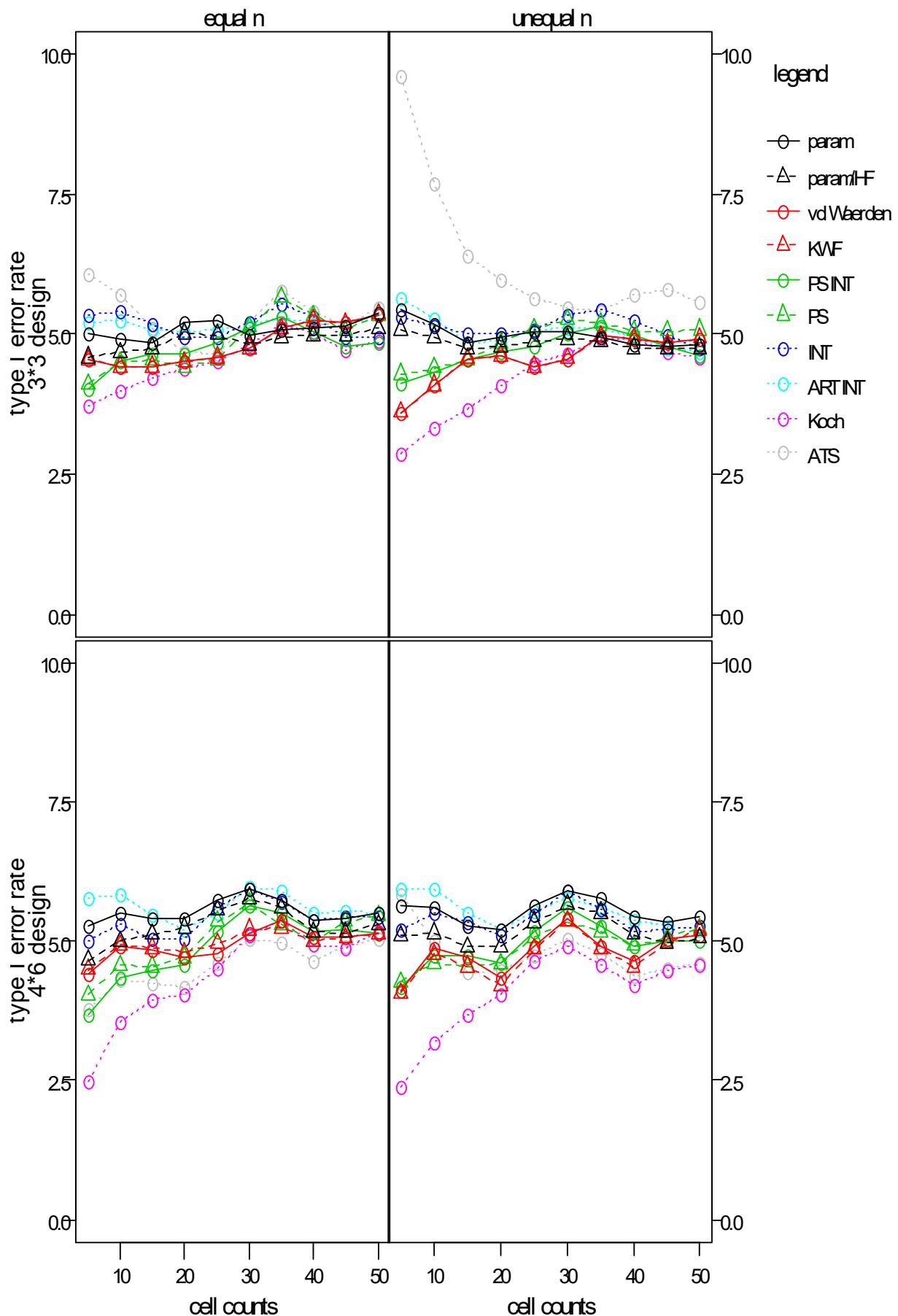
1. 7. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.31	4.49	4.41	4.67	5.47	5.15	5.08	5.00	5.16	5.04	4.88	5.12	4.83	5.29
parametric HF-adj	4.38	4.49	4.38	4.67	5.45	5.15	5.05	5.32	5.29	5.00	4.81	5.06	4.80	5.34
van der Waerden	4.38	4.26	4.38	4.95	5.21	4.96	5.12	3.28	3.98	4.43	4.31	4.56	4.82	4.43
KWF	4.38	4.26	4.38	4.95	5.21	4.96	5.12	3.28	3.98	4.43	4.31	4.56	4.82	4.43
Puri & Sen INT	3.73	3.92	4.10	4.47	5.09	5.14	4.85	4.08	4.46	4.70	4.90	5.10	4.83	4.72
Puri & Sen	4.08	4.45	4.54	4.69	5.30	5.16	4.83	4.42	4.45	4.66	4.94	5.06	5.19	4.68
INT	4.70	4.56	4.40	4.66	5.24	5.26	5.07	5.27	5.25	5.19	5.22	5.25	4.96	4.88
ART INT	4.45	4.51	4.47	4.69	5.40	5.11	5.25	5.22	5.26	5.05	4.80	5.11	4.68	5.09
Koch	3.13	3.40	3.71	4.54	5.31	4.66	4.60	2.68	3.50	3.94	4.15	4.60	4.74	4.67
ATS	5.75	5.40	4.97	5.00	5.42	5.05	4.66	9.59	8.20	7.06	6.36	5.34	5.59	4.93
large design (4*6)														
parametric	4.60	4.74	5.10	5.41	5.11	5.57	5.50	4.50	4.91	5.29	5.49	5.15	4.78	4.68
parametric HF-adj	4.43	4.62	5.05	5.31	5.00	5.43	5.40	4.53	4.86	5.28	5.50	5.06	4.65	4.57
van der Waerden	3.66	4.30	4.62	4.74	4.89	5.40	5.41	3.40	3.99	4.65	4.92	4.97	4.61	4.40
KWF	3.76	4.32	4.66	4.75	4.85	5.16	5.36	3.45	3.96	4.53	4.84	4.91	4.51	4.38
Puri & Sen INT	3.61	4.33	4.95	5.23	4.91	5.64	5.25	3.90	4.45	4.86	5.18	4.99	4.79	4.72
Puri & Sen	3.60	4.17	4.81	5.15	5.19	5.30	5.20	3.78	4.45	5.09	5.45	5.33	5.05	4.57
INT	4.90	5.19	5.52	5.67	5.08	5.83	5.43	5.18	5.38	5.38	5.45	5.31	5.09	4.82
ART INT	4.63	4.85	5.14	5.33	5.26	5.62	5.43	4.43	4.80	5.19	5.50	5.16	4.75	4.82
Koch	2.38	3.19	3.91	4.30	4.73	5.07	4.55	2.04	3.20	4.11	4.40	4.66	4.43	4.13
ATS	3.25	3.67	4.19	4.52	4.40	4.88	4.56	5.34	4.79	4.39	4.53	4.61	4.36	4.92



1. 7. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.02	4.91	4.85	5.20	4.99	5.09	5.37	5.43	5.16	4.85	4.93	5.03	4.80	4.80
parametric HF-adj	4.58	4.66	4.74	5.01	4.81	4.96	5.10	5.08	4.94	4.74	4.78	4.91	4.75	4.75
van der Waerden	4.54	4.41	4.41	4.50	4.74	5.24	5.35	3.60	4.09	4.56	4.62	4.56	4.91	4.92
KWF	4.54	4.41	4.41	4.50	4.74	5.24	5.35	3.60	4.09	4.56	4.62	4.56	4.91	4.92
Puri & Sen INT	4.01	4.51	4.65	4.65	5.10	5.05	4.85	4.10	4.31	4.53	4.66	5.01	4.99	4.60
Puri & Sen	4.10	4.49	4.54	4.42	5.12	5.33	5.34	4.28	4.39	4.54	4.83	5.25	5.05	5.07
INT	5.33	5.41	5.16	4.94	5.22	5.29	4.95	5.32	5.14	5.01	5.01	5.33	5.25	4.73
ART INT	5.21	5.25	5.06	5.03	5.15	5.17	5.35	5.63	5.28	4.83	4.88	5.11	4.95	4.68
Koch	3.71	3.97	4.22	4.38	4.80	5.01	4.87	2.85	3.31	3.66	4.09	4.65	4.92	4.57
ATS	6.05	5.71	5.10	4.67	5.21	5.40	5.47	9.60	7.69	6.38	5.97	5.46	5.71	5.57
large design (4*6)														
parametric	5.26	5.51	5.40	5.41	5.94	5.38	5.52	5.62	5.59	5.27	5.22	5.91	5.44	5.45
parametric HF-adj	4.65	5.00	5.12	5.24	5.77	5.16	5.30	5.10	5.14	4.90	4.89	5.65	5.12	5.05
van der Waerden	4.41	4.89	4.83	4.69	5.14	5.08	5.13	4.12	4.86	4.71	4.34	5.39	4.65	5.10
KWF	4.49	4.93	4.88	4.80	5.21	4.99	5.13	4.07	4.76	4.54	4.20	5.36	4.55	5.20
Puri & Sen INT	3.66	4.33	4.49	4.56	5.65	5.16	5.13	4.16	4.74	4.75	4.62	5.61	4.91	5.00
Puri & Sen	4.03	4.56	4.55	4.71	5.67	4.99	5.46	4.26	4.60	4.54	4.60	5.35	4.92	5.23
INT	5.01	5.30	5.05	5.04	5.94	5.38	5.43	5.21	5.49	5.34	5.09	5.89	5.16	5.27
ART INT	5.78	5.84	5.46	5.22	5.96	5.50	5.50	5.93	5.92	5.50	5.22	5.76	5.38	5.22
Koch	2.47	3.53	3.95	4.05	5.10	4.94	5.18	2.39	3.19	3.67	4.05	4.92	4.21	4.56
ATS	3.76	4.30	4.25	4.19	5.05	4.65	5.05	5.84	5.00	4.44	4.49	5.03	4.39	4.60

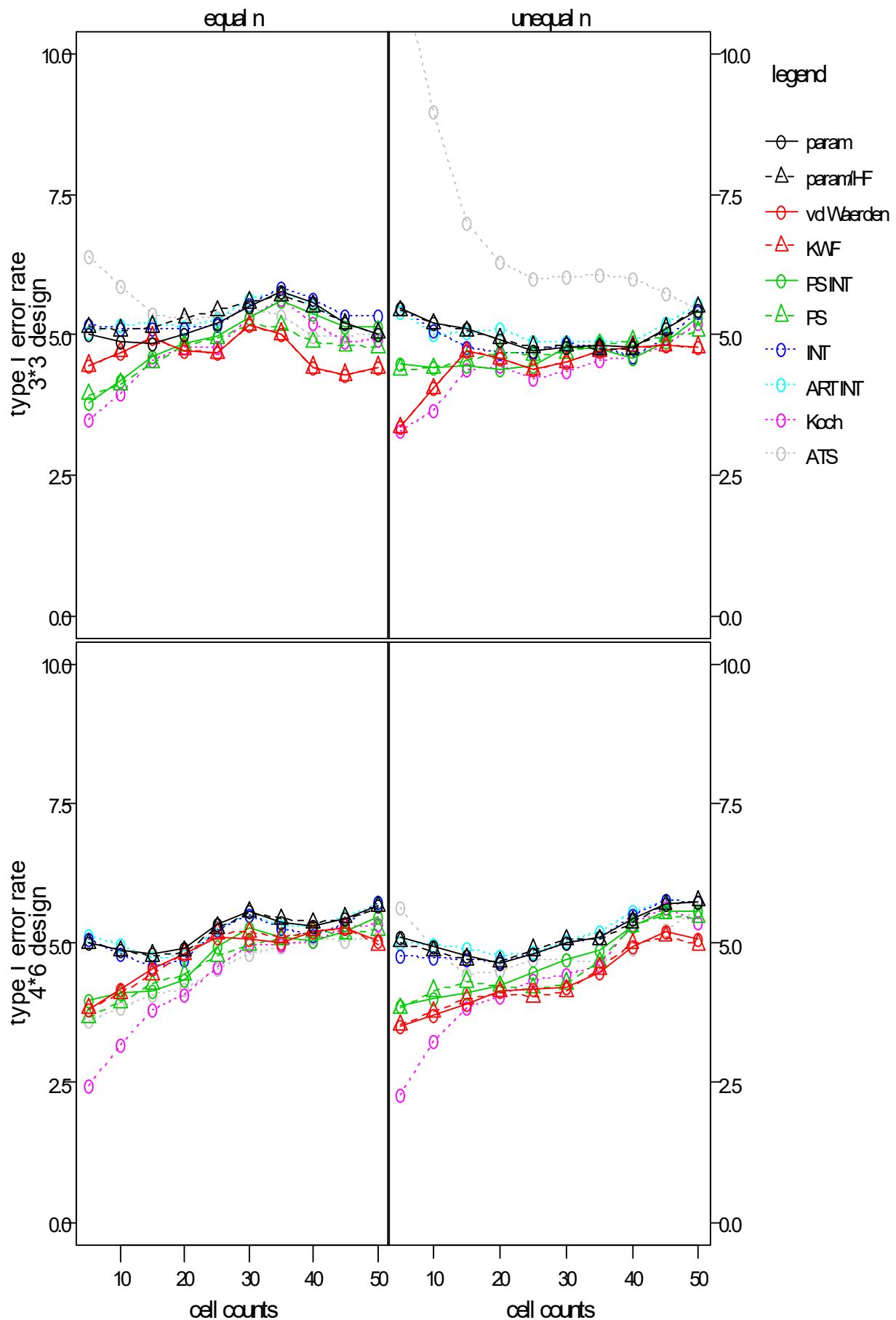


1. 8. Interaction effect AB - A significant (effects $a_i=0.5*s$)

1. 8. 1. equal correlations on B ($r=0.3$)

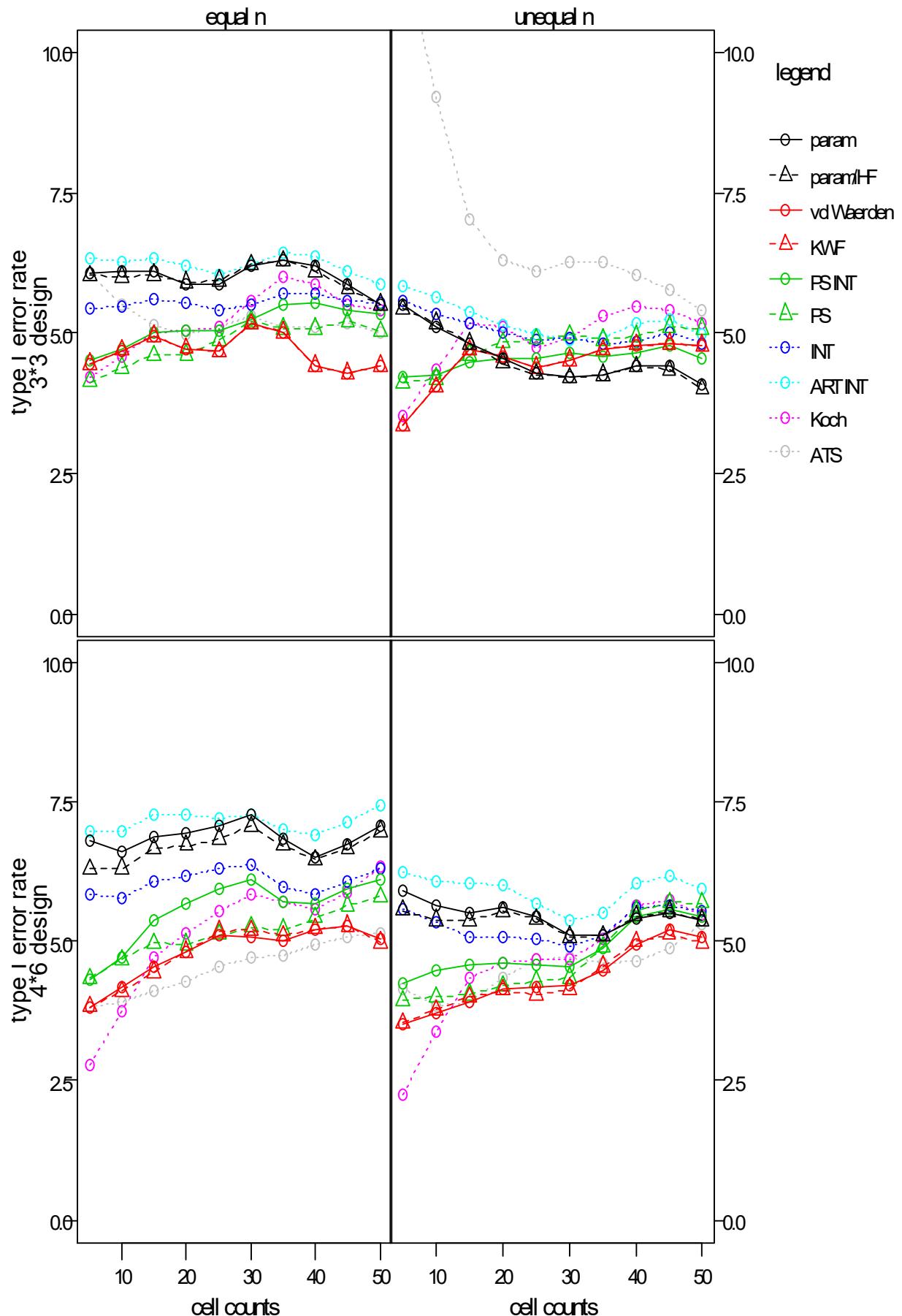
1. 8. 1. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.00	4.88	4.85	5.01	5.51	5.56	5.02	5.47	5.22	5.10	4.91	4.79	4.79	5.45
parametric HF-adj	5.13	5.08	5.14	5.29	5.57	5.51	5.02	5.42	5.20	5.06	4.92	4.80	4.74	5.49
van der Waerden	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.35	4.04	4.70	4.58	4.51	4.79	4.78
KWF	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.35	4.04	4.70	4.58	4.51	4.79	4.78
Puri & Sen INT	3.80	4.17	4.61	4.85	5.31	5.38	5.15	4.48	4.41	4.44	4.39	4.76	4.57	5.32
Puri & Sen	3.93	4.12	4.49	4.81	5.16	4.86	4.78	4.38	4.40	4.55	4.68	4.66	4.89	5.05
INT	5.17	5.11	5.11	5.11	5.53	5.62	5.35	5.47	5.08	4.78	4.66	4.85	4.62	5.40
ART INT	5.03	5.16	5.21	5.14	5.62	5.51	5.00	5.39	5.01	5.03	5.09	4.89	4.88	5.55
Koch	3.48	3.96	4.56	4.76	5.32	5.19	4.92	3.28	3.66	4.39	4.46	4.34	4.61	5.20
ATS	6.40	5.85	5.38	5.28	5.47	4.97	5.03	11.52	8.97	7.00	6.29	6.02	5.99	5.45
large design (4*6)														
parametric	5.02	4.88	4.81	4.91	5.58	5.31	5.67	5.10	4.94	4.76	4.65	5.00	5.45	5.75
parametric HF-adj	5.00	4.86	4.78	4.85	5.55	5.36	5.65	5.02	4.85	4.71	4.66	5.06	5.38	5.75
van der Waerden	3.81	4.19	4.53	4.81	5.07	5.21	5.05	3.50	3.71	3.92	4.14	4.21	4.94	5.08
KWF	3.82	4.10	4.45	4.81	5.20	5.22	4.98	3.53	3.76	4.00	4.12	4.14	4.99	4.98
Puri & Sen INT	3.97	4.10	4.14	4.33	5.26	5.05	5.47	3.87	4.01	4.12	4.24	4.70	5.29	5.58
Puri & Sen	3.67	3.94	4.26	4.44	4.97	5.20	5.24	3.83	4.14	4.31	4.22	4.28	5.30	5.45
INT	5.07	4.80	4.58	4.71	5.49	5.14	5.74	4.78	4.75	4.71	4.68	4.99	5.50	5.72
ART INT	5.13	4.96	4.74	4.78	5.49	5.31	5.70	5.00	4.96	4.90	4.78	5.03	5.56	5.73
Koch	2.46	3.17	3.81	4.06	4.97	5.05	5.35	2.29	3.23	3.84	4.03	4.45	5.33	5.38
ATS	3.62	3.83	4.06	4.19	4.81	5.10	5.10	5.62	4.86	4.45	4.51	4.71	4.90	5.60



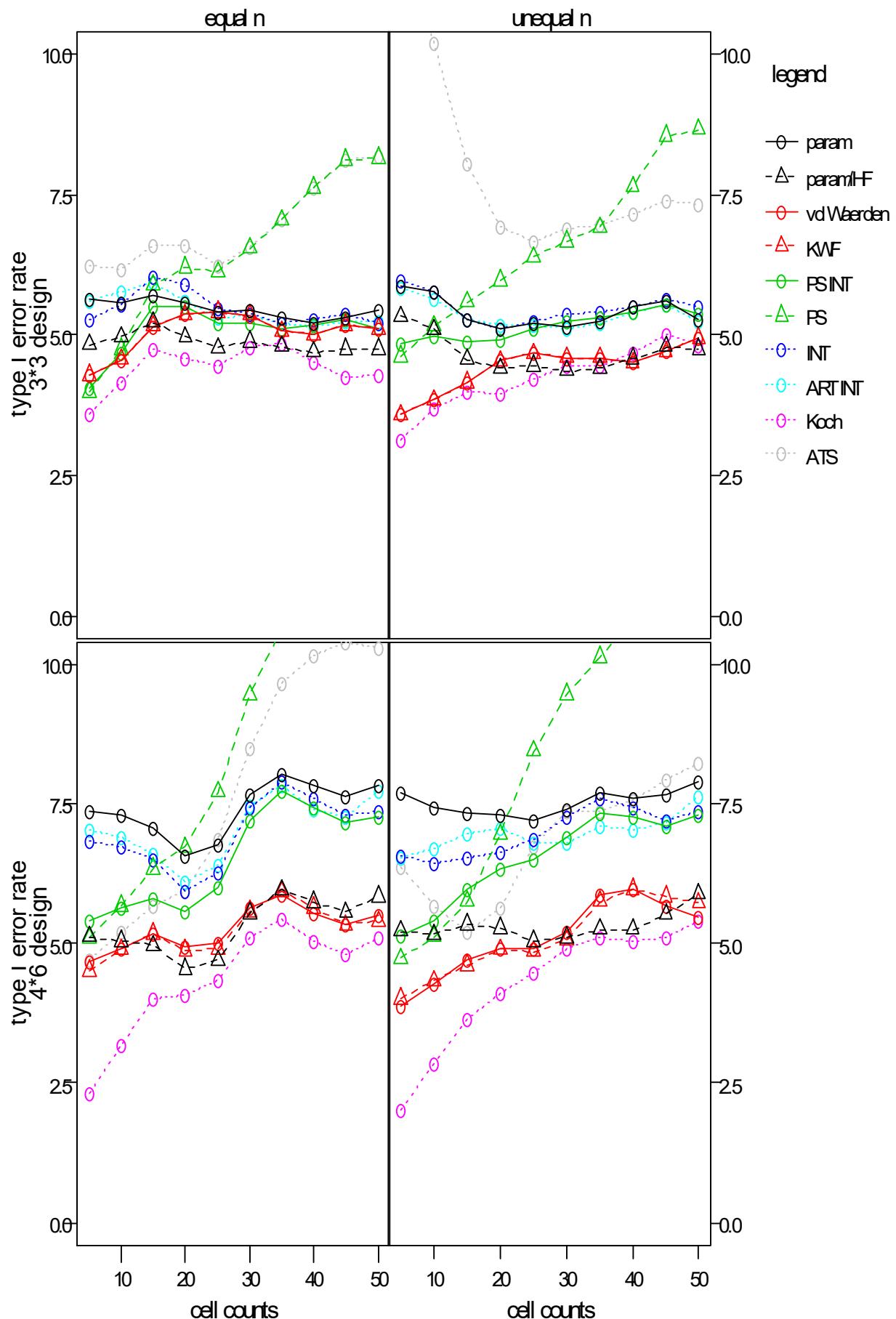
1. 8. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.07	6.10	6.10	5.86	6.19	6.19	5.50	5.50	5.12	4.80	4.53	4.22	4.41	4.08
parametric HF-adj	6.02	6.00	6.04	5.90	6.22	6.10	5.51	5.43	5.17	4.81	4.46	4.21	4.40	4.00
van der Waerden	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.35	4.04	4.70	4.58	4.51	4.79	4.78
KWF	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.35	4.04	4.70	4.58	4.51	4.79	4.78
Puri & Sen INT	4.52	4.72	5.02	5.05	5.24	5.54	5.33	4.22	4.26	4.48	4.56	4.64	4.65	4.55
Puri & Sen	4.13	4.38	4.60	4.61	5.21	5.07	5.03	4.10	4.18	4.62	4.83	4.97	4.94	5.07
INT	5.42	5.47	5.61	5.54	5.50	5.71	5.53	5.57	5.34	5.17	5.00	4.92	4.84	4.80
ART INT	6.32	6.26	6.34	6.18	6.24	6.36	5.88	5.82	5.65	5.38	5.14	4.88	5.16	4.96
Koch	4.21	4.59	5.00	5.04	5.57	5.86	5.40	3.53	4.34	5.17	5.10	4.92	5.47	5.17
ATS	6.07	5.51	5.15	4.99	5.29	5.09	5.01	11.95	9.20	7.01	6.29	6.26	6.04	5.40
large design (4*6)														
parametric	6.79	6.61	6.86	6.94	7.25	6.51	7.07	5.90	5.62	5.51	5.61	5.12	5.42	5.37
parametric HF-adj	6.29	6.31	6.66	6.71	7.06	6.46	6.97	5.55	5.38	5.36	5.53	5.07	5.45	5.38
van der Waerden	3.81	4.19	4.53	4.81	5.07	5.21	5.05	3.50	3.71	3.92	4.14	4.21	4.94	5.08
KWF	3.82	4.10	4.45	4.81	5.20	5.22	4.98	3.53	3.76	4.00	4.12	4.14	4.99	4.98
Puri & Sen INT	4.32	4.72	5.38	5.66	6.10	5.66	6.10	4.23	4.49	4.59	4.60	4.54	5.45	5.45
Puri & Sen	4.33	4.66	4.96	4.94	5.25	5.42	5.79	3.93	4.00	4.05	4.20	4.35	5.54	5.68
INT	5.85	5.76	6.06	6.18	6.38	5.83	6.30	5.58	5.34	5.08	5.06	4.89	5.59	5.55
ART INT	6.97	6.95	7.27	7.26	7.26	6.90	7.42	6.23	6.08	6.04	5.99	5.38	6.04	5.95
Koch	2.78	3.74	4.72	5.14	5.84	5.56	6.35	2.24	3.38	4.34	4.61	4.67	5.64	5.46
ATS	3.82	3.91	4.12	4.29	4.70	4.94	5.13	4.15	3.84	3.91	4.34	4.72	4.65	5.32



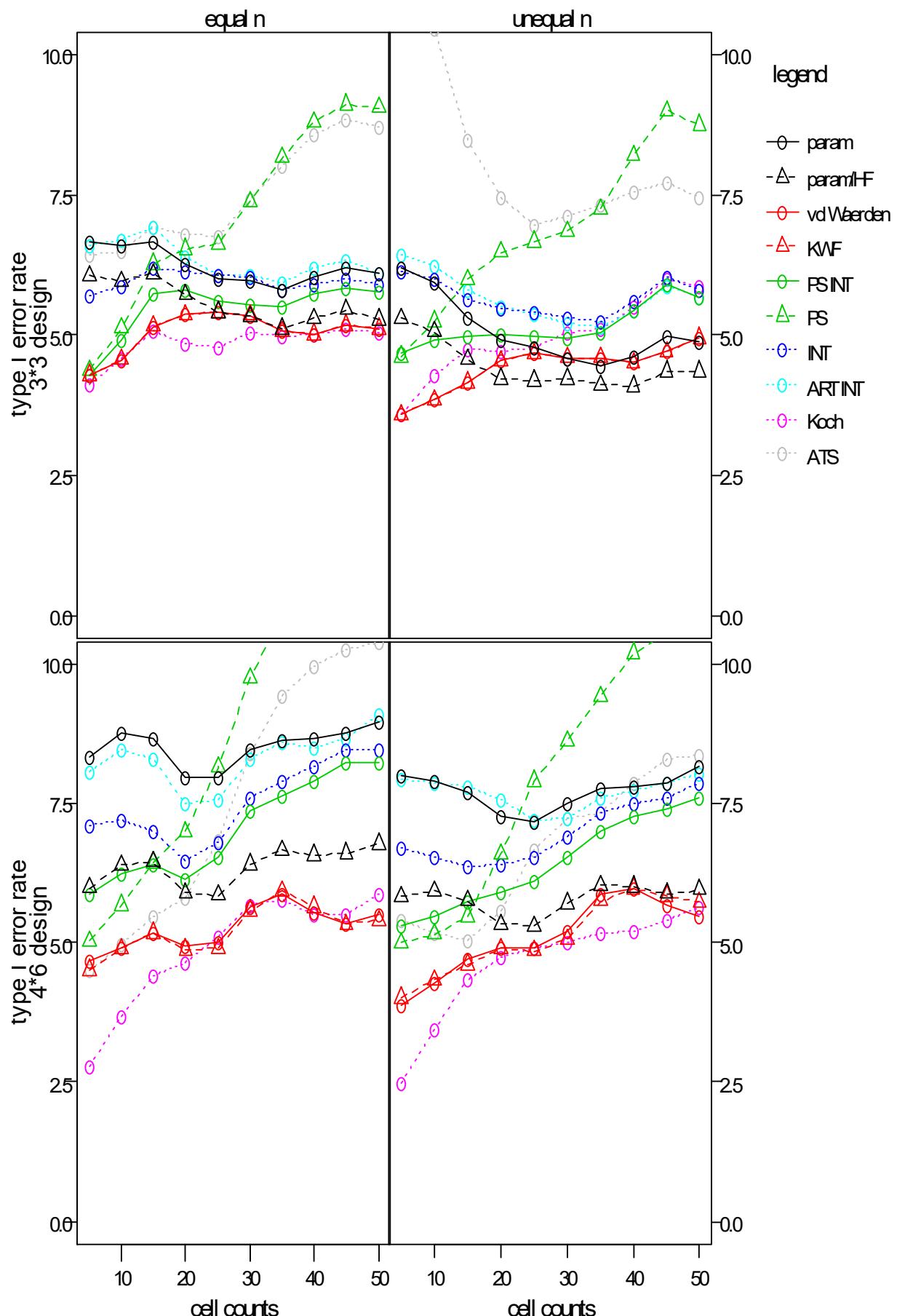
1. 8. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.62	5.57	5.71	5.58	5.44	5.19	5.42	5.85	5.75	5.27	5.11	5.14	5.49	5.28
parametric HF-adj	4.82	4.97	5.22	4.96	4.88	4.69	4.75	5.33	5.10	4.56	4.40	4.36	4.58	4.75
van der Waerden	4.28	4.56	5.15	5.36	5.35	5.01	5.11	3.58	3.84	4.15	4.54	4.59	4.50	4.95
KWF	4.28	4.56	5.15	5.36	5.35	5.01	5.11	3.58	3.84	4.15	4.54	4.59	4.50	4.95
Puri & Sen INT	4.05	4.69	5.49	5.49	5.21	5.16	5.11	4.83	4.96	4.86	4.90	5.25	5.41	5.36
Puri & Sen	3.98	4.75	5.88	6.20	6.54	7.62	8.15	4.61	5.15	5.58	5.97	6.66	7.64	8.65
INT	5.27	5.52	6.03	5.89	5.36	5.26	5.20	5.95	5.76	5.28	5.12	5.36	5.50	5.51
ART INT	5.60	5.75	5.92	5.59	5.34	5.15	5.23	5.83	5.64	5.26	5.16	5.11	5.41	5.25
Koch	3.60	4.14	4.75	4.59	4.76	4.52	4.29	3.13	3.69	3.97	3.96	4.46	4.68	4.81
ATS	6.22	6.15	6.59	6.58	6.56	7.62	8.17	12.21	10.19	8.06	6.92	6.88	7.15	7.31
large design (4*6)														
parametric	7.37	7.30	7.08	6.56	7.66	7.83	7.84	7.69	7.44	7.32	7.30	7.40	7.60	7.88
parametric HF-adj	5.12	5.04	4.96	4.55	5.54	5.74	5.84	5.22	5.16	5.34	5.28	5.11	5.25	5.88
van der Waerden	4.68	4.92	5.16	4.94	5.65	5.54	5.52	3.88	4.29	4.70	4.92	5.21	5.96	5.47
KWF	4.51	4.90	5.17	4.88	5.58	5.64	5.40	4.01	4.33	4.61	4.90	5.06	5.97	5.73
Puri & Sen INT	5.40	5.64	5.81	5.57	7.19	7.44	7.27	5.15	5.40	5.96	6.32	6.90	7.26	7.29
Puri & Sen	5.10	5.67	6.34	6.72	9.45	11.21	11.56	4.73	5.12	5.75	6.95	9.46	10.80	11.55
INT	6.84	6.74	6.49	5.94	7.42	7.59	7.35	6.57	6.45	6.53	6.64	7.26	7.43	7.37
ART INT	7.02	6.91	6.60	6.09	7.45	7.41	7.72	6.53	6.69	6.97	7.06	6.81	7.02	7.62
Koch	2.33	3.19	4.01	4.08	5.09	5.05	5.09	2.03	2.85	3.65	4.11	4.90	5.03	5.40
ATS	4.71	5.19	5.68	5.92	8.51	10.14	10.28	6.37	5.66	5.19	5.65	7.36	7.56	8.24



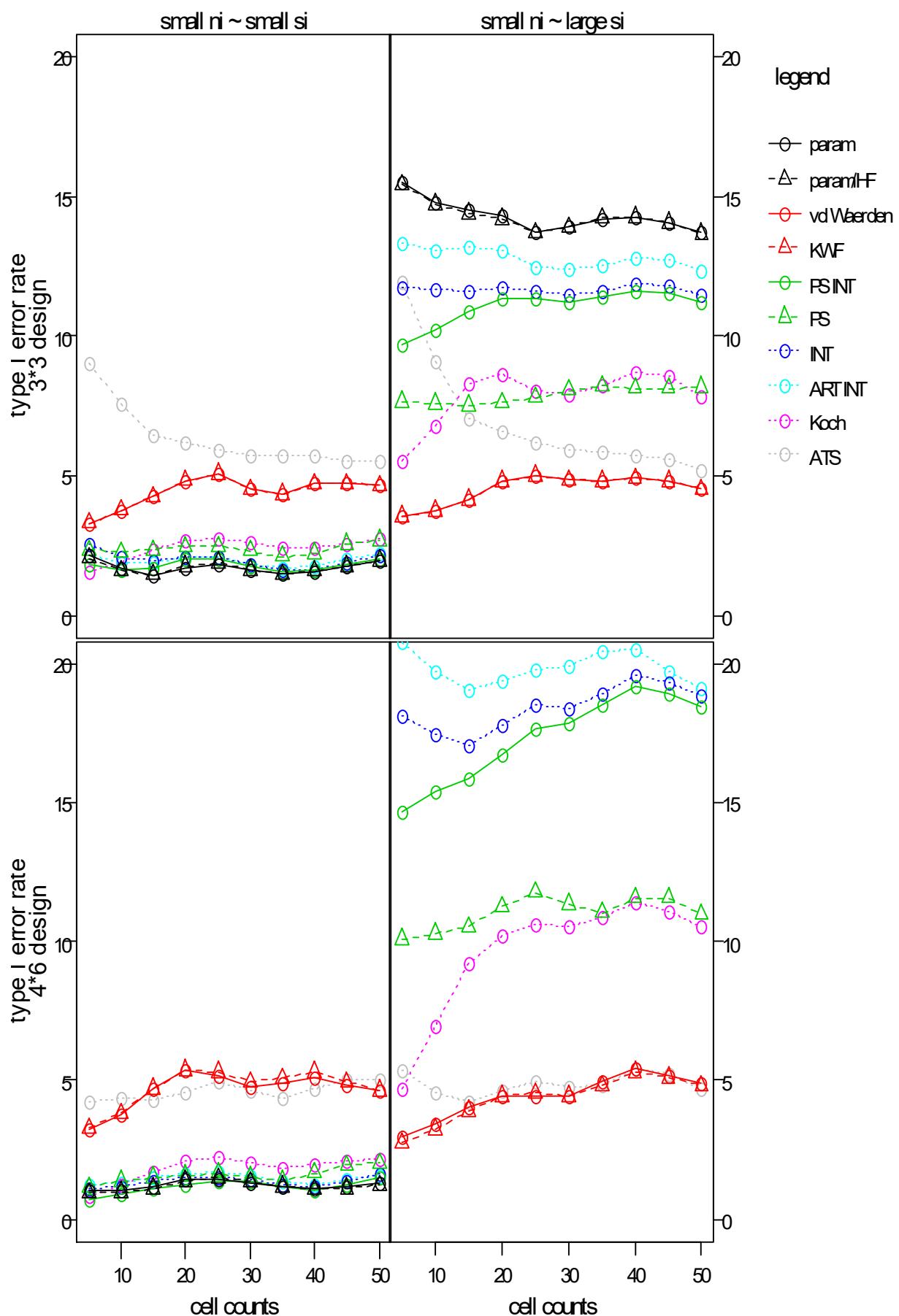
1. 8. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.65	6.59	6.65	6.25	5.97	6.03	6.10	6.20	5.92	5.31	4.90	4.59	4.62	4.86
parametric HF-adj	6.05	5.96	6.09	5.72	5.33	5.30	5.28	5.30	5.05	4.56	4.22	4.22	4.09	4.35
van der Waerden	4.28	4.56	5.15	5.36	5.35	5.01	5.11	3.58	3.84	4.15	4.54	4.59	4.50	4.95
KWF	4.28	4.56	5.15	5.36	5.35	5.01	5.11	3.58	3.84	4.15	4.54	4.59	4.50	4.95
Puri & Sen INT	4.28	4.91	5.72	5.80	5.55	5.72	5.75	4.68	4.90	4.96	5.01	4.93	5.45	5.66
Puri & Sen	4.37	5.12	6.26	6.53	7.38	8.79	9.05	4.61	5.24	5.99	6.47	6.85	8.20	8.74
INT	5.70	5.85	6.20	6.12	6.03	5.91	5.90	6.13	5.99	5.62	5.46	5.29	5.59	5.79
ART INT	6.60	6.69	6.91	6.41	6.07	6.20	6.10	6.43	6.24	5.81	5.51	5.20	5.44	5.68
Koch	4.10	4.58	5.06	4.84	5.03	5.00	5.05	3.60	4.28	4.75	4.71	5.04	5.51	5.86
ATS	6.42	6.49	6.91	6.78	7.42	8.56	8.72	12.72	10.46	8.47	7.46	7.11	7.54	7.45
large design (4*6)														
parametric	8.33	8.77	8.65	7.96	8.46	8.65	8.95	8.00	7.90	7.68	7.25	7.50	7.78	8.17
parametric HF-adj	5.98	6.39	6.45	5.89	6.41	6.57	6.77	5.82	5.93	5.75	5.33	5.70	6.01	5.95
van der Waerden	4.68	4.92	5.16	4.94	5.65	5.54	5.52	3.88	4.29	4.70	4.92	5.21	5.96	5.47
KWF	4.51	4.90	5.17	4.88	5.58	5.64	5.40	4.01	4.33	4.61	4.90	5.06	5.97	5.73
Puri & Sen INT	5.87	6.22	6.41	6.14	7.35	7.91	8.22	5.30	5.47	5.74	5.91	6.52	7.25	7.60
Puri & Sen	5.03	5.67	6.44	6.99	9.75	11.41	11.88	5.00	5.15	5.47	6.59	8.62	10.19	10.90
INT	7.10	7.20	7.00	6.47	7.60	8.17	8.47	6.70	6.54	6.38	6.39	6.90	7.49	7.85
ART INT	8.05	8.45	8.28	7.50	8.31	8.48	9.10	7.93	7.86	7.78	7.56	7.24	7.74	8.02
Koch	2.78	3.66	4.42	4.65	5.66	5.51	5.87	2.48	3.46	4.34	4.74	5.00	5.21	5.65
ATS	4.51	4.96	5.47	5.80	8.39	9.96	10.40	5.40	5.16	5.04	5.58	7.23	7.85	8.37



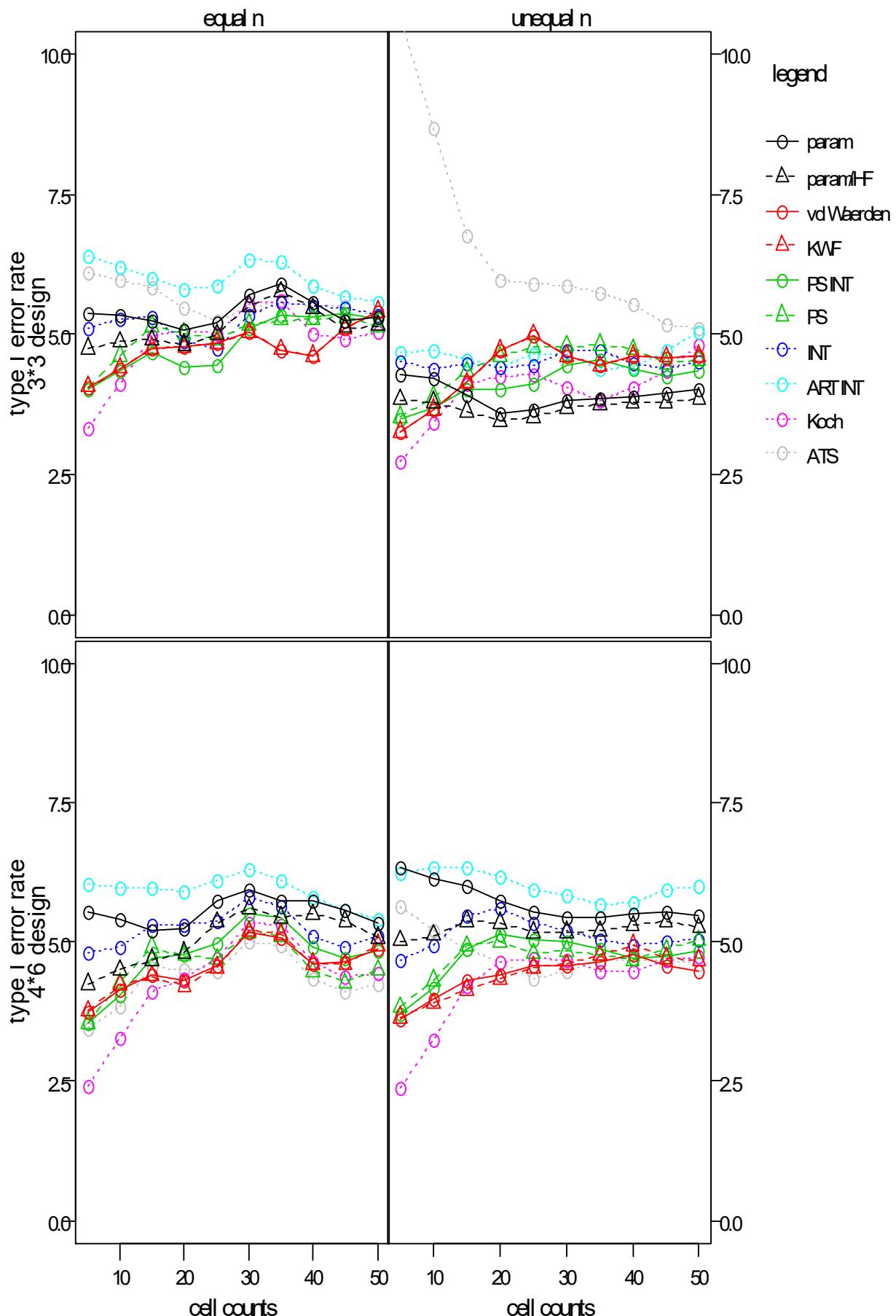
1. 8. 1. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.15	1.68	1.45	1.70	1.62	1.56	1.95	15.49	14.75	14.52	14.29	13.93	14.25	13.68
parametric HF-adj	2.05	1.60	1.45	1.76	1.64	1.59	1.95	15.40	14.71	14.39	14.18	13.89	14.25	13.65
van der Waerden	3.30	3.76	4.25	4.82	4.50	4.70	4.65	3.55	3.75	4.15	4.79	4.83	4.91	4.51
KWF	3.30	3.76	4.25	4.82	4.50	4.70	4.65	3.55	3.75	4.15	4.79	4.83	4.91	4.51
Puri & Sen INT	1.85	1.63	1.70	2.00	1.75	1.60	2.04	9.65	10.22	10.90	11.34	11.21	11.62	11.20
Puri & Sen	2.32	2.26	2.33	2.45	2.31	2.23	2.68	7.65	7.58	7.50	7.62	8.06	8.12	8.18
INT	2.52	2.09	1.94	2.10	1.85	1.62	2.12	11.75	11.64	11.60	11.70	11.46	11.86	11.46
ART INT	2.15	1.88	1.89	2.09	1.85	1.76	2.22	13.34	13.05	13.16	13.08	12.38	12.76	12.31
Koch	1.55	1.91	2.38	2.65	2.59	2.39	2.77	5.51	6.79	8.32	8.64	7.90	8.70	7.81
ATS	9.03	7.55	6.42	6.19	5.71	5.70	5.50	11.90	9.06	7.05	6.60	5.95	5.69	5.21
large design (4*6)														
parametric	1.03	1.04	1.19	1.43	1.32	1.09	1.28	24.95	23.33	22.24	22.61	23.15	24.29	22.72
parametric HF-adj	0.95	0.97	1.12	1.39	1.35	1.08	1.23	24.50	22.91	21.86	22.36	22.84	24.10	22.63
van der Waerden	3.21	3.74	4.70	5.35	4.78	5.10	4.65	2.95	3.42	4.04	4.44	4.41	5.40	4.88
KWF	3.28	3.80	4.69	5.36	4.93	5.30	4.63	2.75	3.23	3.91	4.44	4.44	5.31	4.82
Puri & Sen INT	0.73	0.89	1.10	1.27	1.35	1.04	1.52	14.63	15.36	15.86	16.71	17.86	19.18	18.46
Puri & Sen	1.15	1.39	1.52	1.59	1.51	1.67	2.03	10.08	10.28	10.52	11.24	11.34	11.56	10.98
INT	1.13	1.19	1.39	1.50	1.46	1.19	1.62	18.15	17.46	17.06	17.81	18.41	19.60	18.83
ART INT	1.25	1.30	1.48	1.65	1.57	1.26	1.60	20.78	19.68	19.05	19.38	19.93	20.54	19.12
Koch	0.86	1.27	1.72	2.09	2.01	1.95	2.15	4.69	6.94	9.20	10.20	10.53	11.41	10.57
ATS	4.25	4.33	4.31	4.56	4.64	4.69	5.03	5.37	4.56	4.20	4.65	4.75	5.40	4.68



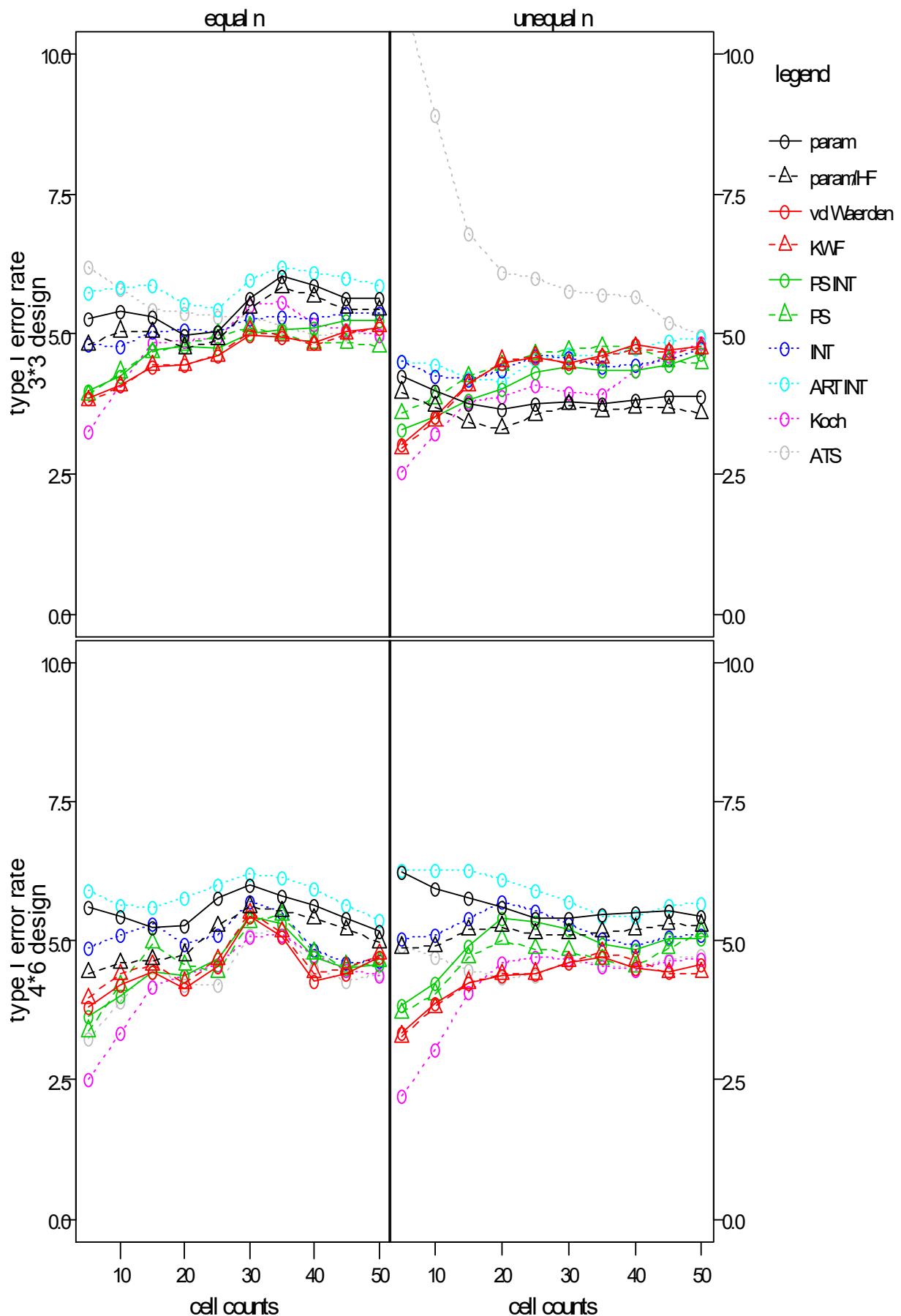
1. 8. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.38	5.35	5.25	5.07	5.70	5.56	5.30	4.28	4.21	3.93	3.58	3.83	3.90	4.03
parametric HF-adj	4.75	4.86	4.90	4.81	5.50	5.46	5.15	3.83	3.79	3.62	3.44	3.69	3.77	3.85
van der Waerden	4.06	4.39	4.74	4.78	5.03	4.62	5.40	3.26	3.65	4.14	4.71	4.61	4.61	4.62
KWF	4.06	4.39	4.74	4.78	5.03	4.62	5.40	3.26	3.65	4.14	4.71	4.61	4.61	4.62
Puri & Sen INT	4.00	4.36	4.68	4.41	5.09	5.30	5.26	3.50	3.70	4.00	4.01	4.44	4.38	4.34
Puri & Sen	4.06	4.61	5.14	5.01	5.17	5.28	5.13	3.52	3.89	4.34	4.60	4.79	4.73	4.55
INT	5.10	5.26	5.31	4.86	5.35	5.49	5.33	4.50	4.38	4.48	4.41	4.70	4.49	4.50
ART INT	6.38	6.19	6.01	5.79	6.34	5.85	5.57	4.68	4.72	4.56	4.41	4.64	4.42	5.05
Koch	3.31	4.11	4.99	5.08	5.55	5.01	5.05	2.73	3.43	4.11	4.24	4.04	4.04	4.80
ATS	6.10	5.98	5.84	5.46	5.47	5.51	5.31	10.66	8.67	6.75	5.96	5.86	5.55	5.10
large design (4*6)														
parametric	5.54	5.39	5.20	5.23	5.94	5.72	5.33	6.35	6.15	5.99	5.74	5.45	5.49	5.47
parametric HF-adj	4.25	4.50	4.68	4.81	5.60	5.49	5.08	5.02	5.12	5.38	5.34	5.18	5.29	5.26
van der Waerden	3.75	4.15	4.41	4.31	5.16	4.62	4.87	3.61	3.99	4.30	4.42	4.58	4.77	4.47
KWF	3.76	4.22	4.39	4.21	5.20	4.61	4.94	3.65	3.90	4.14	4.33	4.60	4.94	4.67
Puri & Sen INT	3.53	4.04	4.70	4.76	5.52	4.91	4.85	3.71	4.18	4.86	5.15	5.01	4.71	4.83
Puri & Sen	3.55	4.26	4.91	4.75	5.16	4.47	4.50	3.83	4.31	4.93	5.01	4.84	4.67	5.03
INT	4.82	4.89	5.30	5.30	5.81	5.10	5.09	4.67	4.93	5.47	5.61	5.20	4.95	5.03
ART INT	6.02	5.97	5.96	5.89	6.30	5.79	5.42	6.25	6.32	6.34	6.16	5.82	5.69	6.00
Koch	2.41	3.29	4.12	4.35	5.34	4.65	4.43	2.38	3.24	4.21	4.65	4.66	4.46	4.73
ATS	3.43	3.85	4.53	4.50	5.00	4.35	4.25	5.64	5.19	4.86	4.65	4.47	4.67	4.60



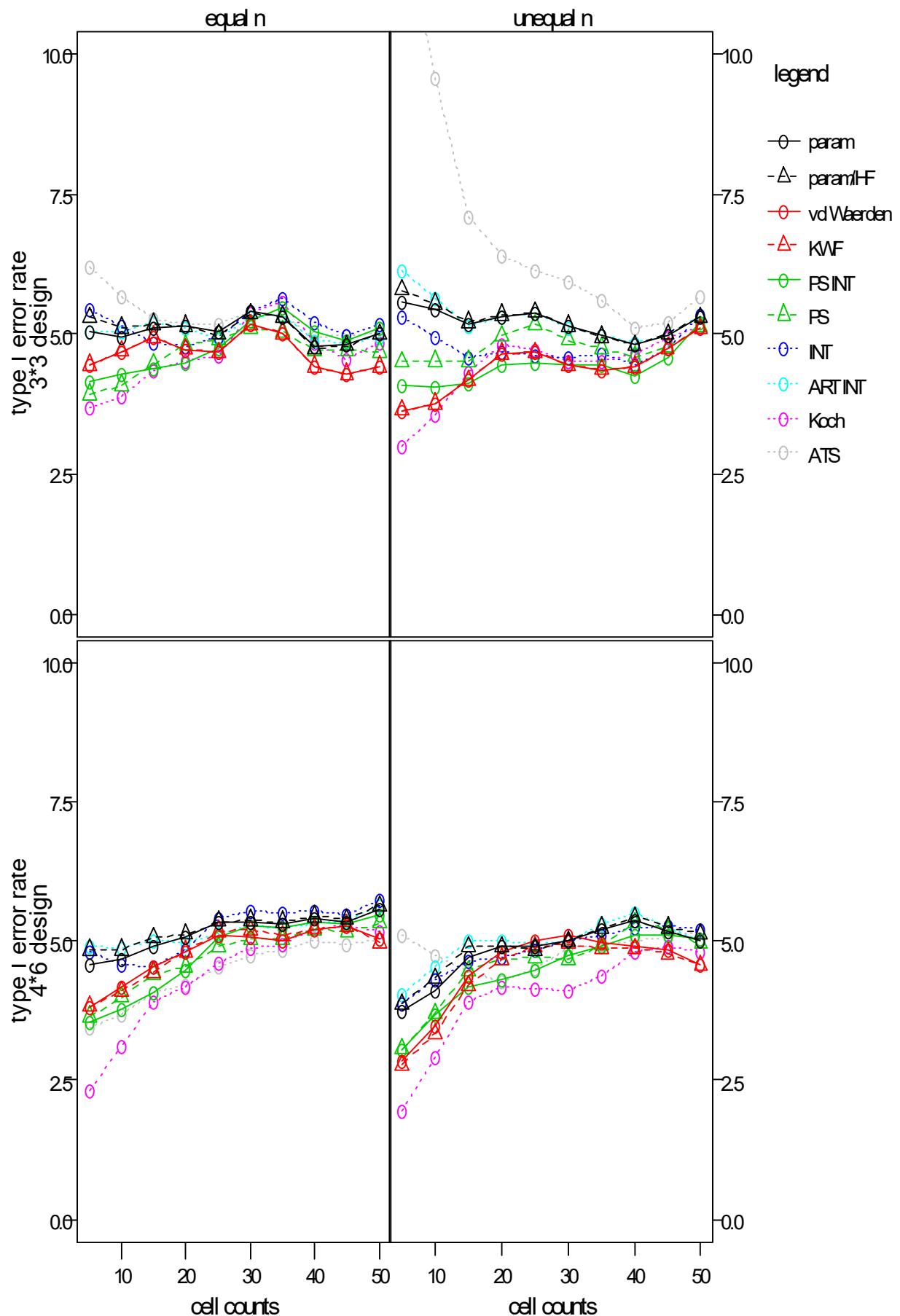
1. 8. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.28	5.39	5.31	4.99	5.64	5.88	5.63	4.25	3.98	3.74	3.64	3.80	3.82	3.88
parametric HF-adj	4.80	5.04	5.03	4.74	5.47	5.66	5.43	3.95	3.70	3.41	3.30	3.73	3.68	3.58
van der Waerden	3.85	4.09	4.41	4.45	4.99	4.83	5.10	3.01	3.51	4.11	4.49	4.47	4.80	4.77
KWF	3.80	4.06	4.43	4.45	5.05	4.79	5.12	2.95	3.44	4.08	4.51	4.46	4.75	4.74
Puri & Sen INT	3.98	4.25	4.70	4.76	5.01	5.09	5.23	3.28	3.53	3.81	4.03	4.40	4.36	4.65
Puri & Sen	3.91	4.31	4.66	4.80	5.12	4.85	4.77	3.57	3.85	4.24	4.44	4.70	4.74	4.48
INT	4.80	4.78	5.04	5.08	5.27	5.26	5.38	4.50	4.26	4.19	4.36	4.57	4.45	4.75
ART INT	5.73	5.82	5.86	5.53	5.96	6.09	5.88	4.52	4.44	4.22	4.16	4.64	4.75	4.95
Koch	3.24	4.09	4.83	4.86	5.50	5.18	4.96	2.53	3.23	3.80	3.89	3.96	4.33	4.84
ATS	6.19	5.79	5.45	5.36	5.30	4.99	5.02	11.16	8.91	6.80	6.11	5.76	5.66	4.98
large design (4*6)														
parametric	5.60	5.44	5.24	5.28	6.01	5.65	5.18	6.22	5.95	5.77	5.60	5.41	5.51	5.43
parametric HF-adj	4.42	4.60	4.65	4.74	5.61	5.40	4.97	4.87	4.90	5.19	5.25	5.12	5.21	5.27
van der Waerden	3.82	4.21	4.44	4.15	5.44	4.26	4.70	3.36	3.86	4.24	4.36	4.61	4.50	4.58
KWF	3.96	4.40	4.56	4.24	5.49	4.42	4.75	3.28	3.80	4.24	4.40	4.62	4.64	4.42
Puri & Sen INT	3.65	4.00	4.43	4.36	5.43	4.70	4.58	3.83	4.24	4.91	5.40	5.19	4.85	5.05
Puri & Sen	3.38	4.20	4.95	4.56	5.34	4.78	4.62	3.70	4.05	4.69	5.02	4.82	4.53	5.15
INT	4.88	5.12	5.29	4.95	5.70	4.85	4.65	5.03	5.10	5.41	5.70	5.31	4.91	5.12
ART INT	5.89	5.65	5.61	5.76	6.19	5.94	5.38	6.27	6.26	6.28	6.09	5.70	5.44	5.67
Koch	2.53	3.33	4.16	4.39	5.06	4.75	4.38	2.23	3.05	4.06	4.62	4.68	4.49	4.68
ATS	3.26	3.92	4.53	4.21	5.11	4.50	4.40	4.92	4.69	4.47	4.35	4.64	4.52	4.73



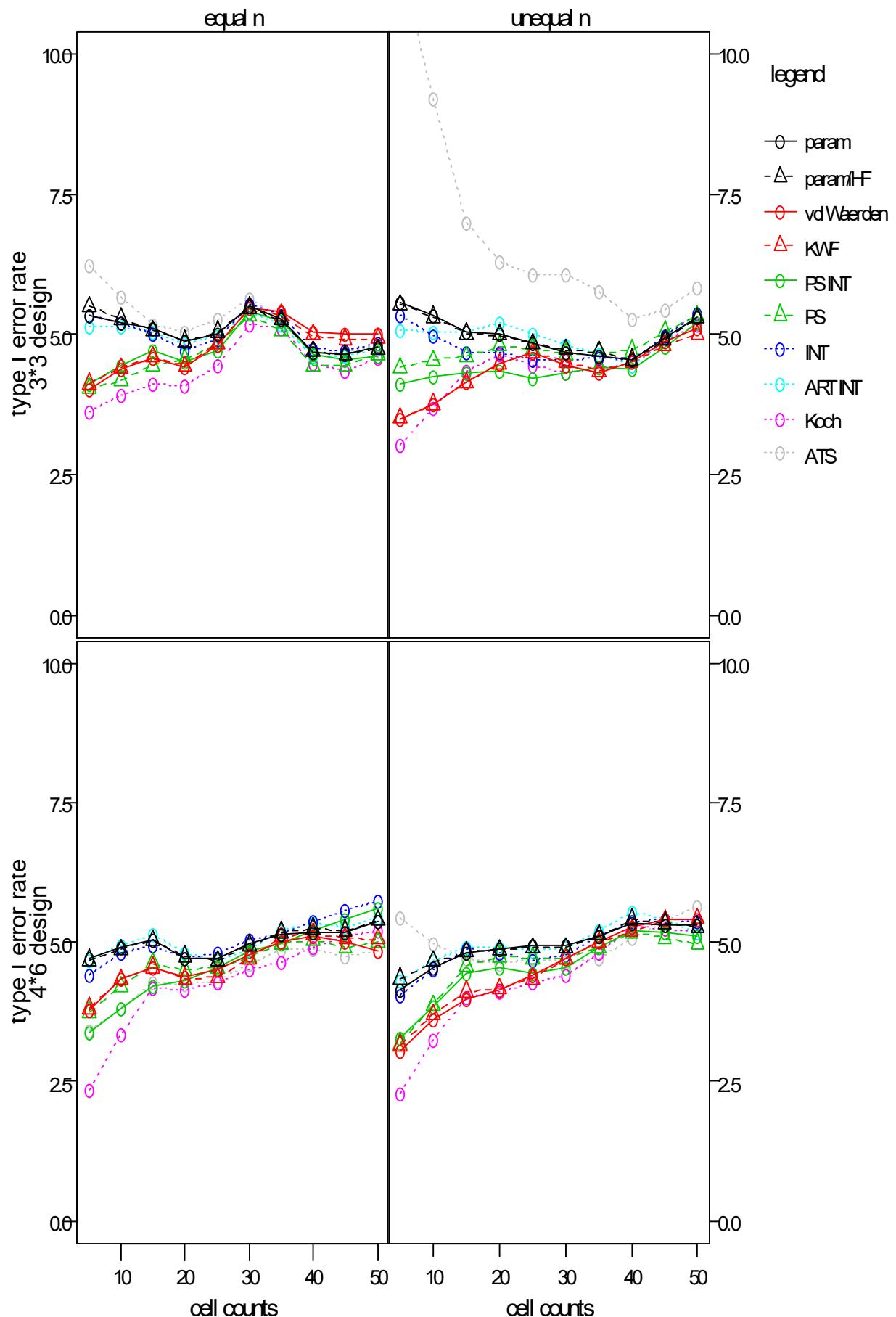
1. 8. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.03	4.94	5.09	5.14	5.40	4.76	5.00	5.58	5.42	5.17	5.31	5.15	4.80	5.29
parametric HF-adj	5.29	5.11	5.17	5.14	5.36	4.75	5.00	5.78	5.54	5.21	5.34	5.14	4.80	5.30
van der Waerden	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.63	3.75	4.17	4.65	4.44	4.42	5.10
KWF	4.45	4.69	4.95	4.72	5.16	4.42	4.42	3.63	3.75	4.17	4.65	4.44	4.42	5.10
Puri & Sen INT	4.15	4.29	4.38	4.49	5.24	5.05	5.12	4.08	4.06	4.10	4.44	4.44	4.24	5.19
Puri & Sen	3.92	4.09	4.46	4.80	5.11	4.71	4.68	4.50	4.51	4.51	4.97	4.89	4.59	5.12
INT	5.43	5.15	4.83	4.78	5.40	5.19	5.17	5.32	4.93	4.59	4.69	4.57	4.45	5.34
ART INT	5.05	5.05	5.21	5.11	5.31	4.86	4.95	6.12	5.62	5.14	5.31	5.12	4.83	5.34
Koch	3.68	3.89	4.34	4.50	5.36	4.84	4.84	3.00	3.54	4.30	4.80	4.50	4.64	5.13
ATS	6.19	5.67	5.26	5.17	5.41	4.94	5.02	12.55	9.56	7.10	6.41	5.94	5.11	5.67
large design (4*6)														
parametric	4.59	4.66	4.92	5.07	5.34	5.42	5.57	3.73	4.12	4.72	4.89	4.99	5.38	5.00
parametric HF-adj	4.84	4.84	5.06	5.12	5.38	5.44	5.62	3.87	4.33	4.90	4.89	4.99	5.43	5.13
van der Waerden	3.81	4.19	4.53	4.81	5.07	5.21	5.05	2.83	3.47	4.38	4.81	5.09	4.91	4.58
KWF	3.82	4.10	4.45	4.81	5.20	5.22	4.98	2.77	3.34	4.20	4.67	4.95	4.86	4.57
Puri & Sen INT	3.53	3.76	4.09	4.47	5.27	5.35	5.47	3.05	3.66	4.19	4.30	4.74	5.09	5.03
Puri & Sen	3.65	3.99	4.41	4.55	5.03	5.19	5.32	3.06	3.70	4.46	4.68	4.67	5.33	4.95
INT	4.80	4.57	4.53	4.84	5.55	5.54	5.72	3.88	4.30	4.65	4.72	5.00	5.25	5.20
ART INT	4.89	4.88	5.01	4.98	5.26	5.31	5.65	4.03	4.53	5.00	5.01	4.99	5.49	5.02
Koch	2.30	3.11	3.92	4.19	4.86	5.25	5.17	1.96	2.92	3.91	4.18	4.11	4.79	4.80
ATS	3.43	3.69	4.08	4.21	4.75	5.00	5.04	5.12	4.74	4.45	4.26	4.88	5.00	5.18



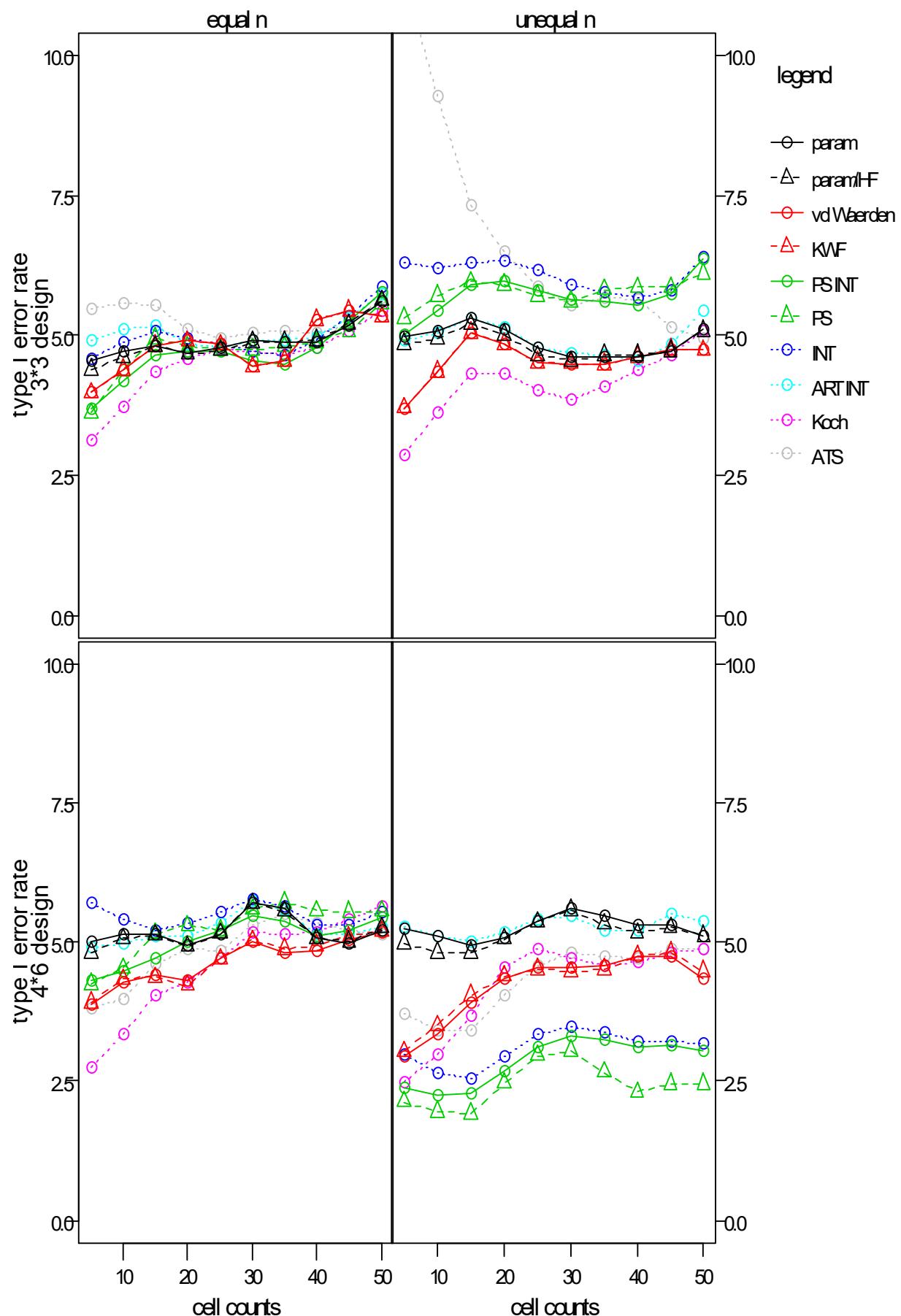
1. 8. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.34	5.21	5.10	4.86	5.51	4.69	4.77	5.58	5.35	5.03	5.01	4.69	4.54	5.30
parametric HF-adj	5.49	5.28	5.06	4.88	5.47	4.69	4.73	5.53	5.31	5.01	4.99	4.72	4.55	5.30
van der Waerden	4.03	4.38	4.58	4.41	5.47	5.05	5.02	3.48	3.76	4.14	4.49	4.46	4.50	5.10
KWF	4.12	4.40	4.59	4.44	5.45	4.99	4.92	3.50	3.76	4.14	4.47	4.51	4.50	5.00
Puri & Sen INT	4.10	4.46	4.71	4.50	5.39	4.65	4.62	4.13	4.25	4.30	4.34	4.30	4.38	5.20
Puri & Sen	4.03	4.19	4.44	4.56	5.33	4.44	4.65	4.40	4.54	4.60	4.79	4.65	4.71	5.33
INT	5.35	5.19	5.01	4.71	5.55	4.74	4.83	5.33	4.99	4.66	4.67	4.53	4.53	5.37
ART INT	5.13	5.14	5.05	4.85	5.41	4.61	4.75	5.08	5.03	5.03	5.19	4.81	4.44	5.35
Koch	3.63	3.92	4.10	4.09	5.18	4.47	4.58	3.04	3.69	4.33	4.64	4.32	4.46	5.17
ATS	6.24	5.66	5.18	5.03	5.62	4.66	4.82	11.61	9.21	6.99	6.29	6.05	5.26	5.84
large design (4*6)														
parametric	4.72	4.91	5.03	4.70	4.97	5.17	5.37	4.15	4.55	4.81	4.86	4.93	5.34	5.32
parametric HF-adj	4.67	4.86	5.03	4.74	4.94	5.24	5.40	4.35	4.65	4.82	4.86	4.89	5.41	5.28
van der Waerden	3.76	4.33	4.55	4.36	4.78	5.09	4.83	3.06	3.60	3.96	4.15	4.69	5.28	5.40
KWF	3.81	4.33	4.55	4.35	4.70	5.14	5.05	3.15	3.70	4.11	4.16	4.69	5.21	5.42
Puri & Sen INT	3.38	3.80	4.21	4.30	4.84	5.19	5.60	3.28	3.85	4.43	4.55	4.55	5.19	5.12
Puri & Sen	3.75	4.20	4.62	4.51	4.74	5.03	4.99	3.18	3.86	4.58	4.74	4.71	5.16	4.98
INT	4.40	4.79	4.95	4.70	5.05	5.38	5.75	4.05	4.51	4.86	4.81	4.76	5.38	5.38
ART INT	4.68	4.94	5.14	4.81	4.88	5.33	5.44	4.31	4.67	4.92	4.90	4.89	5.55	5.17
Koch	2.34	3.35	4.19	4.15	4.50	4.92	5.22	2.29	3.26	4.01	4.12	4.40	5.26	5.17
ATS	3.40	3.81	4.26	4.24	4.61	4.86	4.84	5.44	4.97	4.70	4.61	4.64	5.08	5.65



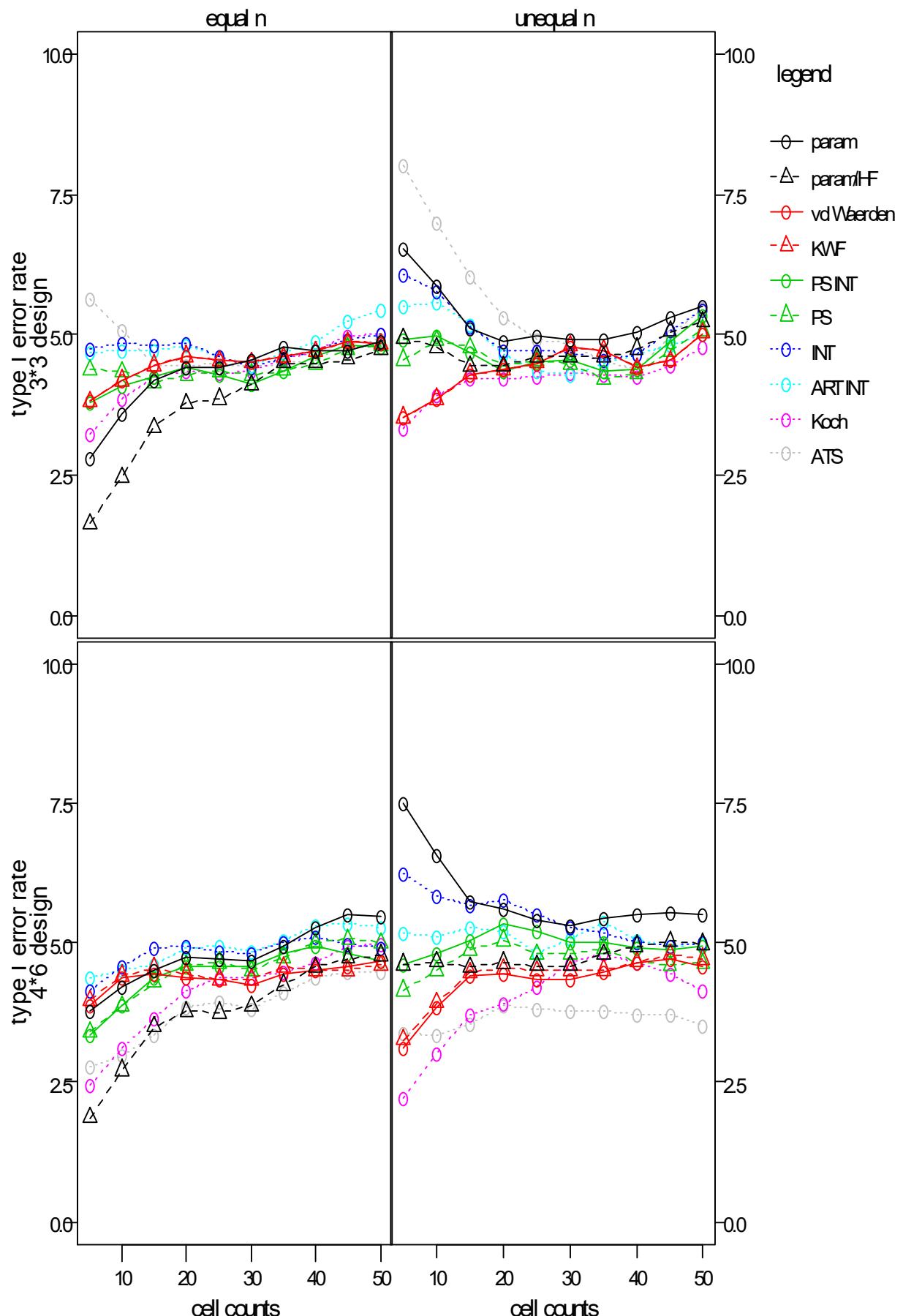
1. 8. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.53	4.71	4.81	4.67	4.91	4.88	5.60	4.99	5.06	5.29	5.11	4.60	4.61	5.10
parametric HF-adj	4.38	4.61	4.80	4.67	4.88	4.91	5.62	4.85	4.95	5.20	5.01	4.54	4.65	5.07
van der Waerden	3.97	4.38	4.81	4.90	4.44	5.28	5.33	3.70	4.35	5.04	4.84	4.49	4.62	4.73
KWF	3.97	4.38	4.81	4.90	4.44	5.28	5.33	3.70	4.35	5.04	4.84	4.49	4.62	4.73
Puri & Sen INT	3.70	4.19	4.65	4.72	4.55	4.77	5.77	5.02	5.42	5.90	5.95	5.64	5.55	6.36
Puri & Sen	3.61	4.38	4.95	4.80	4.75	4.86	5.57	5.31	5.70	5.95	5.90	5.60	5.86	6.10
INT	4.57	4.88	5.06	4.93	4.71	4.91	5.87	6.29	6.20	6.31	6.34	5.90	5.67	6.39
ART INT	4.92	5.11	5.17	4.85	4.90	4.99	5.74	4.90	5.05	5.31	5.14	4.66	4.56	5.42
Koch	3.11	3.71	4.35	4.57	4.71	4.79	5.44	2.86	3.61	4.31	4.31	3.84	4.39	5.07
ATS	5.47	5.56	5.53	5.09	5.04	5.05	5.67	11.38	9.26	7.33	6.48	5.54	5.64	4.95
large design (4*6)														
parametric	5.00	5.14	5.15	4.93	5.71	5.06	5.22	5.23	5.10	4.95	5.07	5.60	5.30	5.10
parametric HF-adj	4.81	5.06	5.12	4.93	5.69	5.06	5.25	4.97	4.81	4.81	5.05	5.58	5.16	5.11
van der Waerden	3.86	4.28	4.41	4.31	4.99	4.84	5.17	2.93	3.34	3.91	4.35	4.55	4.75	4.33
KWF	3.91	4.33	4.36	4.22	5.03	4.94	5.20	3.03	3.50	4.05	4.39	4.47	4.75	4.48
Puri & Sen INT	4.30	4.47	4.72	5.00	5.48	5.09	5.45	2.37	2.26	2.29	2.69	3.30	3.12	3.06
Puri & Sen	4.25	4.53	5.15	5.29	5.60	5.56	5.55	2.13	1.95	1.92	2.46	3.05	2.31	2.45
INT	5.70	5.39	5.21	5.35	5.76	5.29	5.54	2.97	2.65	2.56	2.94	3.48	3.21	3.17
ART INT	4.92	4.97	5.12	5.12	5.75	5.15	5.28	5.27	5.09	4.99	5.18	5.46	5.22	5.36
Koch	2.76	3.36	4.03	4.29	5.17	5.16	5.63	2.48	2.98	3.67	4.54	4.69	4.65	4.88
ATS	3.80	3.96	4.62	4.86	5.29	5.35	5.13	3.72	3.40	3.42	4.04	4.79	4.72	4.87



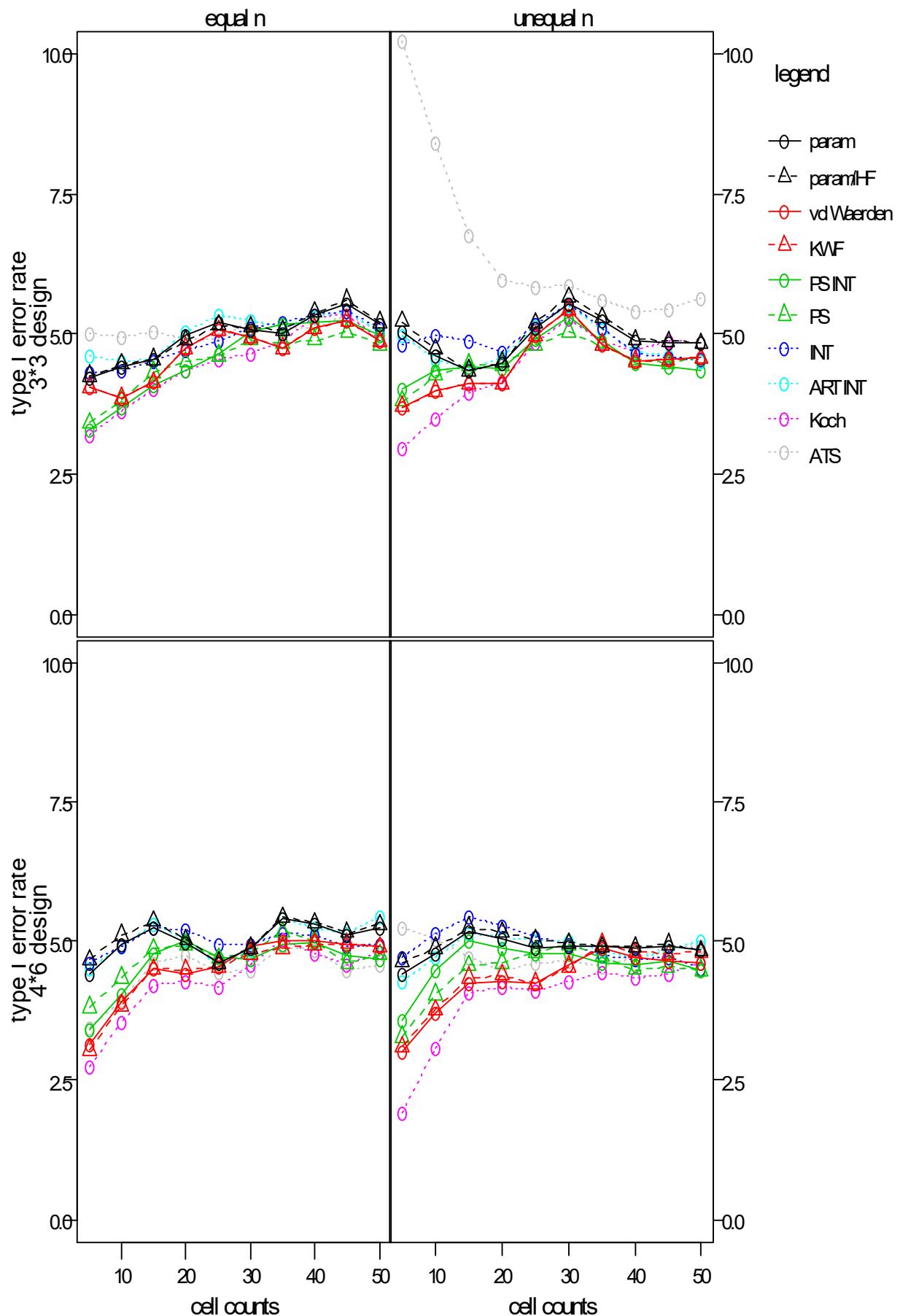
1. 8. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.79	3.59	4.17	4.41	4.53	4.70	4.88	6.54	5.88	5.09	4.89	4.92	5.05	5.50
parametric HF-adj	1.63	2.46	3.34	3.77	4.10	4.49	4.73	4.93	4.76	4.43	4.43	4.60	4.74	5.23
van der Waerden	3.81	4.18	4.45	4.61	4.50	4.70	4.83	3.52	3.85	4.29	4.38	4.79	4.40	5.02
KWF	3.81	4.18	4.45	4.61	4.50	4.70	4.83	3.52	3.85	4.29	4.38	4.79	4.40	5.02
Puri & Sen INT	3.78	4.08	4.24	4.40	4.10	4.61	4.76	4.90	4.97	4.67	4.36	4.54	4.39	5.34
Puri & Sen	4.37	4.34	4.15	4.28	4.28	4.47	4.81	4.55	4.89	4.76	4.43	4.47	4.30	5.07
INT	4.75	4.84	4.80	4.85	4.40	4.71	5.02	6.05	5.76	5.14	4.72	4.66	4.65	5.43
ART INT	4.68	4.72	4.70	4.81	4.46	4.86	5.45	5.51	5.57	5.17	4.64	4.29	4.64	5.02
Koch	3.23	3.84	4.26	4.36	4.35	4.70	5.01	3.33	3.93	4.22	4.20	4.32	4.24	4.79
ATS	5.64	5.06	4.45	4.46	4.42	4.56	4.90	8.01	6.99	6.03	5.29	4.85	4.39	5.48
large design (4*6)														
parametric	3.78	4.21	4.50	4.74	4.67	5.28	5.46	7.50	6.57	5.75	5.61	5.31	5.51	5.50
parametric HF-adj	1.86	2.71	3.49	3.77	3.86	4.56	4.77	4.61	4.65	4.56	4.64	4.59	4.94	4.98
van der Waerden	3.88	4.36	4.45	4.36	4.25	4.50	4.68	3.11	3.84	4.41	4.44	4.35	4.64	4.56
KWF	3.96	4.41	4.55	4.45	4.35	4.51	4.60	3.26	3.92	4.46	4.53	4.50	4.65	4.71
Puri & Sen INT	3.35	3.88	4.39	4.58	4.59	4.94	4.68	4.61	4.79	5.04	5.34	5.00	4.89	4.93
Puri & Sen	3.40	3.86	4.29	4.60	4.50	4.99	5.00	4.15	4.50	4.86	5.04	4.79	4.65	4.63
INT	4.15	4.56	4.90	4.95	4.80	5.09	4.90	6.24	5.83	5.66	5.76	5.26	4.99	5.00
ART INT	4.37	4.50	4.62	4.90	4.83	5.29	5.28	5.17	5.12	5.26	5.20	5.06	5.05	4.96
Koch	2.44	3.11	3.65	4.14	4.36	4.65	4.96	2.21	3.01	3.70	3.90	4.64	4.65	4.15
ATS	2.78	2.99	3.35	3.85	3.82	4.38	4.46	3.38	3.36	3.55	3.87	3.76	3.71	3.51



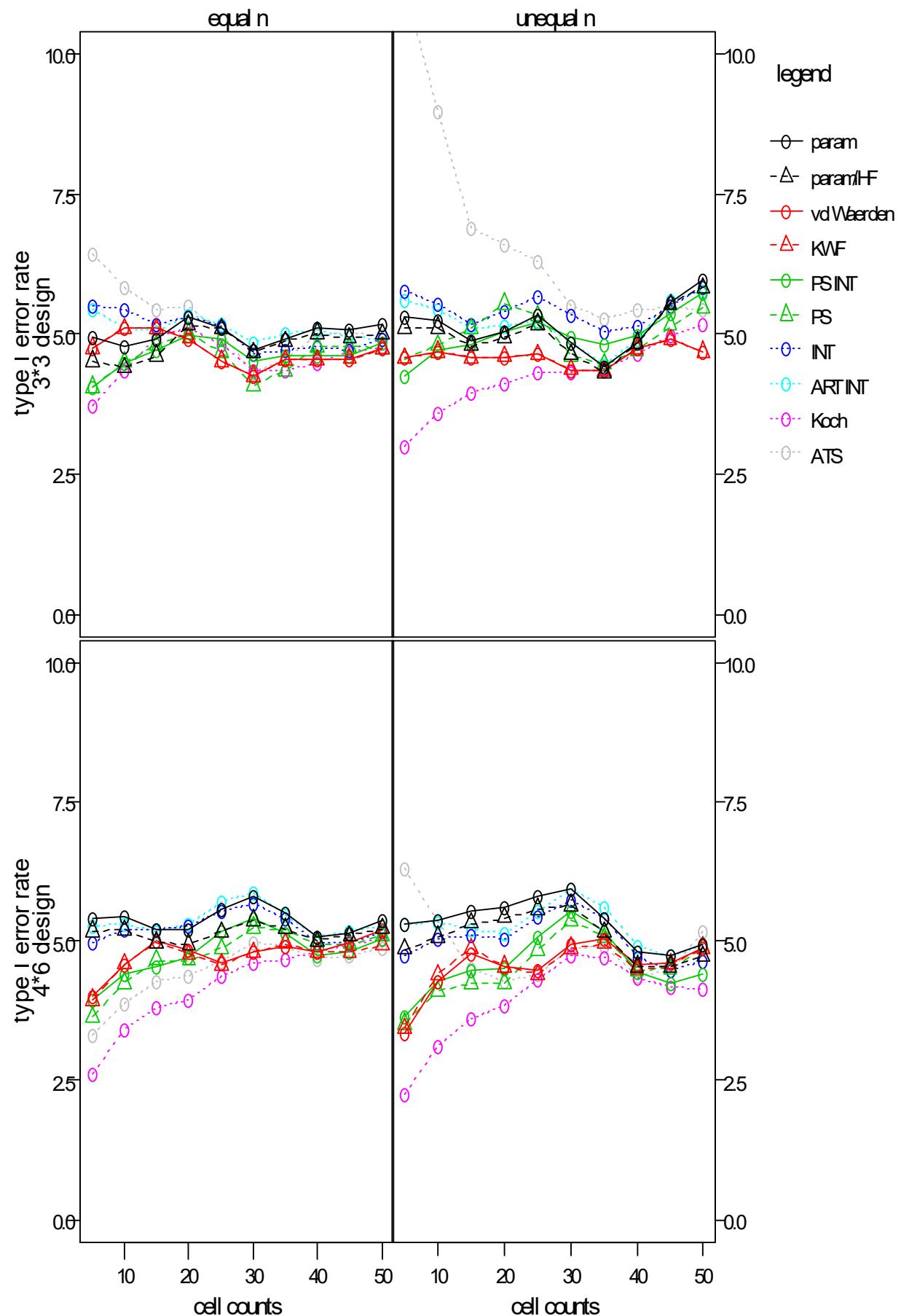
1. 8. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.20	4.40	4.56	4.98	5.07	5.35	5.18	5.04	4.61	4.34	4.47	5.55	4.86	4.83
parametric HF-adj	4.25	4.46	4.55	4.89	5.12	5.38	5.21	5.22	4.72	4.35	4.49	5.66	4.90	4.83
van der Waerden	4.05	3.85	4.14	4.74	4.94	5.10	4.86	3.70	3.99	4.10	4.11	5.44	4.51	4.57
KWF	4.05	3.85	4.14	4.74	4.94	5.10	4.86	3.70	3.99	4.10	4.11	5.44	4.51	4.57
Puri & Sen INT	3.28	3.67	4.08	4.33	5.04	5.22	4.98	4.00	4.35	4.42	4.39	5.30	4.48	4.35
Puri & Sen	3.41	3.81	4.31	4.50	4.89	4.89	4.81	3.80	4.26	4.45	4.44	5.04	4.54	4.57
INT	4.32	4.36	4.51	4.71	5.12	5.33	5.11	4.80	4.99	4.86	4.69	5.55	4.65	4.53
ART INT	4.62	4.51	4.53	5.03	5.24	5.31	5.01	4.99	4.56	4.39	4.57	5.50	4.67	4.52
Koch	3.20	3.61	4.00	4.35	4.65	5.29	4.91	2.95	3.48	3.95	4.15	5.27	4.72	4.83
ATS	5.00	4.94	5.03	4.91	5.24	5.12	5.06	10.21	8.41	6.75	5.97	5.85	5.41	5.65
large design (4*6)														
parametric	4.41	4.94	5.24	4.96	4.86	5.29	5.25	4.40	4.76	5.16	5.03	4.90	4.88	4.85
parametric HF-adj	4.66	5.11	5.35	5.03	4.88	5.33	5.30	4.62	4.88	5.24	5.16	4.96	4.90	4.83
van der Waerden	3.13	3.91	4.50	4.40	4.90	4.99	4.90	3.00	3.70	4.25	4.28	4.59	4.71	4.62
KWF	3.05	3.85	4.50	4.49	4.78	4.94	4.90	3.10	3.76	4.35	4.39	4.55	4.80	4.80
Puri & Sen INT	3.41	4.03	4.78	4.99	4.66	4.96	4.68	3.59	4.46	5.01	4.88	4.76	4.56	4.46
Puri & Sen	3.81	4.35	4.86	4.92	4.76	5.01	4.75	3.28	4.05	4.56	4.61	4.94	4.49	4.48
INT	4.60	4.92	5.25	5.21	4.94	5.09	4.95	4.71	5.14	5.44	5.26	4.95	4.67	4.51
ART INT	4.50	4.92	5.29	5.04	4.83	5.24	5.45	4.27	4.72	5.15	5.08	5.00	4.67	5.00
Koch	2.73	3.54	4.22	4.29	4.58	4.78	4.82	1.91	3.08	4.08	4.16	4.29	4.34	4.60
ATS	3.45	3.95	4.60	4.75	4.49	4.85	4.59	5.24	5.04	4.70	4.46	4.65	4.70	4.90



1. 8. 1. 13 normal distribution - equal variances - contaminated III

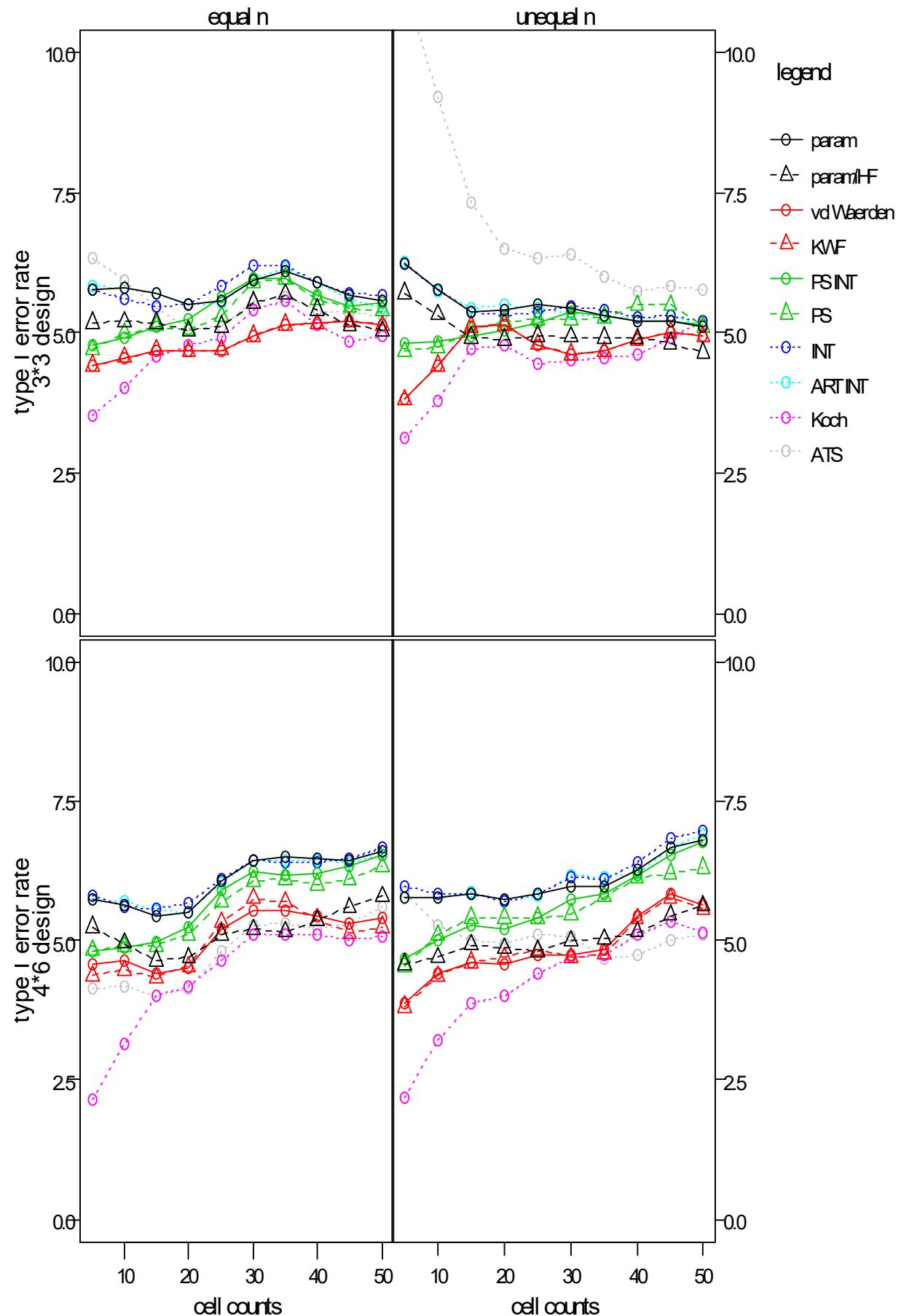
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.93	4.79	4.91	5.31	4.71	5.09	5.18	5.30	5.25	4.88	5.03	4.85	4.85	5.95
parametric HF-adj	4.52	4.40	4.61	5.15	4.67	5.01	5.00	5.11	5.11	4.79	4.94	4.64	4.84	5.82
van der Waerden	4.75	5.10	5.09	4.92	4.25	4.54	4.75	4.57	4.68	4.58	4.59	4.36	4.74	4.68
KWF	4.75	5.10	5.09	4.92	4.25	4.54	4.75	4.57	4.68	4.58	4.59	4.36	4.74	4.68
Puri & Sen INT	4.05	4.47	4.70	4.99	4.51	4.62	4.84	4.24	4.71	4.81	5.04	4.94	4.96	5.72
Puri & Sen	4.05	4.49	4.80	5.01	4.08	4.76	4.73	4.56	4.80	5.10	5.54	4.62	4.71	5.47
INT	5.50	5.42	5.18	5.31	4.64	4.76	4.90	5.75	5.55	5.16	5.40	5.34	5.14	5.84
ART INT	5.44	5.10	5.05	5.35	4.84	5.08	4.92	5.60	5.45	5.12	5.14	4.84	4.91	5.77
Koch	3.71	4.36	4.95	5.12	4.34	4.49	4.78	3.00	3.59	3.96	4.12	4.30	4.65	5.17
ATS	6.44	5.84	5.42	5.50	4.31	4.97	4.97	11.25	8.97	6.90	6.58	5.50	5.42	5.42
large design (4*6)														
parametric	5.41	5.45	5.22	5.22	5.80	5.08	5.37	5.30	5.38	5.53	5.59	5.92	4.79	4.95
parametric HF-adj	5.18	5.19	4.98	4.94	5.38	4.99	5.22	4.85	5.08	5.32	5.42	5.64	4.55	4.73
van der Waerden	4.01	4.59	5.00	4.85	4.79	4.82	5.20	3.36	4.28	4.78	4.55	4.95	4.58	4.87
KWF	3.95	4.59	4.96	4.76	4.80	4.80	4.92	3.44	4.40	4.86	4.54	4.88	4.49	4.88
Puri & Sen INT	3.95	4.40	4.54	4.71	5.42	4.73	5.03	3.64	4.26	4.47	4.50	5.53	4.45	4.40
Puri & Sen	3.63	4.25	4.65	4.65	5.24	4.94	5.10	3.51	4.10	4.25	4.25	5.36	4.47	4.87
INT	4.98	5.20	5.22	5.28	5.66	4.97	5.17	4.73	5.05	5.09	5.05	5.75	4.71	4.63
ART INT	5.26	5.30	5.16	5.31	5.88	5.08	5.27	5.30	5.35	5.22	5.14	5.95	4.89	4.90
Koch	2.61	3.42	3.80	3.94	4.61	4.79	5.03	2.24	3.10	3.60	3.85	4.74	4.34	4.13
ATS	3.30	3.89	4.26	4.36	4.96	4.67	4.87	6.31	5.35	4.50	4.27	4.88	4.36	5.16



1. 8. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

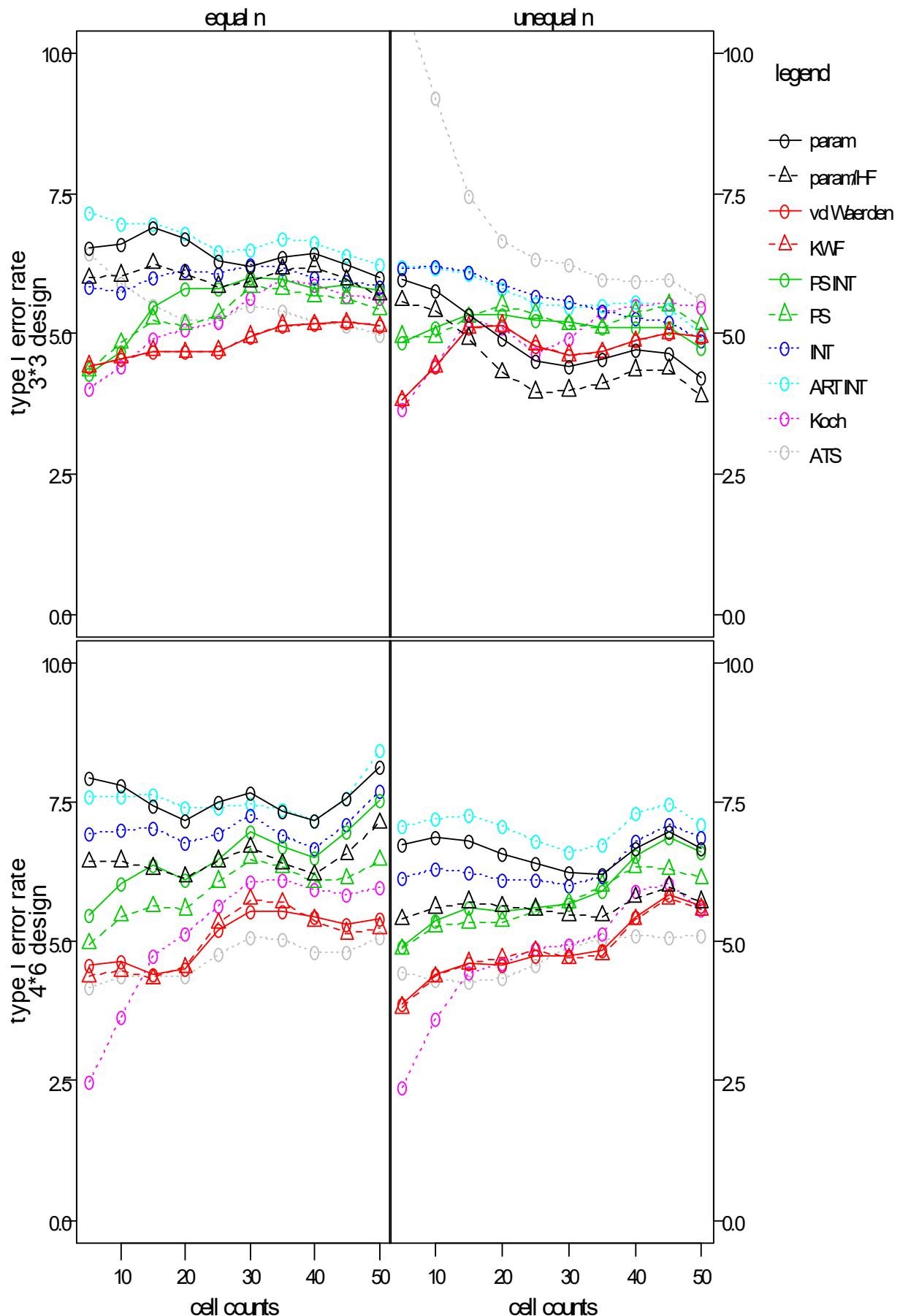
1. 8. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.78	5.81	5.71	5.50	5.94	5.89	5.57	6.22	5.76	5.38	5.40	5.45	5.21	5.12
parametric HF-adj	5.17	5.20	5.17	5.03	5.54	5.40	5.03	5.70	5.32	4.91	4.88	4.92	4.90	4.65
van der Waerden	4.42	4.56	4.69	4.67	4.95	5.16	5.13	3.81	4.41	5.11	5.14	4.61	4.86	4.93
KWF	4.42	4.56	4.69	4.67	4.95	5.16	5.13	3.81	4.41	5.11	5.14	4.61	4.86	4.93
Puri & Sen INT	4.77	4.91	5.09	5.25	5.97	5.66	5.52	4.80	4.84	4.95	5.04	5.38	5.20	5.13
Puri & Sen	4.70	4.99	5.12	5.05	5.90	5.59	5.38	4.67	4.73	5.03	5.21	5.24	5.49	5.11
INT	5.75	5.60	5.46	5.49	6.21	5.89	5.68	6.24	5.76	5.38	5.32	5.47	5.28	5.22
ART INT	5.83	5.79	5.71	5.51	5.96	5.89	5.43	6.27	5.74	5.44	5.49	5.35	5.28	5.11
Koch	3.53	4.03	4.59	4.79	5.39	5.14	4.93	3.11	3.80	4.71	4.78	4.50	4.61	5.22
ATS	6.32	5.94	5.45	5.08	5.58	5.39	5.30	11.18	9.19	7.33	6.49	6.38	5.72	5.78
large design (4*6)														
parametric	5.73	5.64	5.44	5.49	6.45	6.46	6.59	5.77	5.77	5.85	5.75	5.97	6.28	6.80
parametric HF-adj	5.24	4.95	4.64	4.70	5.19	5.36	5.79	4.58	4.70	4.92	4.86	5.00	5.15	5.62
van der Waerden	4.58	4.65	4.41	4.50	5.54	5.43	5.40	3.88	4.42	4.60	4.59	4.75	5.45	5.63
KWF	4.37	4.46	4.33	4.53	5.75	5.38	5.24	3.81	4.36	4.61	4.69	4.70	5.39	5.58
Puri & Sen INT	4.80	4.88	4.97	5.25	6.24	6.21	6.54	4.68	5.01	5.28	5.22	5.74	6.16	6.75
Puri & Sen	4.82	4.90	4.89	5.11	6.07	6.00	6.32	4.55	5.09	5.41	5.41	5.47	6.12	6.30
INT	5.79	5.61	5.58	5.66	6.43	6.39	6.67	5.97	5.85	5.82	5.69	6.14	6.40	6.95
ART INT	5.75	5.70	5.54	5.51	6.44	6.42	6.55	5.77	5.77	5.86	5.69	6.18	6.21	6.90
Koch	2.16	3.16	4.00	4.16	5.09	5.10	5.07	2.18	3.20	3.86	4.01	4.71	5.12	5.13
ATS	4.15	4.16	4.00	4.14	5.26	5.20	5.60	5.86	5.26	5.01	4.94	5.07	4.74	5.12



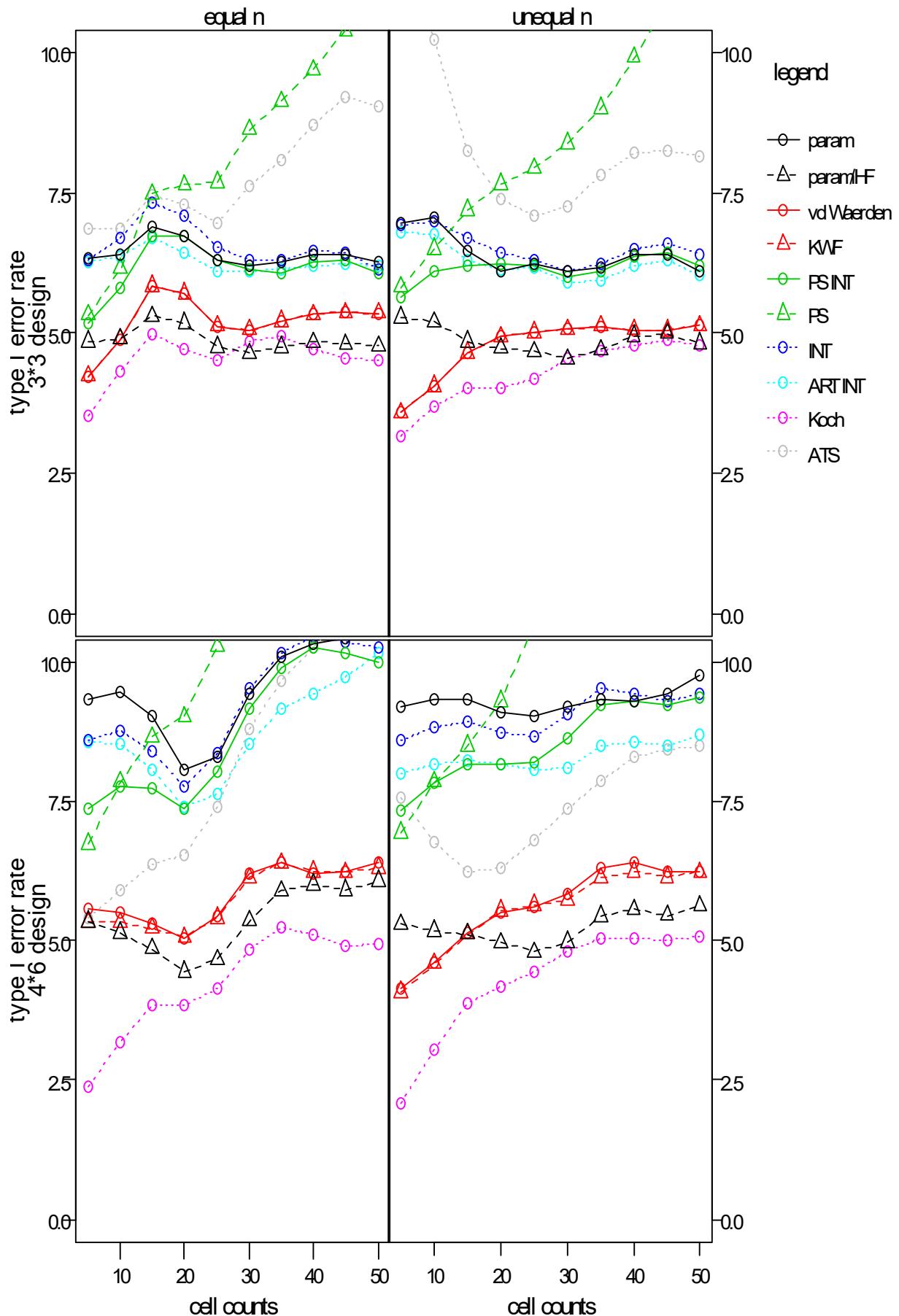
1. 8. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.54	6.60	6.88	6.70	6.19	6.42	6.00	5.97	5.76	5.35	4.90	4.41	4.72	4.20
parametric HF-adj	5.99	6.03	6.24	6.06	5.92	6.20	5.68	5.58	5.41	4.91	4.30	3.98	4.35	3.88
van der Waerden	4.42	4.56	4.69	4.67	4.95	5.16	5.13	3.81	4.41	5.11	5.14	4.61	4.86	4.93
KWF	4.42	4.56	4.69	4.67	4.95	5.16	5.13	3.81	4.41	5.11	5.14	4.61	4.86	4.93
Puri & Sen INT	4.28	4.69	5.47	5.79	6.01	5.81	5.78	4.83	5.09	5.34	5.35	5.21	5.09	4.75
Puri & Sen	4.33	4.83	5.25	5.15	5.82	5.66	5.43	4.95	4.94	5.30	5.50	5.15	5.38	5.15
INT	5.82	5.72	6.00	6.12	6.24	5.99	5.82	6.17	6.19	6.10	5.88	5.56	5.28	4.88
ART INT	7.14	6.94	6.96	6.78	6.50	6.64	6.23	6.18	6.17	6.05	5.81	5.46	5.58	5.01
Koch	4.02	4.41	4.90	5.06	5.64	5.85	5.63	3.65	4.46	5.24	5.09	4.90	5.49	5.48
ATS	6.42	5.90	5.51	5.24	5.49	5.22	4.96	11.06	9.20	7.45	6.65	6.22	5.94	5.61
large design (4*6)														
parametric	7.92	7.78	7.44	7.17	7.65	7.18	8.12	6.72	6.88	6.81	6.56	6.22	6.65	6.65
parametric HF-adj	6.42	6.44	6.31	6.15	6.69	6.19	7.12	5.40	5.61	5.70	5.62	5.47	5.78	5.70
van der Waerden	4.58	4.65	4.41	4.50	5.54	5.43	5.40	3.88	4.42	4.60	4.59	4.75	5.45	5.63
KWF	4.37	4.46	4.33	4.53	5.75	5.38	5.24	3.81	4.36	4.61	4.69	4.70	5.39	5.58
Puri & Sen INT	5.48	6.05	6.36	6.11	6.97	6.51	7.54	4.90	5.38	5.60	5.53	5.68	6.53	6.61
Puri & Sen	4.95	5.45	5.63	5.58	6.48	6.06	6.45	4.86	5.28	5.34	5.35	5.69	6.34	6.13
INT	6.92	6.99	7.04	6.76	7.25	6.66	7.70	6.15	6.29	6.25	6.10	6.01	6.80	6.85
ART INT	7.60	7.60	7.62	7.40	7.47	7.18	8.44	7.05	7.19	7.26	7.06	6.60	7.29	7.10
Koch	2.49	3.65	4.73	5.14	6.06	5.94	5.97	2.37	3.61	4.45	4.62	4.93	5.91	5.58
ATS	4.17	4.36	4.36	4.39	5.08	4.80	5.07	4.43	4.30	4.29	4.34	4.91	5.10	5.10



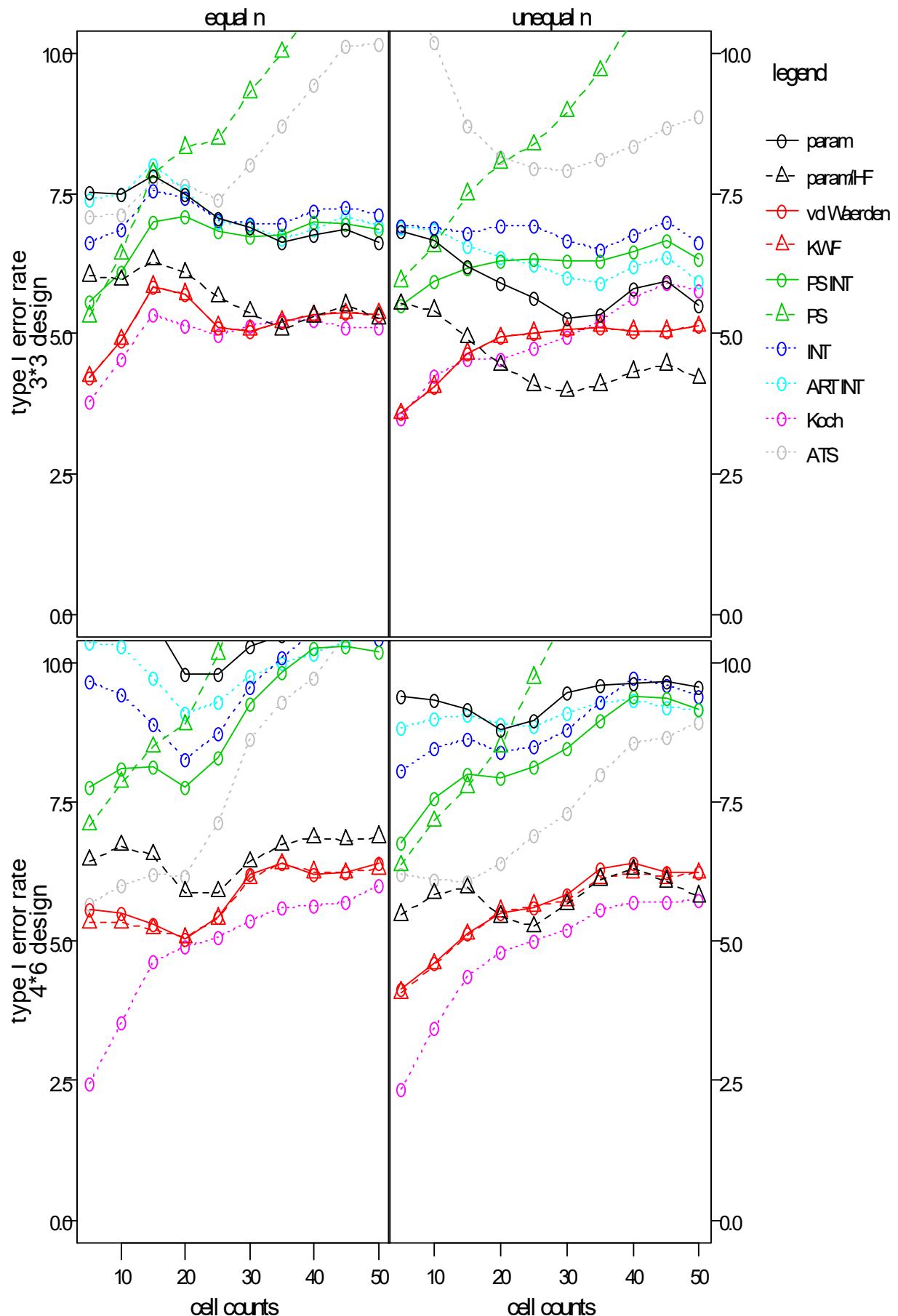
1. 8. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.32	6.41	6.90	6.74	6.21	6.40	6.27	6.95	7.05	6.47	6.11	6.10	6.41	6.10
parametric HF-adj	4.85	4.89	5.30	5.17	4.64	4.83	4.77	5.28	5.19	4.84	4.72	4.53	4.95	4.81
van der Waerden	4.23	4.89	5.83	5.70	5.05	5.33	5.35	3.58	4.05	4.65	4.93	5.06	5.05	5.13
KWF	4.23	4.89	5.83	5.70	5.05	5.33	5.35	3.58	4.05	4.65	4.93	5.06	5.05	5.13
Puri & Sen INT	5.18	5.79	6.71	6.72	6.14	6.27	6.05	5.63	6.10	6.21	6.23	6.00	6.35	6.21
Puri & Sen	5.32	6.14	7.47	7.64	8.62	9.68	10.53	5.81	6.49	7.19	7.65	8.38	9.91	11.06
INT	6.28	6.69	7.33	7.10	6.31	6.46	6.13	6.91	7.00	6.68	6.44	6.11	6.50	6.41
ART INT	6.25	6.35	6.70	6.44	6.11	6.21	6.20	6.78	6.76	6.31	6.14	5.91	6.21	6.03
Koch	3.53	4.30	4.99	4.71	4.85	4.71	4.50	3.15	3.69	4.01	4.00	4.54	4.79	4.76
ATS	6.84	6.84	7.46	7.27	7.60	8.72	9.05	12.04	10.21	8.25	7.38	7.24	8.20	8.13
large design (4*6)														
parametric	9.33	9.46	9.03	8.07	9.41	10.31	10.65	9.20	9.32	9.34	9.10	9.20	9.30	9.74
parametric HF-adj	5.34	5.14	4.85	4.45	5.35	6.01	6.07	5.29	5.18	5.12	4.96	4.97	5.56	5.62
van der Waerden	5.58	5.50	5.30	5.04	6.21	6.21	6.40	4.15	4.61	5.15	5.51	5.82	6.39	6.23
KWF	5.33	5.33	5.22	5.06	6.12	6.24	6.30	4.08	4.59	5.12	5.54	5.72	6.24	6.22
Puri & Sen INT	7.35	7.75	7.72	7.38	9.16	10.25	9.98	7.33	7.83	8.15	8.16	8.64	9.29	9.35
Puri & Sen	6.74	7.84	8.65	9.01	11.90	13.72	15.14	6.94	7.84	8.50	9.29	11.81	13.36	14.92
INT	8.60	8.75	8.38	7.75	9.51	10.45	10.25	8.60	8.81	8.91	8.71	9.07	9.41	9.43
ART INT	8.55	8.53	8.07	7.40	8.53	9.43	10.15	7.98	8.15	8.23	8.15	8.11	8.57	8.69
Koch	2.38	3.19	3.85	3.85	4.85	5.12	4.93	2.08	3.03	3.86	4.19	4.81	5.04	5.08
ATS	5.40	5.90	6.38	6.53	8.79	10.24	11.18	7.56	6.78	6.24	6.30	7.38	8.29	8.50



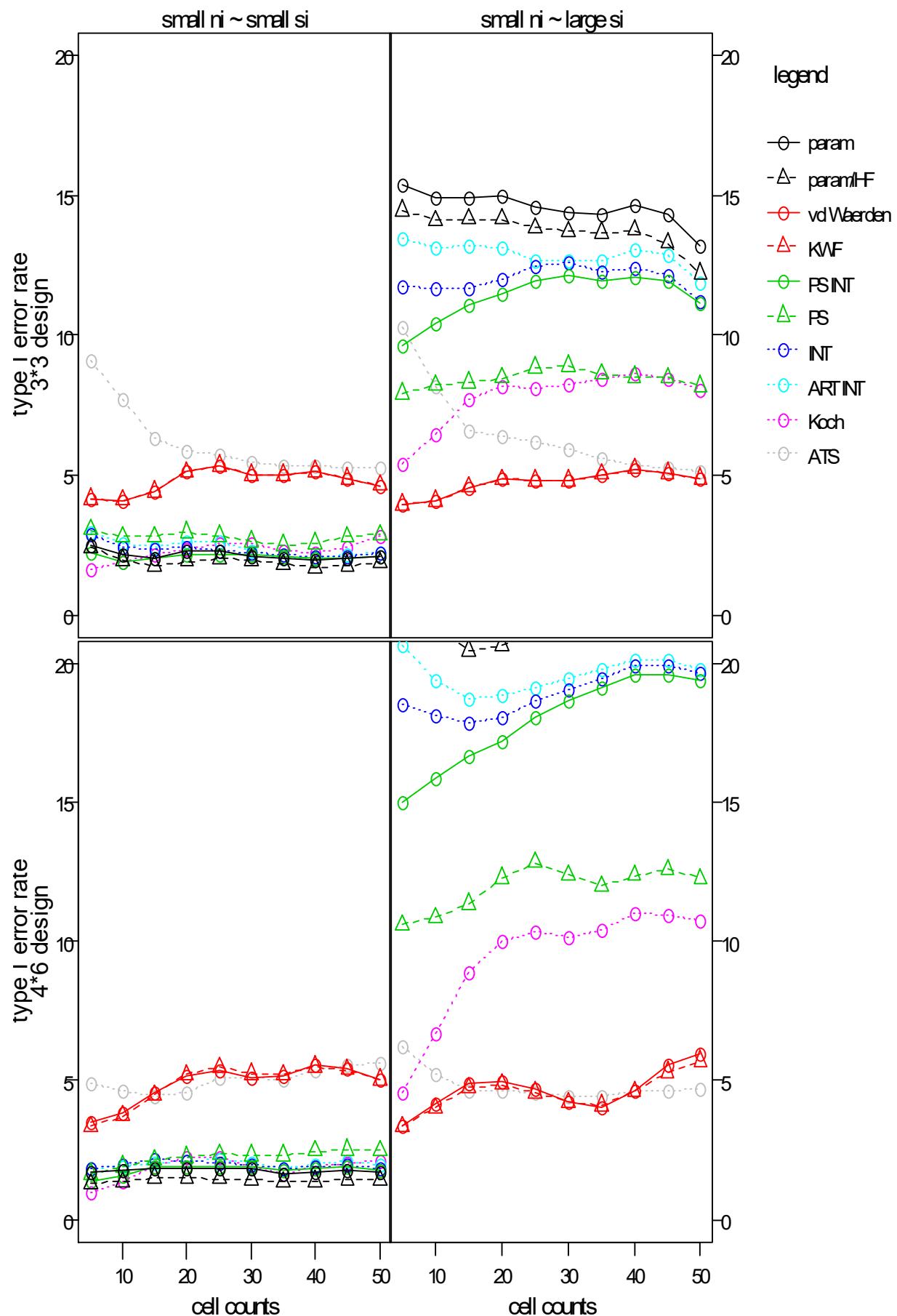
1. 8. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	7.52	7.47	7.80	7.50	6.88	6.77	6.62	6.82	6.67	6.20	5.91	5.28	5.79	5.51
parametric HF-adj	6.04	5.95	6.31	6.09	5.38	5.31	5.28	5.52	5.40	4.92	4.44	3.96	4.31	4.20
van der Waerden	4.23	4.89	5.83	5.70	5.05	5.33	5.35	3.58	4.05	4.65	4.93	5.06	5.05	5.13
KWF	4.23	4.89	5.83	5.70	5.05	5.33	5.35	3.58	4.05	4.65	4.93	5.06	5.05	5.13
Puri & Sen INT	5.57	6.10	7.00	7.08	6.74	6.99	6.87	5.51	5.94	6.17	6.29	6.29	6.46	6.34
Puri & Sen	5.31	6.42	7.86	8.31	9.31	10.86	11.91	5.93	6.56	7.49	8.05	8.95	10.60	11.40
INT	6.62	6.86	7.54	7.43	6.96	7.20	7.13	6.92	6.88	6.80	6.91	6.65	6.75	6.64
ART INT	7.37	7.49	8.00	7.56	6.91	6.86	6.93	6.90	6.84	6.55	6.35	6.00	6.20	5.93
Koch	3.80	4.55	5.33	5.15	5.15	5.25	5.10	3.48	4.24	4.54	4.56	4.95	5.62	5.78
ATS	7.10	7.12	7.70	7.65	8.01	9.44	10.15	11.52	10.18	8.72	8.14	7.92	8.35	8.87
large design (4*6)														
parametric	11.45	11.36	10.76	9.79	10.30	10.82	11.17	9.39	9.33	9.16	8.80	9.45	9.61	9.57
parametric HF-adj	6.45	6.71	6.55	5.88	6.42	6.85	6.87	5.48	5.85	5.96	5.44	5.66	6.29	5.80
van der Waerden	5.58	5.50	5.30	5.04	6.21	6.21	6.40	4.15	4.61	5.15	5.51	5.82	6.39	6.23
KWF	5.33	5.33	5.22	5.06	6.12	6.24	6.30	4.08	4.59	5.12	5.54	5.72	6.24	6.22
Puri & Sen INT	7.75	8.11	8.14	7.76	9.26	10.24	10.20	6.78	7.58	8.00	7.94	8.46	9.39	9.15
Puri & Sen	7.08	7.84	8.49	8.88	11.64	13.74	15.37	6.36	7.15	7.76	8.50	10.88	13.09	13.80
INT	9.64	9.44	8.89	8.26	9.56	10.54	10.42	8.05	8.46	8.61	8.40	8.80	9.71	9.40
ART INT	10.35	10.28	9.72	9.10	9.76	10.14	10.91	8.83	8.98	9.05	8.89	9.08	9.32	9.15
Koch	2.46	3.56	4.64	4.91	5.38	5.65	5.99	2.36	3.46	4.36	4.80	5.22	5.69	5.73
ATS	5.68	5.99	6.19	6.18	8.64	9.73	10.82	6.20	6.09	6.08	6.40	7.31	8.56	8.92



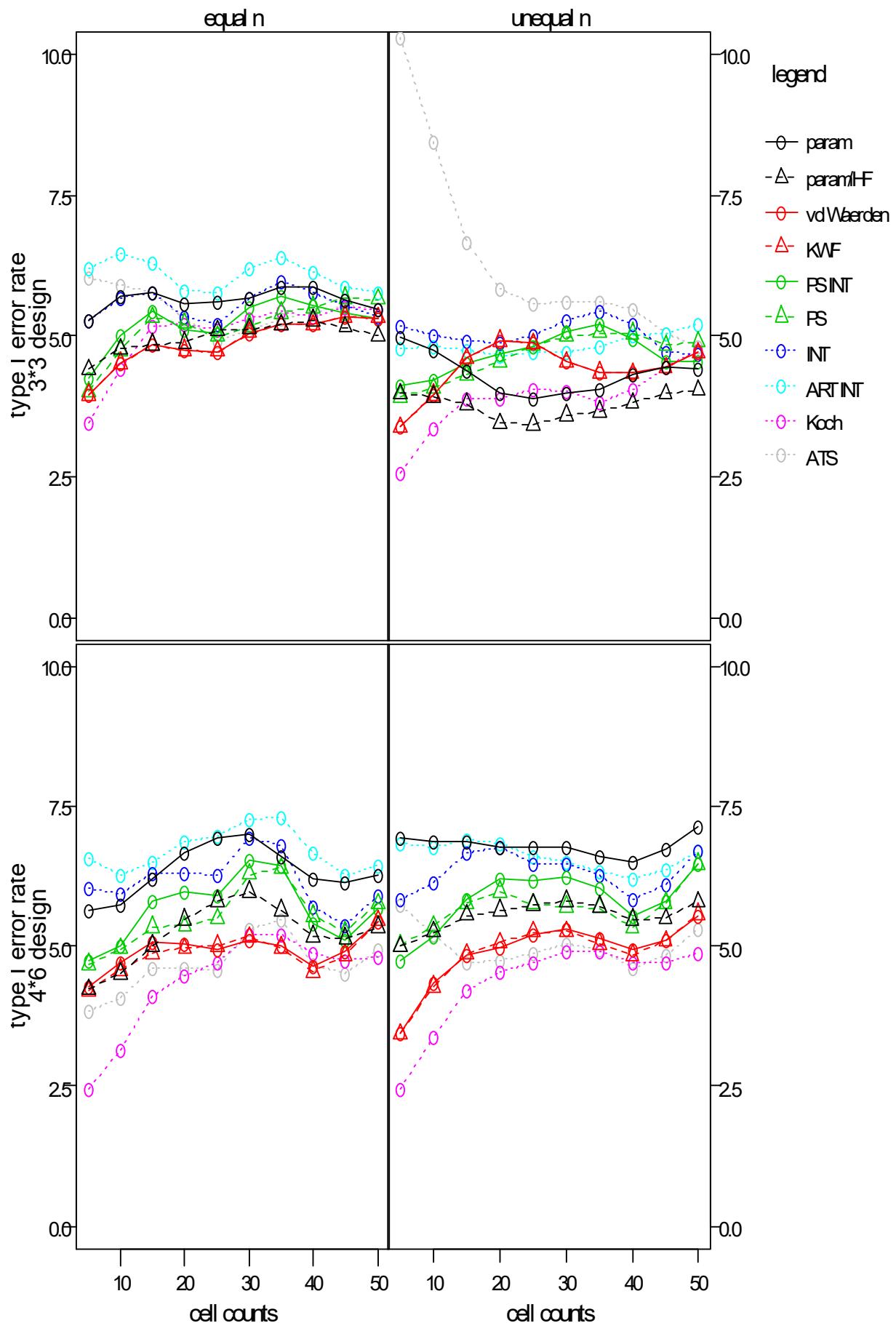
1. 8. 2. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.50	2.14	2.04	2.26	2.10	1.96	2.10	15.37	14.91	14.91	14.95	14.34	14.65	13.17
parametric HF-adj	2.40	1.96	1.75	1.91	1.95	1.69	1.88	14.44	14.10	14.13	14.14	13.70	13.74	12.21
van der Waerden	4.15	4.10	4.40	5.10	5.01	5.12	4.62	3.95	4.08	4.56	4.85	4.80	5.22	4.88
KWF	4.15	4.10	4.40	5.10	5.01	5.12	4.62	3.95	4.08	4.56	4.85	4.80	5.22	4.88
Puri & Sen INT	2.20	1.92	1.99	2.17	2.15	2.02	2.10	9.61	10.41	11.04	11.46	12.11	12.04	11.13
Puri & Sen	3.04	2.79	2.80	2.95	2.61	2.56	2.87	7.90	8.21	8.30	8.46	8.91	8.50	8.18
INT	2.87	2.42	2.34	2.40	2.24	2.09	2.20	11.75	11.67	11.65	12.01	12.56	12.36	11.23
ART INT	2.94	2.54	2.39	2.61	2.31	2.04	2.20	13.44	13.10	13.20	13.10	12.65	13.02	11.86
Koch	1.60	1.89	2.17	2.36	2.54	2.20	2.79	5.38	6.42	7.70	8.16	8.26	8.65	8.00
ATS	9.06	7.71	6.33	5.88	5.44	5.34	5.23	10.26	8.18	6.60	6.38	5.92	5.31	5.13
large design (4*6)														
parametric	1.70	1.75	1.81	1.81	1.81	1.69	1.72	24.98	23.64	22.68	22.86	23.40	24.52	23.43
parametric HF-adj	1.28	1.34	1.50	1.50	1.45	1.38	1.43	22.54	21.36	20.46	20.64	21.24	22.01	21.43
van der Waerden	3.52	3.86	4.55	5.16	5.12	5.56	5.01	3.36	4.14	4.90	4.97	4.24	4.65	5.97
KWF	3.35	3.73	4.48	5.21	5.24	5.50	5.03	3.35	4.00	4.75	4.86	4.22	4.61	5.70
Puri & Sen INT	1.37	1.56	1.88	1.92	1.91	1.84	1.80	14.98	15.86	16.65	17.18	18.66	19.59	19.36
Puri & Sen	1.65	1.90	2.14	2.25	2.32	2.46	2.48	10.58	10.85	11.35	12.27	12.39	12.36	12.25
INT	1.87	1.99	2.16	2.10	2.00	1.92	1.85	18.49	18.10	17.85	18.08	19.04	19.91	19.65
ART INT	1.85	1.88	2.04	2.11	2.04	2.00	1.98	20.61	19.36	18.73	18.85	19.43	20.12	19.80
Koch	0.98	1.39	1.92	2.25	1.89	1.88	2.08	4.59	6.72	8.90	10.03	10.14	10.98	10.75
ATS	4.89	4.65	4.41	4.55	5.12	5.38	5.60	6.24	5.24	4.61	4.66	4.40	4.62	4.67



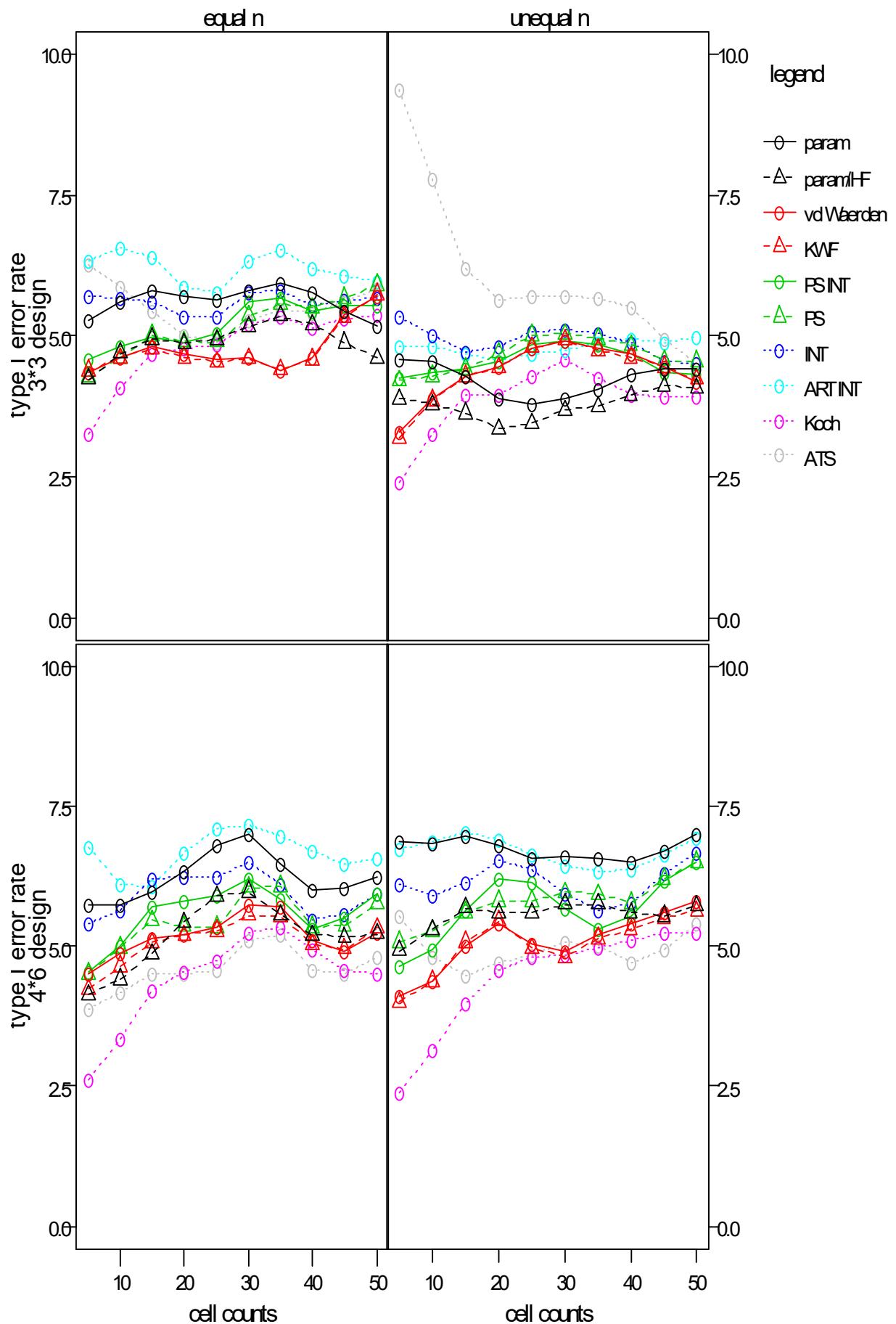
1. 8. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.26	5.70	5.76	5.57	5.66	5.86	5.47	4.99	4.75	4.38	3.99	3.98	4.30	4.40
parametric HF-adj	4.40	4.76	4.84	4.88	5.12	5.27	5.00	3.97	3.92	3.79	3.45	3.59	3.81	4.03
van der Waerden	3.95	4.51	4.85	4.74	5.05	5.19	5.32	3.38	3.95	4.60	4.91	4.53	4.34	4.70
KWF	3.95	4.51	4.85	4.74	5.05	5.19	5.32	3.38	3.95	4.60	4.91	4.53	4.34	4.70
Puri & Sen INT	4.25	5.00	5.42	5.12	5.49	5.52	5.30	4.13	4.20	4.51	4.68	5.06	4.95	4.54
Puri & Sen	4.01	4.75	5.33	5.22	5.17	5.51	5.65	3.92	4.07	4.30	4.53	4.99	5.04	4.89
INT	5.26	5.68	5.78	5.34	5.66	5.76	5.35	5.17	5.01	4.91	4.88	5.28	5.19	4.67
ART INT	6.18	6.45	6.28	5.79	6.21	6.12	5.77	4.77	4.80	4.74	4.65	4.72	5.00	5.19
Koch	3.44	4.41	5.16	5.21	5.31	5.35	5.46	2.56	3.34	3.90	3.90	4.00	4.06	4.74
ATS	6.02	5.90	5.75	5.30	5.10	5.39	5.46	10.28	8.45	6.66	5.83	5.59	5.46	4.82
large design (4*6)														
parametric	5.62	5.74	6.19	6.66	7.01	6.19	6.27	6.92	6.85	6.85	6.75	6.76	6.50	7.12
parametric HF-adj	4.23	4.51	5.01	5.47	5.97	5.18	5.34	5.00	5.25	5.55	5.64	5.81	5.47	5.79
van der Waerden	4.26	4.70	5.06	5.03	5.11	4.65	5.44	3.43	4.33	4.85	4.97	5.30	4.93	5.55
KWF	4.20	4.58	4.88	4.96	5.16	4.54	5.45	3.43	4.28	4.86	5.06	5.26	4.84	5.57
Puri & Sen INT	4.74	5.00	5.79	5.96	6.53	5.40	5.66	4.75	5.17	5.84	6.21	6.22	5.54	6.47
Puri & Sen	4.68	4.95	5.34	5.36	6.28	5.54	5.76	5.01	5.36	5.76	5.97	5.70	5.33	6.47
INT	6.04	5.94	6.30	6.29	6.93	5.71	5.89	5.83	6.12	6.65	6.76	6.46	5.83	6.69
ART INT	6.57	6.28	6.50	6.85	7.26	6.67	6.44	6.84	6.78	6.91	6.83	6.49	6.20	6.70
Koch	2.45	3.14	4.11	4.49	5.19	4.86	4.80	2.44	3.39	4.21	4.54	4.90	4.70	4.87
ATS	3.83	4.09	4.62	4.62	5.31	4.67	4.95	5.74	5.19	4.72	4.74	5.04	4.61	5.29



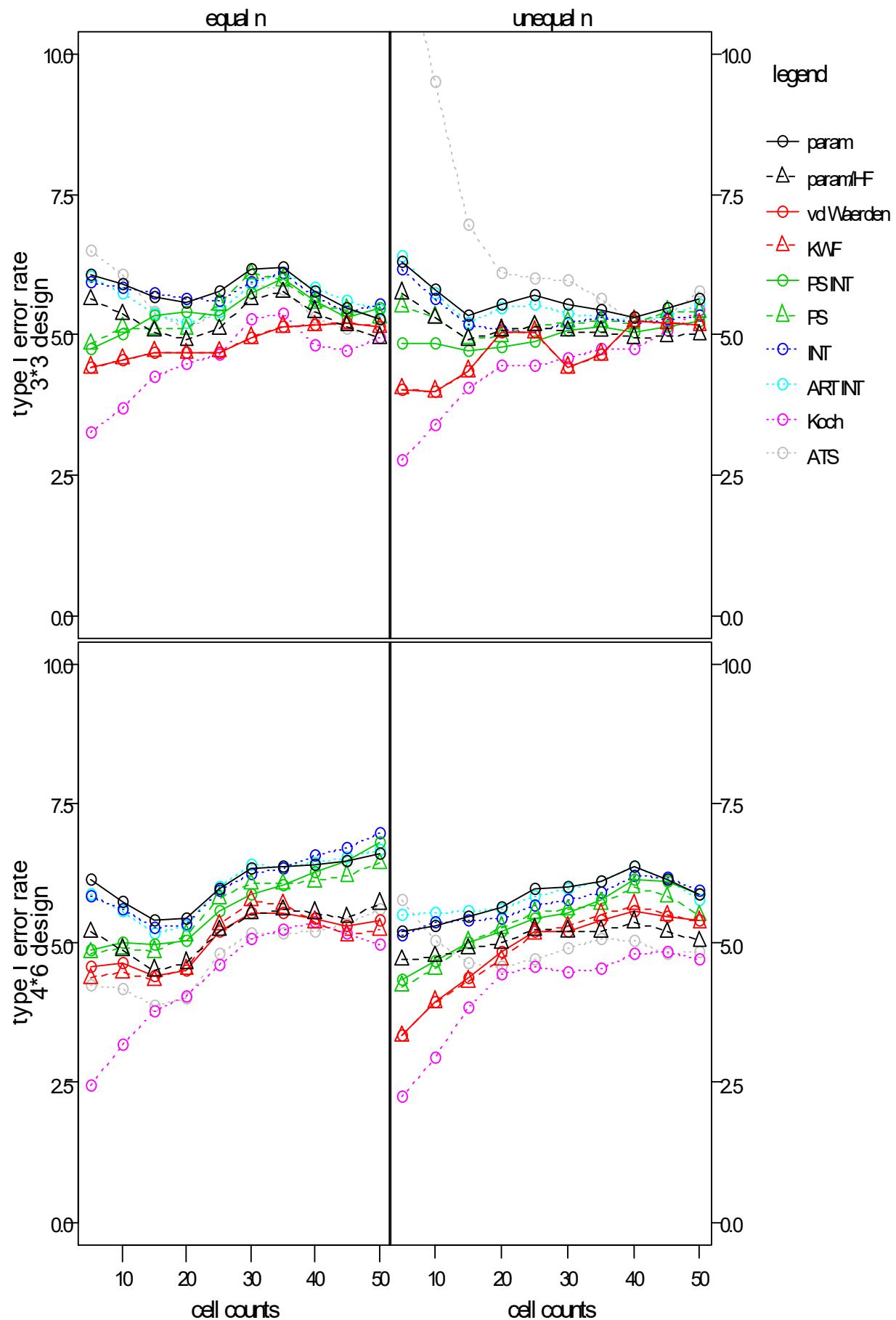
1. 8. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.28	5.60	5.81	5.69	5.79	5.78	5.18	4.57	4.53	4.28	3.88	3.90	4.30	4.40
parametric HF-adj	4.23	4.69	4.94	4.86	5.16	5.20	4.60	3.87	3.78	3.62	3.35	3.68	3.94	4.07
van der Waerden	4.33	4.61	4.81	4.67	4.61	4.61	5.70	3.28	3.89	4.29	4.46	4.91	4.66	4.17
KWF	4.38	4.60	4.76	4.62	4.59	4.58	5.73	3.18	3.86	4.28	4.43	4.92	4.62	4.23
Puri & Sen INT	4.57	4.80	4.99	4.88	5.60	5.44	5.55	4.25	4.35	4.40	4.54	4.90	4.69	4.32
Puri & Sen	4.27	4.60	5.01	4.90	5.35	5.49	5.90	4.20	4.28	4.42	4.69	5.03	4.83	4.55
INT	5.70	5.66	5.59	5.35	5.75	5.54	5.66	5.34	5.01	4.71	4.80	5.10	4.88	4.52
ART INT	6.33	6.55	6.41	5.85	6.33	6.18	5.96	4.82	4.80	4.66	4.54	4.75	4.94	4.99
Koch	3.26	4.08	4.69	4.79	5.21	5.14	5.37	2.41	3.26	3.94	3.94	4.58	3.96	3.92
ATS	6.25	5.85	5.44	5.00	5.27	5.41	5.82	9.38	7.78	6.21	5.65	5.70	5.50	4.52
large design (4*6)														
parametric	5.75	5.74	5.96	6.35	6.99	6.00	6.24	6.85	6.84	6.97	6.80	6.61	6.49	7.00
parametric HF-adj	4.13	4.41	4.86	5.43	5.97	5.20	5.22	4.92	5.30	5.68	5.59	5.75	5.59	5.72
van der Waerden	4.50	4.88	5.14	5.20	5.72	5.09	5.25	4.12	4.38	5.01	5.42	4.90	5.39	5.80
KWF	4.23	4.64	5.06	5.20	5.55	5.03	5.32	4.00	4.38	5.08	5.45	4.79	5.30	5.63
Puri & Sen INT	4.55	5.00	5.71	5.80	6.20	5.30	5.92	4.65	4.94	5.62	6.20	5.66	5.53	6.50
Puri & Sen	4.51	4.97	5.46	5.35	6.05	5.34	5.75	5.08	5.28	5.61	5.81	5.96	5.77	6.50
INT	5.40	5.64	6.20	6.22	6.51	5.48	5.95	6.10	5.89	6.14	6.54	5.92	5.76	6.68
ART INT	6.76	6.11	6.08	6.66	7.15	6.69	6.57	6.73	6.86	7.04	6.89	6.44	6.38	6.92
Koch	2.60	3.35	4.21	4.53	5.24	4.94	4.50	2.38	3.15	3.97	4.58	4.84	5.11	5.23
ATS	5.28	5.60	5.81	5.69	5.79	5.78	5.18	4.57	4.53	4.28	3.88	3.90	4.30	4.40



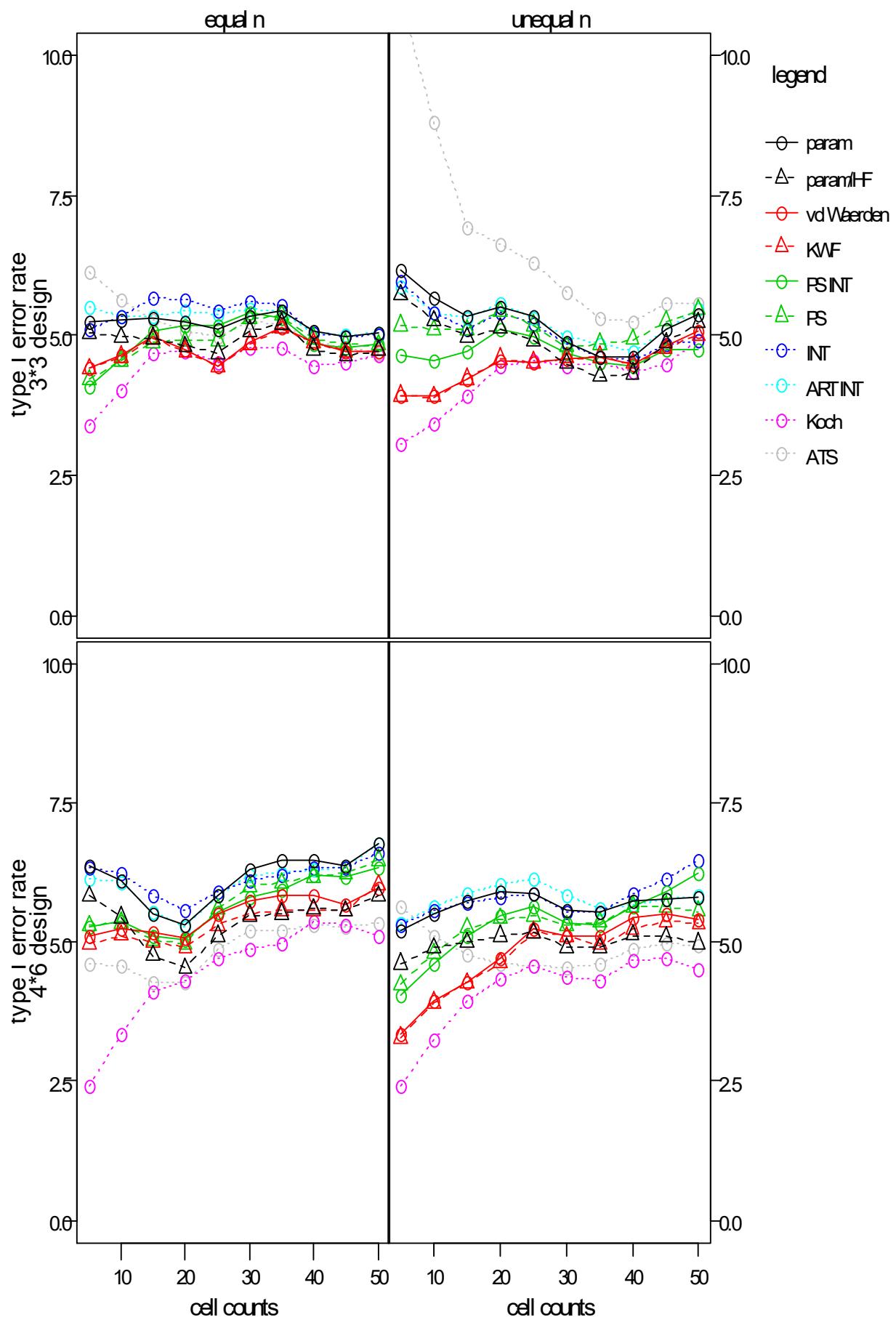
1. 8. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.05	5.90	5.67	5.57	6.17	5.76	5.28	6.29	5.80	5.34	5.55	5.55	5.30	5.62
parametric HF-adj	5.63	5.36	5.05	4.90	5.62	5.40	4.95	5.74	5.29	4.91	5.08	5.05	4.95	5.00
van der Waerden	4.42	4.56	4.69	4.67	4.95	5.16	5.13	4.03	3.99	4.35	5.05	4.41	5.24	5.17
KWF	4.42	4.56	4.69	4.67	4.95	5.16	5.13	4.03	3.99	4.35	5.05	4.41	5.24	5.17
Puri & Sen INT	4.73	5.01	5.35	5.40	5.73	5.59	5.47	4.85	4.83	4.72	4.79	5.06	5.04	5.23
Puri & Sen	4.83	5.12	5.10	5.09	6.09	5.55	5.31	5.50	5.31	4.92	4.96	5.22	5.20	5.41
INT	5.93	5.84	5.74	5.62	5.93	5.66	5.53	6.17	5.62	5.16	5.06	5.19	5.19	5.35
ART INT	6.02	5.72	5.36	5.20	5.91	5.83	5.43	6.39	5.72	5.21	5.46	5.36	5.24	5.52
Koch	3.26	3.67	4.25	4.47	5.28	4.80	4.95	2.76	3.39	4.05	4.44	4.57	4.75	5.43
ATS	6.49	6.05	5.41	5.10	5.91	5.29	4.95	12.12	9.51	6.94	6.10	5.96	5.20	5.75
large design (4*6)														
parametric	6.15	5.75	5.39	5.45	6.33	6.39	6.60	5.20	5.29	5.47	5.65	6.00	6.38	5.88
parametric HF-adj	5.20	4.88	4.51	4.64	5.52	5.54	5.70	4.70	4.75	4.89	5.01	5.21	5.38	5.03
van der Waerden	4.58	4.65	4.41	4.50	5.54	5.43	5.40	3.33	3.94	4.39	4.85	5.21	5.57	5.40
KWF	4.37	4.46	4.33	4.53	5.75	5.38	5.24	3.33	3.94	4.31	4.70	5.30	5.68	5.38
Puri & Sen INT	4.88	5.00	4.96	5.04	5.88	6.28	6.79	4.33	4.66	4.99	5.20	5.55	6.12	5.87
Puri & Sen	4.82	4.89	4.84	5.14	6.06	6.10	6.42	4.22	4.55	5.01	5.28	5.60	6.01	5.50
INT	5.85	5.61	5.28	5.34	6.24	6.56	6.97	5.13	5.36	5.42	5.44	5.76	6.21	5.95
ART INT	5.87	5.56	5.16	5.29	6.39	6.43	6.68	5.50	5.55	5.58	5.59	5.98	6.38	5.77
Koch	2.45	3.18	3.79	4.05	5.06	5.36	4.98	2.26	2.95	3.85	4.45	4.46	4.81	4.70
ATS	4.23	4.19	3.89	4.02	5.17	5.21	5.59	5.77	5.03	4.64	4.59	4.91	5.05	4.84



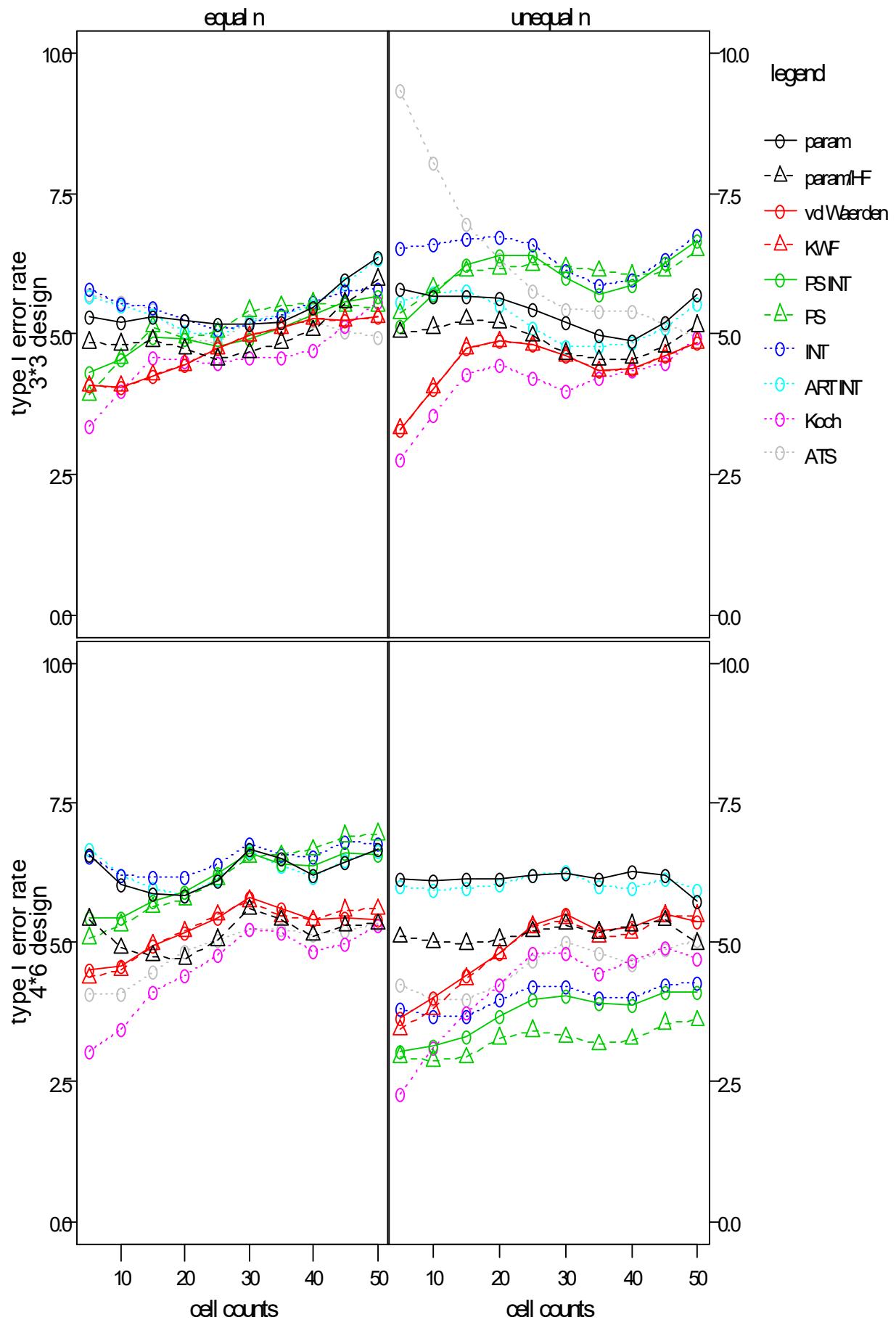
1. 8. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.23	5.26	5.30	5.24	5.35	5.06	5.03	6.17	5.67	5.33	5.51	4.89	4.62	5.38
parametric HF-adj	5.03	4.97	4.94	4.80	5.08	4.75	4.72	5.72	5.26	4.96	5.12	4.49	4.31	5.22
van der Waerden	4.42	4.65	4.96	4.75	4.86	4.89	4.72	3.93	3.92	4.21	4.54	4.58	4.47	5.08
KWF	4.40	4.62	4.94	4.71	4.85	4.86	4.72	3.92	3.90	4.22	4.58	4.59	4.49	5.00
Puri & Sen INT	4.08	4.59	5.06	5.17	5.39	4.84	4.83	4.63	4.55	4.72	5.11	4.68	4.45	4.73
Puri & Sen	4.21	4.55	4.86	4.90	5.30	4.95	4.82	5.17	5.09	5.10	5.42	4.79	4.92	5.45
INT	5.12	5.35	5.66	5.62	5.59	5.05	5.00	5.97	5.41	5.12	5.39	4.83	4.54	4.90
ART INT	5.50	5.35	5.35	5.45	5.47	5.03	5.05	5.85	5.41	5.30	5.57	4.99	4.72	5.47
Koch	3.40	4.03	4.69	4.70	4.76	4.45	4.63	3.05	3.43	3.91	4.45	4.46	4.33	4.90
ATS	6.12	5.62	5.26	5.06	5.24	4.86	4.68	11.06	8.79	6.92	6.62	5.78	5.24	5.58
large design (4*6)														
parametric	6.37	6.10	5.49	5.29	6.29	6.46	6.76	5.20	5.49	5.75	5.89	5.58	5.74	5.80
parametric HF-adj	5.82	5.44	4.75	4.53	5.47	5.59	5.82	4.61	4.89	4.99	5.11	4.89	5.12	4.97
van der Waerden	5.10	5.25	5.17	5.06	5.72	5.85	5.96	3.36	3.95	4.28	4.69	5.12	5.44	5.42
KWF	4.98	5.12	4.99	4.90	5.49	5.57	6.02	3.28	3.91	4.26	4.62	5.09	5.24	5.33
Puri & Sen INT	5.28	5.38	5.12	5.04	5.79	6.20	6.32	4.05	4.62	5.11	5.46	5.34	5.62	6.22
Puri & Sen	5.30	5.34	5.03	4.96	5.99	6.17	6.47	4.23	4.80	5.25	5.42	5.29	5.64	5.55
INT	6.32	6.23	5.83	5.56	6.09	6.33	6.59	5.32	5.56	5.69	5.80	5.53	5.88	6.47
ART INT	6.15	6.06	5.54	5.26	6.19	6.30	6.76	5.35	5.62	5.86	6.05	5.84	5.67	5.83
Koch	2.41	3.34	4.10	4.30	4.86	5.36	5.12	2.43	3.23	3.94	4.35	4.38	4.67	4.50
ATS	4.62	4.58	4.29	4.28	5.21	5.29	5.35	5.62	5.11	4.78	4.62	4.54	4.88	4.93



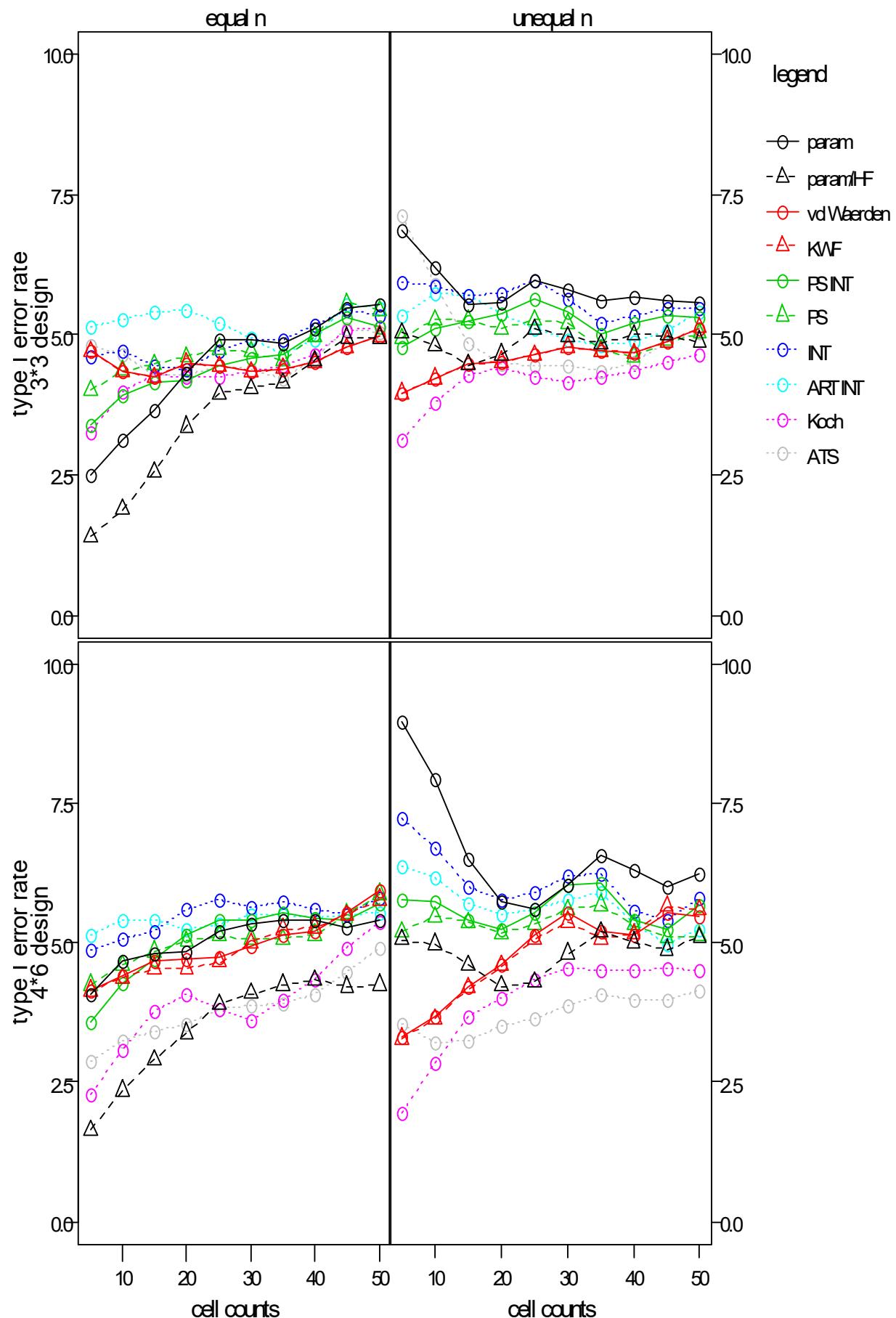
1. 8. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.29	5.21	5.30	5.25	5.16	5.47	6.37	5.79	5.66	5.68	5.65	5.20	4.89	5.69
parametric HF-adj	4.85	4.81	4.88	4.73	4.67	5.06	5.97	5.02	5.11	5.25	5.21	4.65	4.56	5.14
van der Waerden	4.07	4.06	4.26	4.45	4.97	5.26	5.30	3.30	4.03	4.75	4.86	4.60	4.38	4.84
KWF	4.07	4.06	4.26	4.45	4.97	5.26	5.30	3.30	4.03	4.75	4.86	4.60	4.38	4.84
Puri & Sen INT	4.32	4.53	4.93	4.91	4.92	5.33	5.68	5.13	5.71	6.24	6.40	5.99	5.85	6.65
Puri & Sen	3.91	4.56	5.12	4.92	5.41	5.54	5.48	5.36	5.81	6.12	6.17	6.19	6.04	6.47
INT	5.79	5.54	5.46	5.25	5.16	5.56	5.80	6.53	6.59	6.69	6.73	6.12	5.96	6.77
ART INT	5.67	5.50	5.34	5.05	5.20	5.51	6.32	5.57	5.72	5.75	5.51	4.79	4.85	5.52
Koch	3.35	3.99	4.57	4.51	4.59	4.72	5.57	2.75	3.56	4.29	4.45	3.98	4.35	4.94
ATS	5.70	5.56	5.45	4.91	5.24	5.24	4.95	9.33	8.03	6.96	6.34	5.45	5.41	4.93
large design (4*6)														
parametric	6.56	6.03	5.88	5.84	6.67	6.19	6.68	6.12	6.11	6.14	6.12	6.25	6.28	5.73
parametric HF-adj	5.41	4.89	4.75	4.71	5.60	5.12	5.33	5.10	4.99	4.97	5.04	5.32	5.31	4.98
van der Waerden	4.50	4.59	4.95	5.16	5.79	5.41	5.40	3.63	4.01	4.40	4.79	5.49	5.28	5.36
KWF	4.37	4.50	4.95	5.19	5.74	5.40	5.60	3.43	3.81	4.34	4.79	5.42	5.15	5.48
Puri & Sen INT	5.43	5.44	5.72	5.91	6.60	6.36	6.58	3.03	3.13	3.30	3.66	4.05	3.89	4.12
Puri & Sen	5.07	5.31	5.62	5.77	6.52	6.66	6.93	2.95	2.88	2.94	3.28	3.30	3.26	3.60
INT	6.54	6.19	6.16	6.18	6.77	6.54	6.78	3.82	3.66	3.67	3.96	4.22	4.00	4.28
ART INT	6.67	6.19	5.97	5.84	6.62	6.18	6.63	6.00	5.94	5.96	6.05	6.28	5.97	5.93
Koch	3.05	3.46	4.10	4.41	5.24	4.84	5.29	2.29	3.11	3.75	4.25	4.79	4.67	4.71
ATS	4.07	4.09	4.47	4.85	5.24	5.14	5.35	4.25	3.99	3.96	4.25	5.01	4.62	5.05



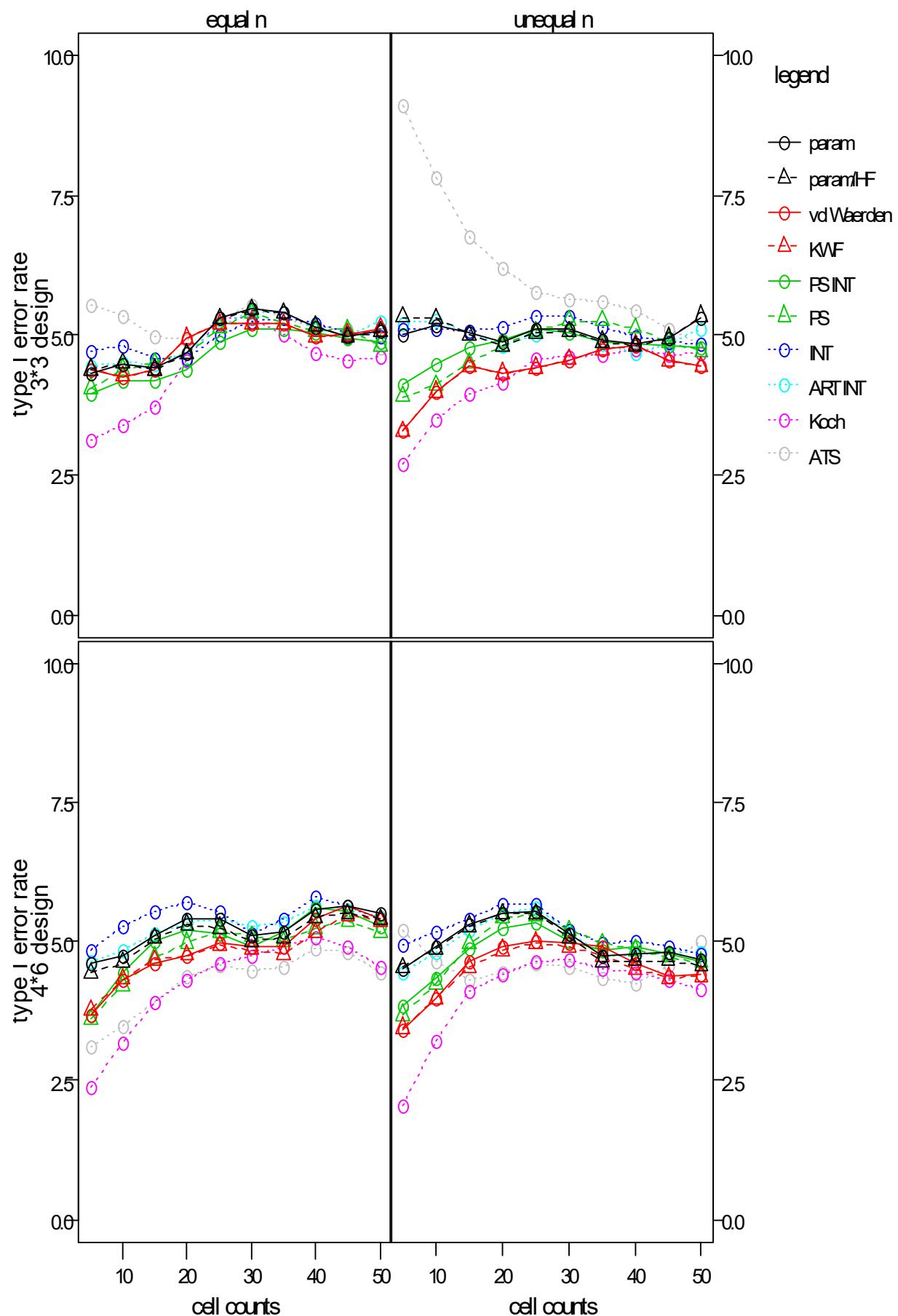
1. 8. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.51	3.11	3.66	4.31	4.90	5.12	5.52	6.85	6.21	5.53	5.58	5.80	5.66	5.57
parametric HF-adj	1.40	1.88	2.55	3.36	4.04	4.54	4.95	5.03	4.80	4.46	4.65	4.96	5.00	4.88
van der Waerden	4.70	4.33	4.24	4.49	4.34	4.50	4.98	3.95	4.22	4.47	4.51	4.78	4.67	5.12
KWF	4.70	4.33	4.24	4.49	4.34	4.50	4.98	3.95	4.22	4.47	4.51	4.78	4.67	5.12
Puri & Sen INT	3.40	3.93	4.15	4.17	4.59	5.01	5.15	4.78	5.10	5.25	5.38	5.39	5.19	5.32
Puri & Sen	4.00	4.36	4.47	4.60	4.69	4.96	5.43	4.93	5.26	5.25	5.09	5.19	4.62	5.02
INT	4.61	4.70	4.46	4.38	4.90	5.16	5.35	5.92	5.85	5.69	5.72	5.62	5.34	5.47
ART INT	5.15	5.26	5.39	5.45	4.94	4.90	5.46	5.33	5.72	5.71	5.38	4.91	4.86	5.40
Koch	3.24	3.97	4.29	4.24	4.35	4.65	5.15	3.14	3.79	4.29	4.42	4.14	4.36	4.65
ATS	4.82	4.65	4.29	4.28	4.38	4.59	5.03	7.13	5.89	4.85	4.49	4.45	4.50	5.03
large design (4*6)														
parametric	4.06	4.66	4.79	4.83	5.33	5.39	5.42	8.95	7.92	6.50	5.74	6.04	6.31	6.22
parametric HF-adj	1.64	2.35	2.90	3.38	4.09	4.33	4.25	5.05	4.97	4.60	4.22	4.81	5.01	5.10
van der Waerden	4.13	4.40	4.67	4.72	4.95	5.19	5.92	3.30	3.69	4.21	4.60	5.54	5.15	5.48
KWF	4.15	4.36	4.54	4.54	4.99	5.28	5.77	3.28	3.63	4.19	4.59	5.38	5.16	5.60
Puri & Sen INT	3.59	4.26	4.71	5.14	5.40	5.44	5.70	5.78	5.75	5.39	5.24	6.03	5.40	5.67
Puri & Sen	4.25	4.60	4.84	5.03	5.07	5.14	5.87	5.20	5.46	5.36	5.16	5.60	5.32	5.12
INT	4.88	5.08	5.22	5.61	5.65	5.61	5.80	7.22	6.71	6.00	5.78	6.21	5.58	5.80
ART INT	5.15	5.42	5.39	5.25	5.51	5.44	5.53	6.38	6.18	5.69	5.50	5.77	5.34	5.25
Koch	2.28	3.08	3.78	4.06	3.61	4.34	5.38	1.94	2.84	3.66	4.00	4.55	4.50	4.52
ATS	2.88	3.24	3.40	3.56	3.86	4.08	4.90	3.55	3.22	3.25	3.52	3.86	3.96	4.13



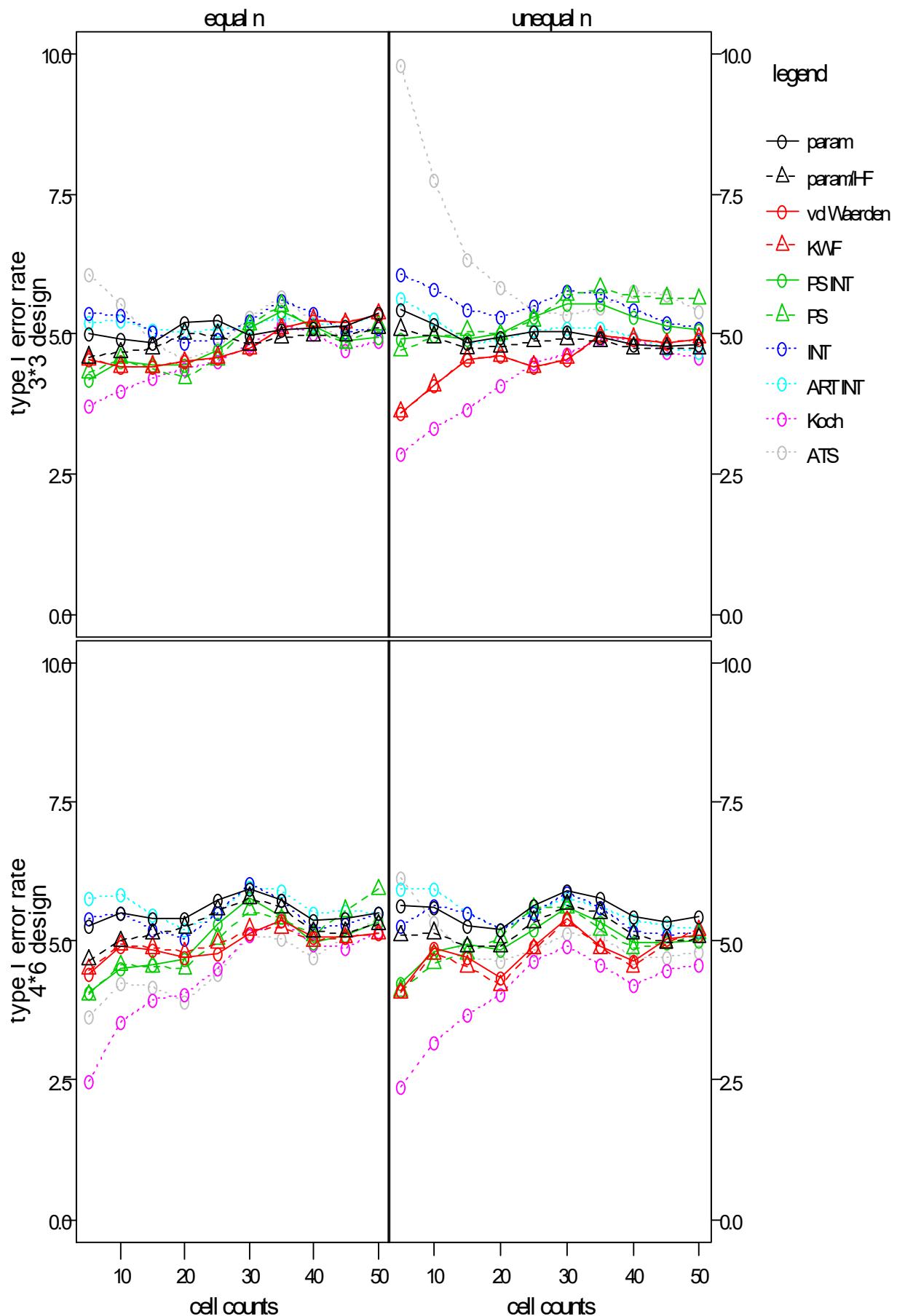
1. 8. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.31	4.49	4.41	4.67	5.47	5.15	5.08	5.00	5.16	5.04	4.88	5.12	4.83	5.29
parametric HF-adj	4.38	4.49	4.38	4.67	5.45	5.15	5.05	5.32	5.29	5.00	4.81	5.06	4.80	5.34
van der Waerden	4.38	4.26	4.38	4.95	5.21	4.96	5.12	3.28	3.98	4.43	4.31	4.56	4.82	4.43
KWF	4.38	4.26	4.38	4.95	5.21	4.96	5.12	3.28	3.98	4.43	4.31	4.56	4.82	4.43
Puri & Sen INT	3.96	4.18	4.18	4.38	5.10	5.05	4.88	4.10	4.47	4.76	4.91	5.05	4.83	4.77
Puri & Sen	4.05	4.38	4.50	4.66	5.39	5.08	4.81	3.90	4.10	4.50	4.80	5.25	5.12	4.70
INT	4.71	4.80	4.57	4.58	5.25	5.21	4.97	5.12	5.10	5.08	5.15	5.35	4.96	4.83
ART INT	4.45	4.51	4.47	4.69	5.40	5.11	5.25	5.22	5.26	5.05	4.80	5.11	4.68	5.09
Koch	3.13	3.40	3.71	4.54	5.31	4.66	4.60	2.68	3.50	3.94	4.15	4.60	4.74	4.67
ATS	5.55	5.35	4.97	4.90	5.53	5.14	4.78	9.11	7.81	6.75	6.19	5.62	5.42	4.85
large design (4*6)														
parametric	4.60	4.74	5.10	5.41	5.11	5.57	5.50	4.50	4.91	5.29	5.49	5.15	4.78	4.68
parametric HF-adj	4.43	4.62	5.05	5.31	5.00	5.43	5.40	4.53	4.86	5.28	5.50	5.06	4.65	4.57
van der Waerden	3.66	4.30	4.62	4.74	4.89	5.40	5.41	3.40	3.99	4.65	4.92	4.97	4.61	4.40
KWF	3.76	4.32	4.66	4.75	4.85	5.16	5.36	3.45	3.96	4.53	4.84	4.91	4.51	4.38
Puri & Sen INT	3.69	4.44	4.99	5.21	4.89	5.61	5.28	3.85	4.34	4.86	5.24	5.01	4.89	4.65
Puri & Sen	3.60	4.21	4.71	4.98	5.10	5.24	5.18	3.68	4.24	4.95	5.43	5.20	4.84	4.62
INT	4.85	5.28	5.54	5.70	5.14	5.79	5.42	4.95	5.16	5.39	5.68	5.21	5.00	4.78
ART INT	4.63	4.85	5.14	5.33	5.26	5.62	5.43	4.43	4.80	5.19	5.50	5.16	4.75	4.82
Koch	2.38	3.19	3.91	4.30	4.73	5.07	4.55	2.04	3.20	4.11	4.40	4.66	4.43	4.13
ATS	3.11	3.48	3.91	4.36	4.49	4.86	4.43	5.19	4.65	4.31	4.44	4.55	4.25	5.00



1. 8. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.02	4.91	4.85	5.20	4.99	5.09	5.37	5.43	5.16	4.85	4.93	5.03	4.80	4.80
parametric HF-adj	4.58	4.66	4.74	5.01	4.81	4.96	5.10	5.08	4.94	4.74	4.78	4.91	4.75	4.75
van der Waerden	4.54	4.41	4.41	4.50	4.74	5.24	5.35	3.60	4.09	4.56	4.62	4.56	4.91	4.92
KWF	4.54	4.41	4.41	4.50	4.74	5.24	5.35	3.60	4.09	4.56	4.62	4.56	4.91	4.92
Puri & Sen INT	4.18	4.51	4.46	4.44	5.12	5.14	4.93	4.90	4.99	4.91	5.00	5.54	5.30	5.07
Puri & Sen	4.31	4.56	4.39	4.22	5.16	5.08	5.15	4.70	4.95	5.05	5.00	5.69	5.67	5.62
INT	5.37	5.35	5.04	4.84	5.25	5.36	5.10	6.05	5.79	5.42	5.31	5.75	5.44	5.10
ART INT	5.21	5.25	5.06	5.03	5.15	5.17	5.35	5.63	5.28	4.83	4.88	5.11	4.95	4.68
Koch	3.71	3.97	4.22	4.38	4.80	5.01	4.87	2.85	3.31	3.66	4.09	4.65	4.92	4.57
ATS	6.05	5.54	4.84	4.56	5.31	5.20	5.17	9.78	7.75	6.34	5.82	5.34	5.75	5.40
large design (4*6)														
parametric	5.26	5.51	5.40	5.41	5.94	5.38	5.52	5.62	5.59	5.27	5.22	5.91	5.44	5.45
parametric HF-adj	4.65	5.00	5.12	5.24	5.77	5.16	5.30	5.10	5.14	4.90	4.89	5.65	5.12	5.05
van der Waerden	4.41	4.89	4.83	4.69	5.14	5.08	5.13	4.12	4.86	4.71	4.34	5.39	4.65	5.10
KWF	4.49	4.93	4.88	4.80	5.21	4.99	5.13	4.07	4.76	4.54	4.20	5.36	4.55	5.20
Puri & Sen INT	4.08	4.51	4.56	4.68	5.78	4.96	5.35	4.25	4.79	4.94	4.83	5.59	4.96	5.00
Puri & Sen	4.03	4.56	4.55	4.51	5.55	5.10	5.93	4.11	4.61	4.76	5.06	5.61	4.86	5.12
INT	5.40	5.51	5.21	5.05	6.04	5.22	5.50	5.28	5.62	5.51	5.21	5.88	5.16	5.17
ART INT	5.78	5.84	5.46	5.22	5.96	5.50	5.50	5.93	5.92	5.50	5.22	5.76	5.38	5.22
Koch	2.47	3.53	3.95	4.05	5.10	4.94	5.18	2.39	3.19	3.67	4.05	4.92	4.21	4.56
ATS	3.63	4.24	4.19	3.92	5.12	4.72	5.40	6.14	5.34	4.69	4.65	5.14	4.72	4.82

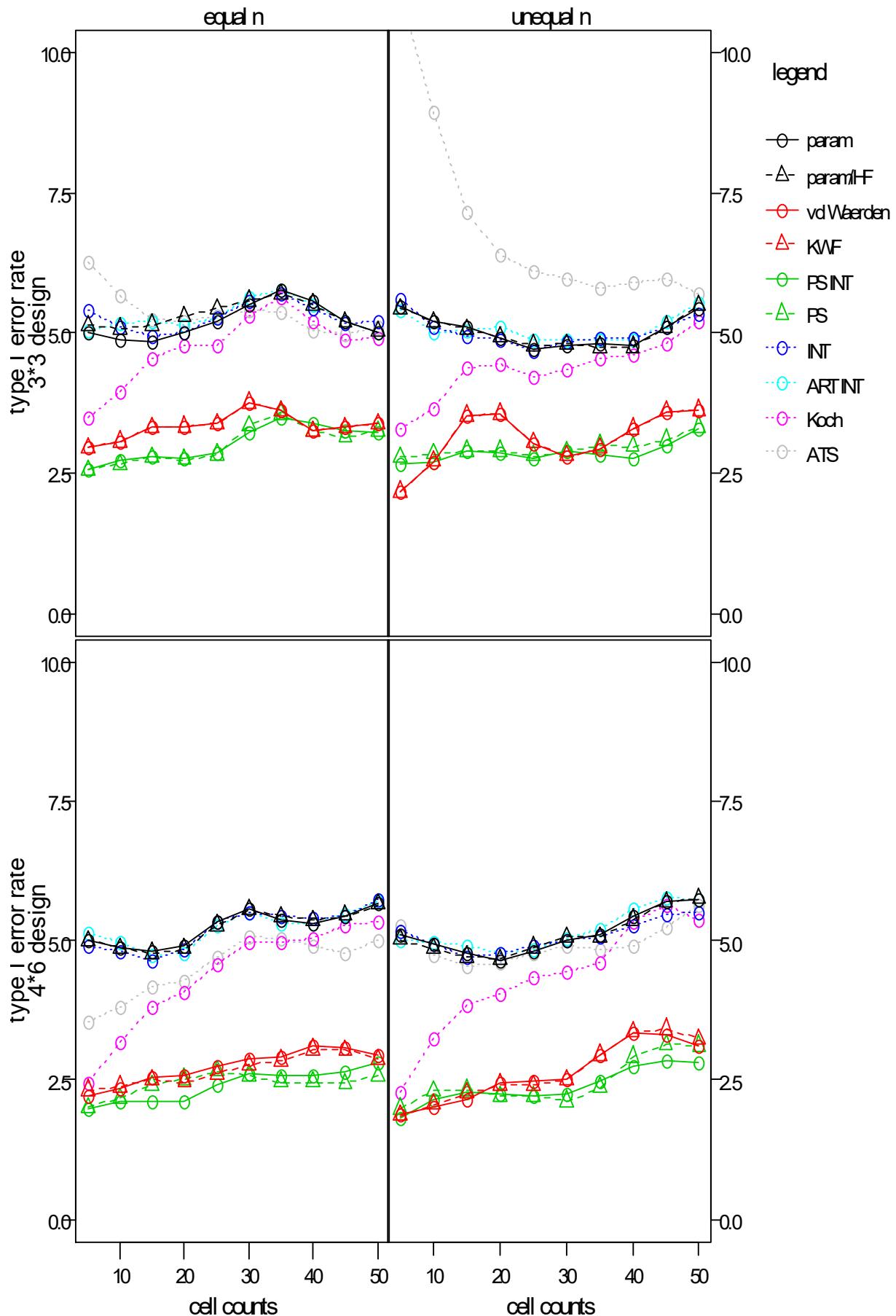


1. 9. Interaction effect AB - B significant (effects $b_i=0.5*s$)

1. 9. 1. equal correlations on B ($r=0.3$)

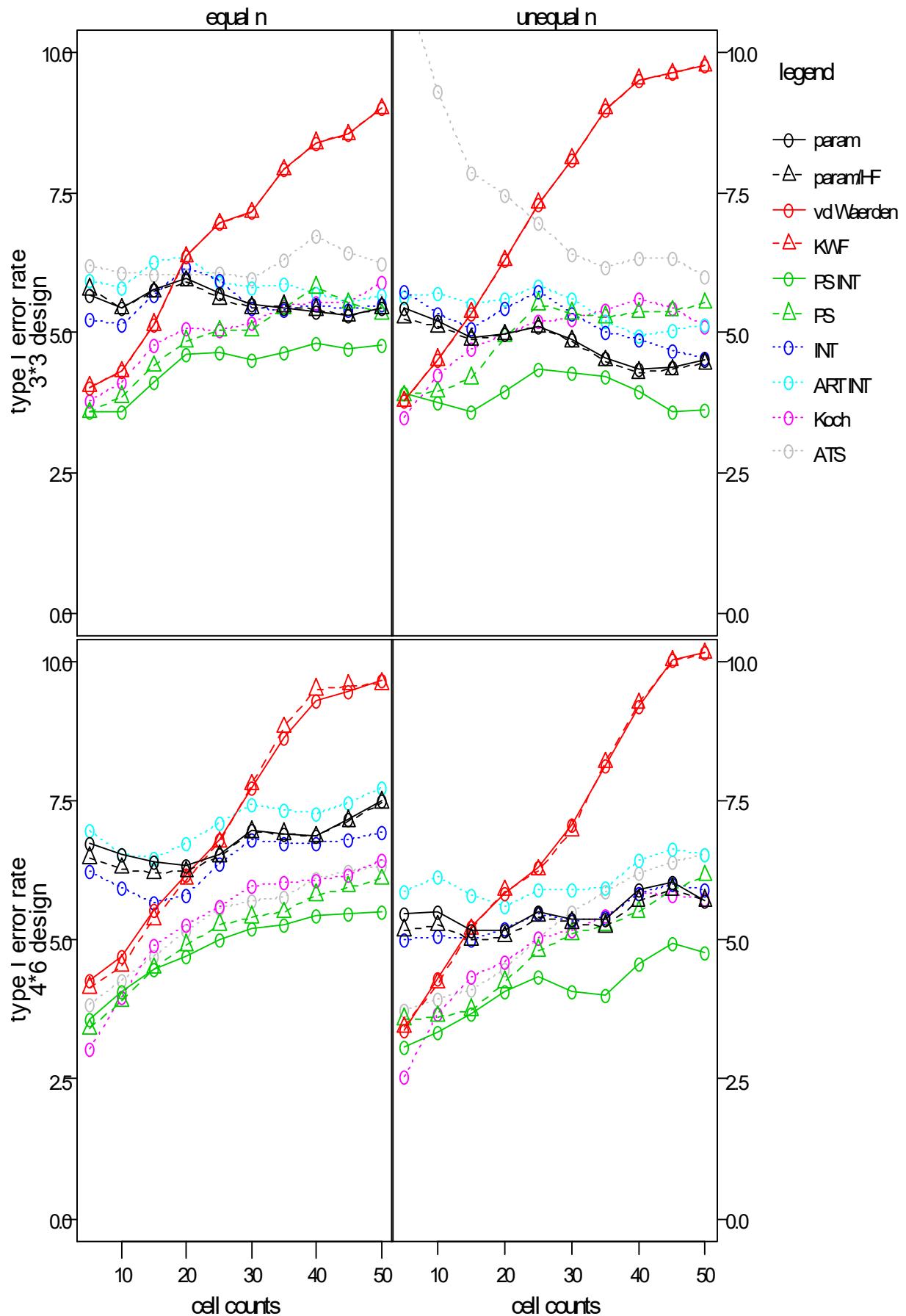
1. 9. 1. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.00	4.88	4.85	5.01	5.51	5.56	5.02	5.47	5.22	5.10	4.91	4.79	4.79	5.45
parametric HF-adj	5.13	5.08	5.14	5.29	5.57	5.51	5.02	5.42	5.20	5.06	4.92	4.80	4.74	5.49
van der Waerden	2.95	3.06	3.31	3.33	3.75	3.24	3.38	2.17	2.71	3.53	3.56	2.81	3.29	3.62
KWF	2.95	3.06	3.31	3.33	3.75	3.24	3.38	2.17	2.71	3.53	3.56	2.81	3.29	3.62
Puri & Sen INT	2.57	2.73	2.81	2.77	3.21	3.39	3.22	2.67	2.70	2.89	2.85	2.90	2.75	3.29
Puri & Sen	2.55	2.65	2.79	2.74	3.34	3.25	3.25	2.78	2.84	2.90	2.89	2.88	2.97	3.32
INT	5.39	5.12	4.94	5.01	5.56	5.44	5.22	5.59	5.12	4.95	4.86	4.83	4.90	5.35
ART INT	5.03	5.16	5.21	5.14	5.62	5.51	5.00	5.39	5.01	5.03	5.09	4.89	4.88	5.55
Koch	3.48	3.96	4.56	4.76	5.32	5.19	4.92	3.28	3.66	4.39	4.46	4.34	4.61	5.20
ATS	6.25	5.67	5.25	5.22	5.41	5.05	5.12	11.05	8.93	7.16	6.40	5.96	5.89	5.71
large design (4*6)														
parametric	5.02	4.88	4.81	4.91	5.58	5.31	5.67	5.10	4.94	4.76	4.65	5.00	5.45	5.75
parametric HF-adj	5.00	4.86	4.78	4.85	5.55	5.36	5.65	5.02	4.85	4.71	4.66	5.06	5.38	5.75
van der Waerden	2.23	2.36	2.56	2.58	2.89	3.10	2.93	1.88	2.00	2.15	2.44	2.51	3.33	3.10
KWF	2.32	2.39	2.50	2.46	2.77	3.05	2.87	1.86	2.06	2.26	2.42	2.50	3.36	3.23
Puri & Sen INT	1.97	2.12	2.12	2.12	2.60	2.59	2.80	1.80	2.14	2.29	2.25	2.26	2.74	2.82
Puri & Sen	2.00	2.17	2.41	2.52	2.59	2.46	2.57	1.98	2.30	2.32	2.20	2.12	2.91	3.12
INT	4.90	4.80	4.65	4.83	5.50	5.39	5.74	5.18	4.95	4.72	4.76	5.01	5.28	5.52
ART INT	5.13	4.96	4.74	4.78	5.49	5.31	5.70	5.00	4.96	4.90	4.78	5.03	5.56	5.73
Koch	2.46	3.17	3.81	4.06	4.97	5.05	5.35	2.29	3.23	3.84	4.03	4.45	5.33	5.38
ATS	3.53	3.81	4.17	4.28	5.07	4.91	5.00	5.27	4.75	4.55	4.60	4.92	4.90	5.62



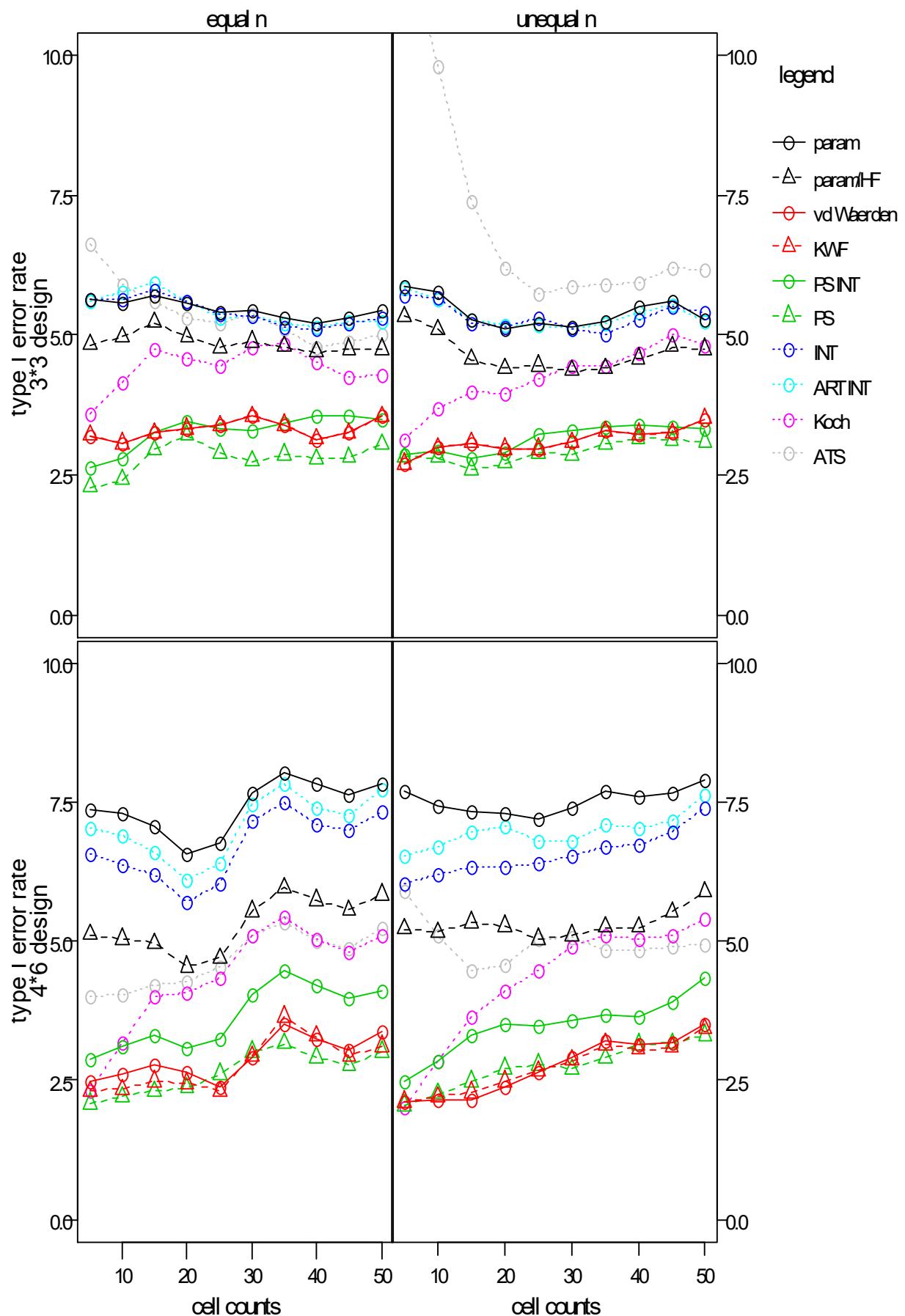
1. 9. 1. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.67	5.43	5.76	5.97	5.50	5.37	5.42	5.43	5.21	4.90	4.96	4.86	4.34	4.50
parametric HF-adj	5.77	5.42	5.72	5.91	5.44	5.41	5.44	5.25	5.09	4.88	4.97	4.85	4.28	4.45
van der Waerden	4.03	4.30	5.14	6.35	7.15	8.38	8.99	3.78	4.51	5.35	6.29	8.09	9.51	9.75
KWF	4.03	4.30	5.14	6.35	7.15	8.38	8.99	3.78	4.51	5.35	6.29	8.09	9.51	9.75
Puri & Sen INT	3.59	3.60	4.10	4.60	4.50	4.80	4.77	3.93	3.76	3.60	3.95	4.29	3.94	3.62
Puri & Sen	3.58	3.85	4.40	4.85	5.03	5.80	5.33	3.88	3.94	4.19	4.92	5.34	5.36	5.52
INT	5.25	5.15	5.66	6.15	5.44	5.50	5.49	5.74	5.33	5.07	5.44	5.33	4.89	4.55
ART INT	5.92	5.81	6.27	6.35	5.79	5.71	5.67	5.65	5.69	5.49	5.59	5.61	4.95	5.15
Koch	3.77	4.10	4.79	5.06	5.18	5.55	5.89	3.48	4.24	4.70	4.96	5.25	5.59	5.10
ATS	6.20	6.06	6.04	6.04	5.96	6.71	6.22	11.25	9.30	7.86	7.46	6.40	6.34	6.01
large design (4*6)														
parametric	6.72	6.54	6.41	6.34	6.96	6.86	7.50	5.48	5.51	5.16	5.16	5.38	5.90	5.71
parametric HF-adj	6.47	6.28	6.21	6.22	6.94	6.86	7.47	5.18	5.26	5.01	5.05	5.31	5.71	5.70
van der Waerden	4.27	4.70	5.54	6.16	7.74	9.29	9.64	3.38	4.31	5.24	5.84	7.05	9.18	10.15
KWF	4.15	4.54	5.38	6.08	7.78	9.49	9.59	3.43	4.22	5.19	5.88	6.97	9.25	10.15
Puri & Sen INT	3.58	4.07	4.46	4.69	5.21	5.44	5.49	3.07	3.33	3.66	4.06	4.06	4.59	4.76
Puri & Sen	3.40	3.90	4.49	4.91	5.41	5.80	6.09	3.58	3.62	3.75	4.24	5.11	5.51	6.15
INT	6.22	5.92	5.66	5.81	6.79	6.72	6.94	5.00	5.07	5.00	5.19	5.33	5.82	5.90
ART INT	6.95	6.54	6.47	6.74	7.44	7.28	7.74	5.86	6.14	5.81	5.59	5.89	6.44	6.55
Koch	3.04	3.96	4.91	5.26	5.96	6.08	6.44	2.56	3.67	4.35	4.60	5.16	5.84	5.72
ATS	3.85	4.26	4.72	5.16	5.69	6.11	6.34	3.75	3.95	4.10	4.49	5.49	6.19	6.55



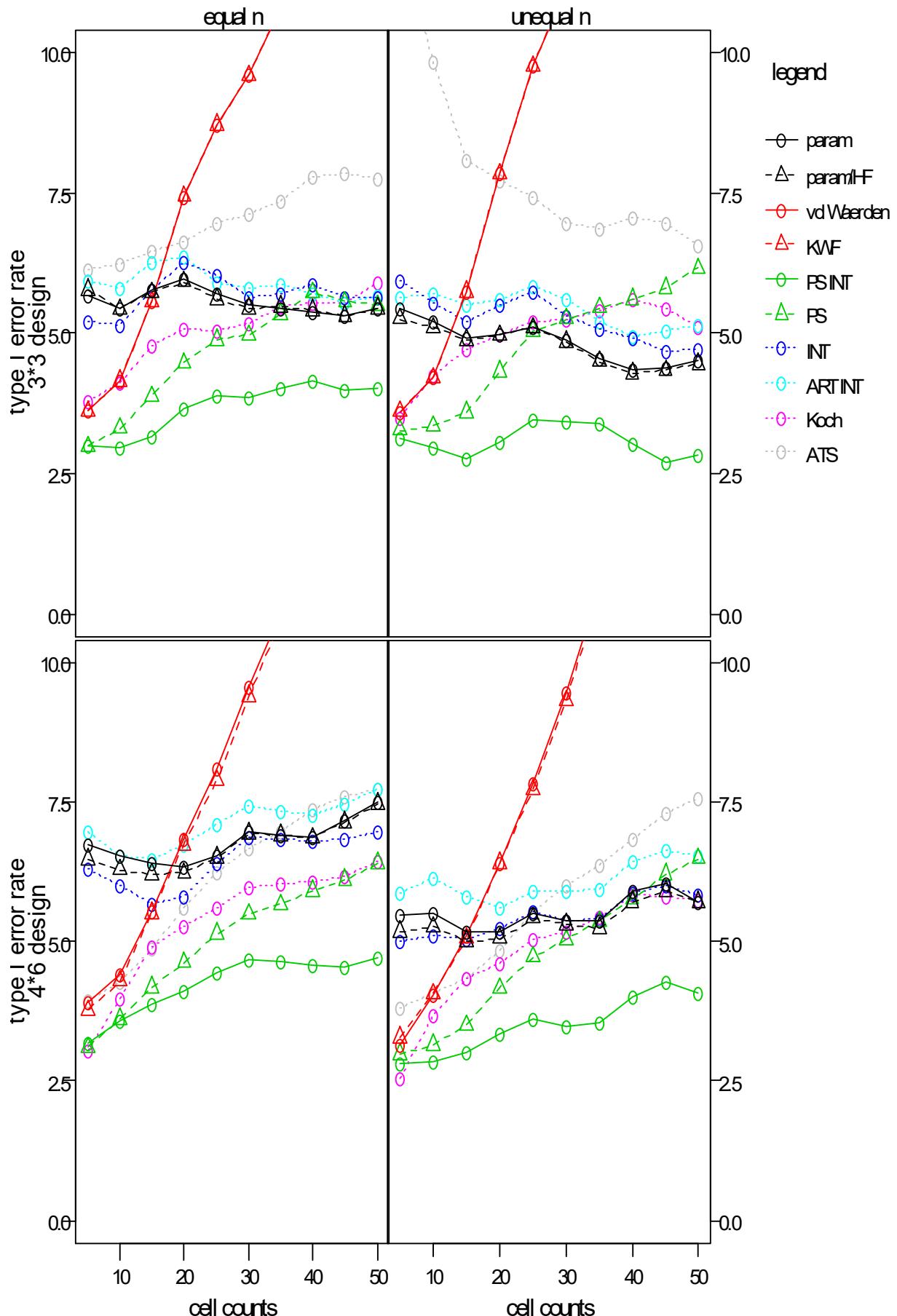
1. 9. 1. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.62	5.57	5.71	5.58	5.44	5.19	5.42	5.85	5.75	5.27	5.11	5.14	5.49	5.28
parametric HF-adj	4.82	4.97	5.22	4.96	4.88	4.69	4.75	5.33	5.10	4.56	4.40	4.36	4.58	4.75
van der Waerden	3.20	3.06	3.25	3.32	3.55	3.14	3.54	2.70	2.98	3.07	2.96	3.08	3.23	3.50
KWF	3.20	3.06	3.25	3.32	3.55	3.14	3.54	2.70	2.98	3.07	2.96	3.08	3.23	3.50
Puri & Sen INT	2.63	2.79	3.26	3.45	3.30	3.55	3.50	2.85	2.92	2.80	2.90	3.30	3.38	3.33
Puri & Sen	2.28	2.41	2.95	3.20	2.74	2.79	3.05	2.82	2.81	2.60	2.71	2.85	3.15	3.10
INT	5.65	5.64	5.81	5.60	5.33	5.10	5.32	5.71	5.66	5.22	5.14	5.09	5.28	5.40
ART INT	5.60	5.75	5.92	5.59	5.34	5.15	5.23	5.83	5.64	5.26	5.16	5.11	5.41	5.25
Koch	3.60	4.14	4.75	4.59	4.76	4.52	4.29	3.13	3.69	3.97	3.96	4.46	4.68	4.81
ATS	6.61	5.91	5.60	5.31	5.36	4.79	5.02	12.22	9.78	7.40	6.19	5.88	5.92	6.16
large design (4*6)														
parametric	7.37	7.30	7.08	6.56	7.66	7.83	7.84	7.69	7.44	7.32	7.30	7.40	7.60	7.88
parametric HF-adj	5.12	5.04	4.96	4.55	5.54	5.74	5.84	5.22	5.16	5.34	5.28	5.11	5.25	5.88
van der Waerden	2.48	2.60	2.77	2.64	2.90	3.23	3.37	2.13	2.16	2.16	2.39	2.91	3.14	3.52
KWF	2.30	2.34	2.48	2.45	2.94	3.29	3.12	2.12	2.21	2.28	2.49	2.86	3.06	3.44
Puri & Sen INT	2.87	3.11	3.31	3.08	4.03	4.21	4.12	2.48	2.85	3.31	3.50	3.58	3.64	4.35
Puri & Sen	2.08	2.20	2.31	2.36	3.01	2.92	3.02	2.05	2.26	2.49	2.71	2.70	3.15	3.32
INT	6.57	6.36	6.19	5.71	7.18	7.09	7.32	6.03	6.19	6.33	6.35	6.53	6.74	7.39
ART INT	7.02	6.91	6.60	6.09	7.45	7.41	7.72	6.53	6.69	6.97	7.06	6.81	7.02	7.62
Koch	2.33	3.19	4.01	4.08	5.09	5.05	5.09	2.03	2.85	3.65	4.11	4.90	5.03	5.40
ATS	4.00	4.03	4.20	4.28	5.12	5.00	5.24	5.89	5.11	4.49	4.58	5.08	4.85	4.95



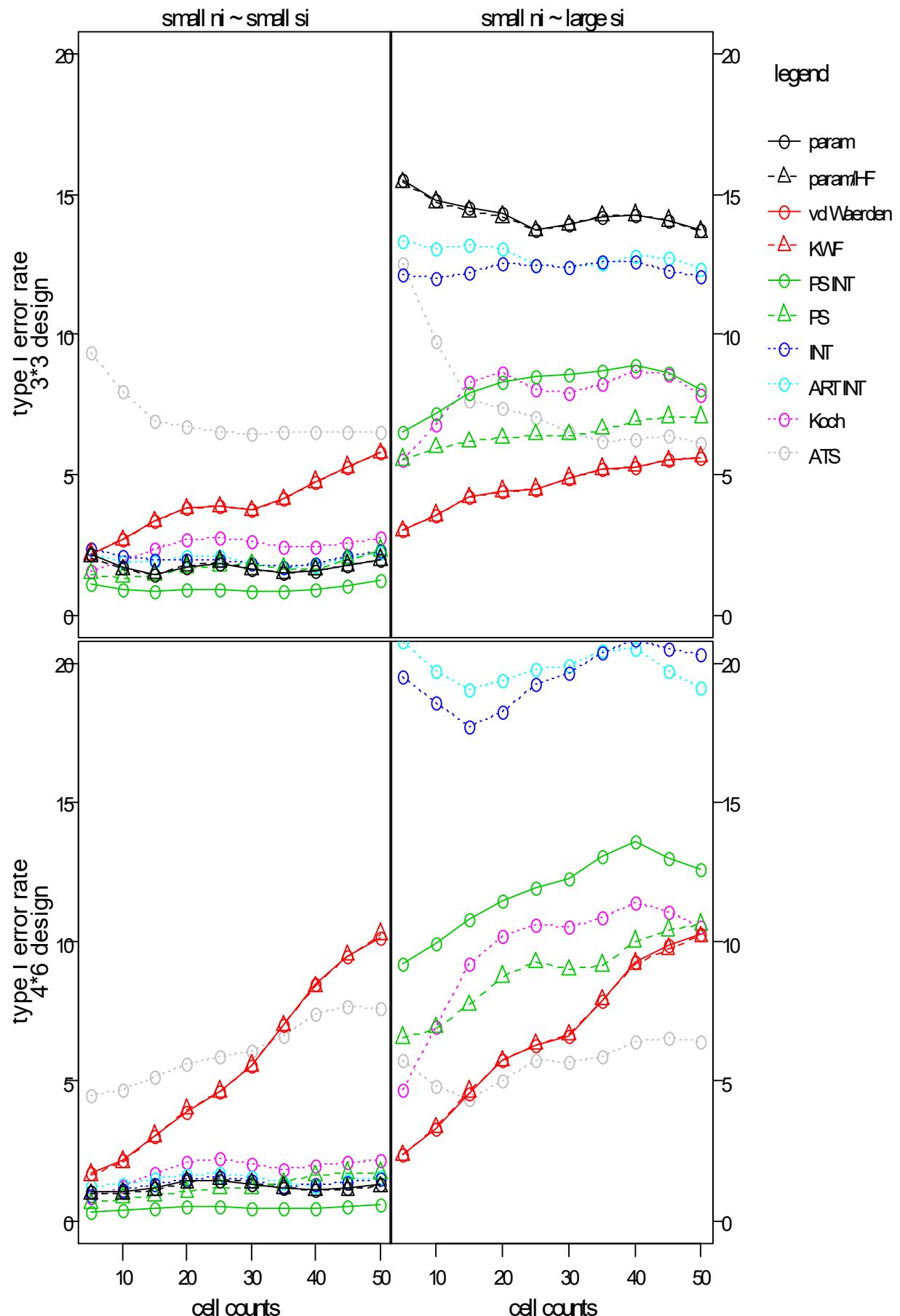
1. 9. 1. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.67	5.43	5.76	5.97	5.50	5.37	5.42	5.43	5.21	4.90	4.96	4.86	4.34	4.50
parametric HF-adj	5.77	5.42	5.72	5.91	5.44	5.41	5.44	5.25	5.09	4.88	4.97	4.85	4.28	4.45
van der Waerden	3.61	4.15	5.56	7.43	9.59	12.00	13.49	3.60	4.21	5.74	7.84	11.16	14.69	17.06
KWF	3.61	4.15	5.56	7.43	9.59	12.00	13.49	3.60	4.21	5.74	7.84	11.16	14.69	17.06
Puri & Sen INT	2.98	2.95	3.17	3.64	3.84	4.14	4.02	3.12	2.96	2.77	3.06	3.42	3.04	2.84
Puri & Sen	2.98	3.30	3.88	4.47	4.96	5.72	5.49	3.27	3.34	3.59	4.31	5.25	5.60	6.15
INT	5.20	5.15	5.78	6.25	5.64	5.85	5.62	5.94	5.54	5.19	5.49	5.31	4.90	4.70
ART INT	5.92	5.81	6.27	6.35	5.79	5.71	5.67	5.65	5.69	5.49	5.59	5.61	4.95	5.15
Koch	3.77	4.10	4.79	5.06	5.18	5.55	5.89	3.48	4.24	4.70	4.96	5.25	5.59	5.10
ATS	6.13	6.22	6.46	6.64	7.12	7.78	7.75	12.10	9.84	8.07	7.71	6.97	7.07	6.55
large design (4*6)														
parametric	6.72	6.54	6.41	6.34	6.96	6.86	7.50	5.48	5.51	5.16	5.16	5.38	5.90	5.71
parametric HF-adj	6.47	6.28	6.21	6.22	6.94	6.86	7.47	5.18	5.26	5.01	5.05	5.31	5.71	5.70
van der Waerden	3.91	4.42	5.53	6.83	9.57	11.90	14.48	3.13	4.03	5.09	6.41	9.47	12.55	14.20
KWF	3.77	4.29	5.51	6.74	9.39	11.78	14.24	3.28	4.06	5.05	6.40	9.32	12.34	14.05
Puri & Sen INT	3.18	3.59	3.89	4.12	4.66	4.59	4.70	2.82	2.85	3.00	3.36	3.48	4.02	4.08
Puri & Sen	3.10	3.61	4.18	4.62	5.50	5.91	6.40	2.98	3.15	3.50	4.16	5.03	5.76	6.48
INT	6.30	5.99	5.66	5.81	6.88	6.79	6.97	5.00	5.11	5.05	5.25	5.36	5.86	5.82
ART INT	6.95	6.54	6.47	6.74	7.44	7.28	7.74	5.86	6.14	5.81	5.59	5.89	6.44	6.55
Koch	3.04	3.96	4.91	5.26	5.96	6.08	6.44	2.56	3.67	4.35	4.60	5.16	5.84	5.72
ATS	3.93	4.28	4.88	5.60	6.65	7.36	7.72	3.81	4.09	4.33	4.85	5.99	6.83	7.57



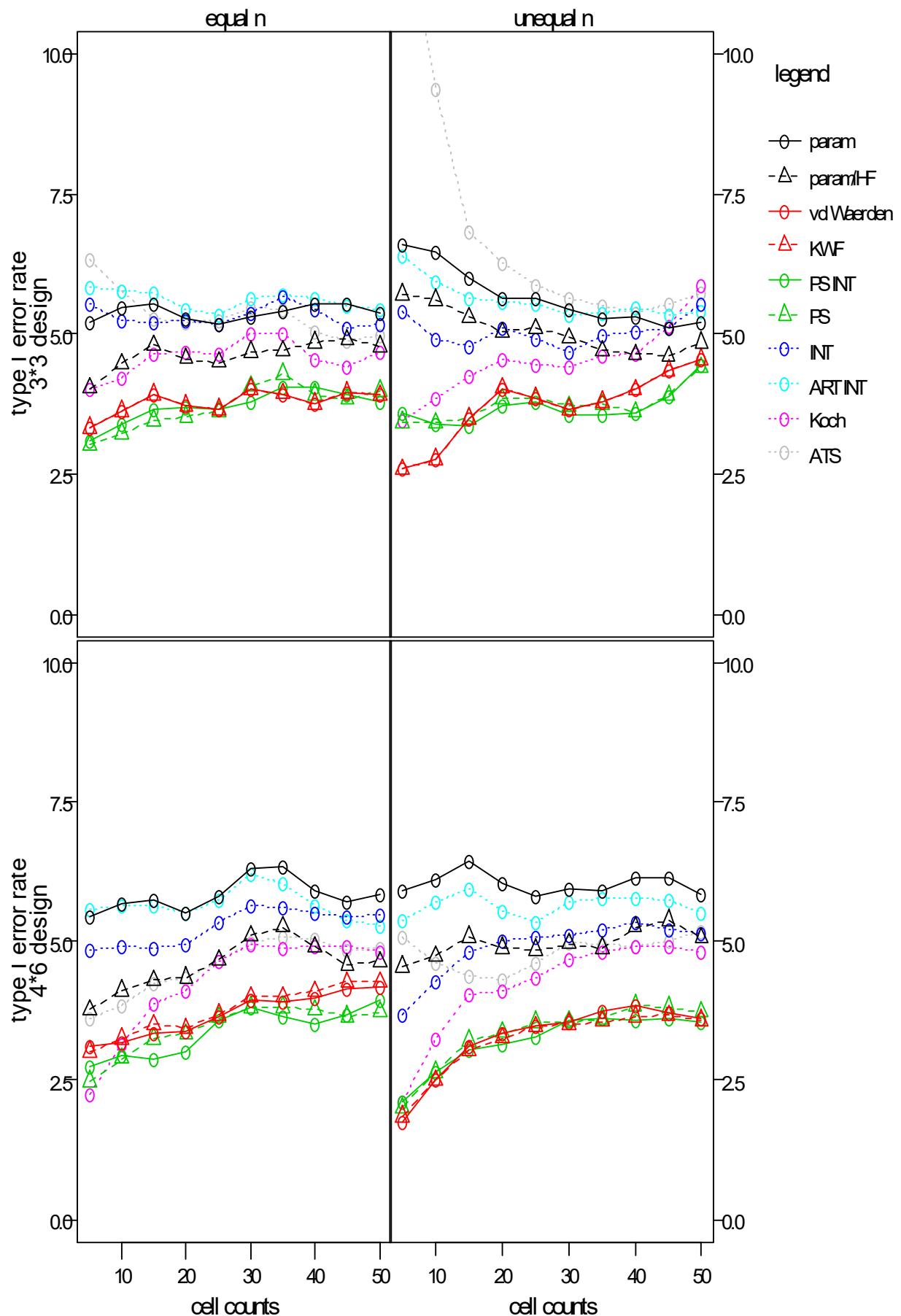
1. 9. 1. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.15	1.68	1.45	1.70	1.62	1.56	1.95	15.49	14.75	14.52	14.29	13.93	14.25	13.68
parametric HF-adj	2.05	1.60	1.45	1.76	1.64	1.59	1.95	15.40	14.71	14.39	14.18	13.89	14.25	13.65
van der Waerden	2.16	2.67	3.32	3.79	3.71	4.74	5.77	2.98	3.55	4.19	4.40	4.86	5.29	5.62
KWF	2.16	2.67	3.32	3.79	3.71	4.74	5.77	2.98	3.55	4.19	4.40	4.86	5.29	5.62
Puri & Sen INT	1.12	0.91	0.81	0.89	0.84	0.89	1.25	6.51	7.17	7.92	8.32	8.57	8.89	8.05
Puri & Sen	1.45	1.32	1.44	1.65	1.80	1.64	2.29	5.53	5.94	6.17	6.29	6.41	6.93	7.05
INT	2.37	2.11	1.96	1.98	1.81	1.80	2.29	12.10	12.00	12.22	12.55	12.42	12.60	12.03
ART INT	2.15	1.88	1.89	2.09	1.85	1.76	2.22	13.34	13.05	13.16	13.08	12.38	12.76	12.31
Koch	1.55	1.91	2.38	2.65	2.59	2.39	2.77	5.51	6.79	8.32	8.64	7.90	8.70	7.81
ATS	9.36	7.99	6.93	6.74	6.43	6.51	6.52	12.55	9.72	7.66	7.39	6.54	6.26	6.10
large design (4*6)														
parametric	1.03	1.04	1.19	1.43	1.32	1.09	1.28	24.95	23.33	22.24	22.61	23.15	24.29	22.72
parametric HF-adj	0.95	0.97	1.12	1.39	1.35	1.08	1.23	24.50	22.91	21.86	22.36	22.84	24.10	22.63
van der Waerden	1.70	2.18	3.01	3.89	5.53	8.49	10.12	2.38	3.29	4.58	5.75	6.60	9.27	10.27
KWF	1.65	2.11	3.05	3.99	5.56	8.40	10.27	2.34	3.34	4.64	5.75	6.66	9.23	10.19
Puri & Sen INT	0.32	0.39	0.44	0.50	0.44	0.42	0.58	9.23	9.94	10.82	11.48	12.27	13.59	12.57
Puri & Sen	0.61	0.80	0.90	1.02	1.18	1.61	1.72	6.57	6.91	7.74	8.75	9.00	10.01	10.62
INT	0.93	1.09	1.33	1.52	1.41	1.29	1.50	19.49	18.60	17.75	18.23	19.66	20.86	20.30
ART INT	1.25	1.30	1.48	1.65	1.57	1.26	1.60	20.78	19.68	19.05	19.38	19.93	20.54	19.12
Koch	0.86	1.27	1.72	2.09	2.01	1.95	2.15	4.69	6.94	9.20	10.20	10.53	11.41	10.57
ATS	4.50	4.70	5.14	5.61	6.08	7.39	7.60	5.79	4.81	4.35	5.00	5.71	6.45	6.43



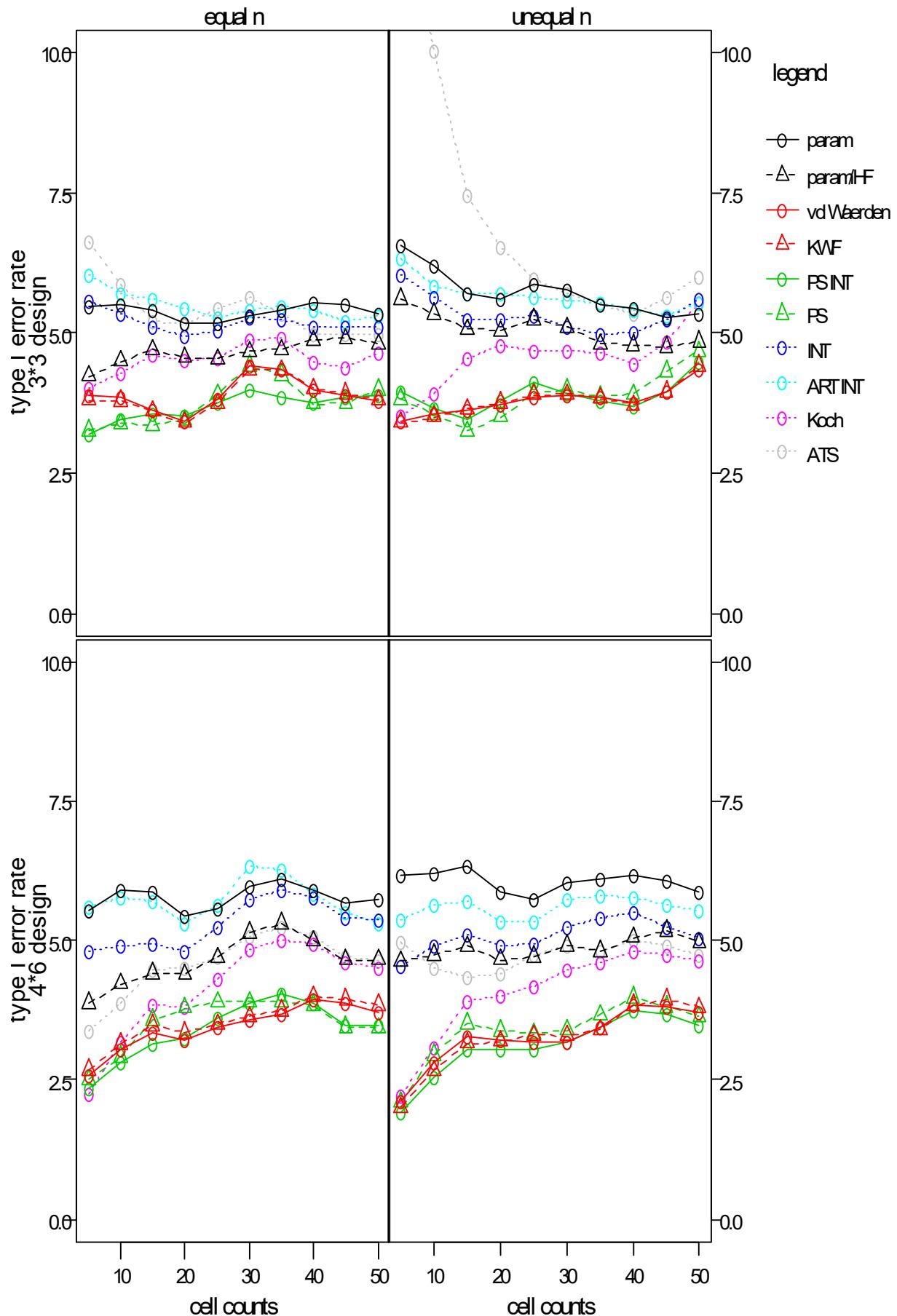
1. 9. 1. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.21	5.46	5.55	5.28	5.31	5.55	5.38	6.58	6.45	6.01	5.65	5.44	5.29	5.20
parametric HF-adj	4.03	4.47	4.80	4.56	4.68	4.85	4.78	5.70	5.61	5.30	5.03	4.93	4.64	4.85
van der Waerden	3.32	3.62	3.92	3.72	4.02	3.76	3.91	2.58	2.76	3.49	4.03	3.66	4.01	4.55
KWF	3.32	3.62	3.92	3.72	4.02	3.76	3.91	2.58	2.76	3.49	4.03	3.66	4.01	4.55
Puri & Sen INT	3.08	3.38	3.64	3.68	3.79	4.06	3.80	3.58	3.39	3.36	3.71	3.56	3.58	4.45
Puri & Sen	3.02	3.23	3.46	3.52	4.06	3.92	3.98	3.43	3.41	3.49	3.84	3.71	3.60	4.40
INT	5.52	5.25	5.19	5.24	5.36	5.42	5.17	5.40	4.91	4.78	5.09	4.69	5.03	5.54
ART INT	5.83	5.76	5.72	5.44	5.62	5.64	5.43	6.39	5.92	5.64	5.56	5.34	5.47	5.39
Koch	4.03	4.20	4.65	4.67	5.00	4.55	4.69	3.45	3.85	4.24	4.53	4.41	4.65	5.85
ATS	6.34	5.76	5.28	5.19	5.46	5.03	4.98	12.64	9.36	6.81	6.25	5.62	5.38	5.73
large design (4*6)														
parametric	5.43	5.67	5.72	5.52	6.29	5.91	5.82	5.90	6.11	6.42	6.03	5.92	6.15	5.83
parametric HF-adj	3.76	4.11	4.30	4.34	5.10	4.89	4.63	4.54	4.73	5.08	4.88	4.95	5.25	5.06
van der Waerden	3.12	3.18	3.33	3.39	3.94	3.96	4.18	1.76	2.51	3.12	3.33	3.56	3.83	3.60
KWF	3.02	3.25	3.50	3.44	4.00	4.10	4.27	1.85	2.51	3.03	3.26	3.51	3.65	3.58
Puri & Sen INT	2.75	2.94	2.89	3.00	3.82	3.52	3.94	2.11	2.64	3.06	3.14	3.58	3.59	3.53
Puri & Sen	2.48	2.89	3.25	3.33	3.81	3.77	3.72	2.00	2.65	3.21	3.36	3.56	3.85	3.72
INT	4.83	4.92	4.86	4.93	5.62	5.49	5.48	3.68	4.29	4.82	5.00	5.12	5.34	5.15
ART INT	5.58	5.65	5.65	5.50	6.19	5.62	5.28	5.37	5.70	5.95	5.54	5.69	5.76	5.50
Koch	2.26	3.14	3.88	4.11	4.95	4.91	4.80	2.11	3.23	4.05	4.11	4.67	4.89	4.80
ATS	3.60	3.85	4.25	4.34	4.97	5.04	4.87	5.06	4.61	4.39	4.30	4.97	4.90	5.18



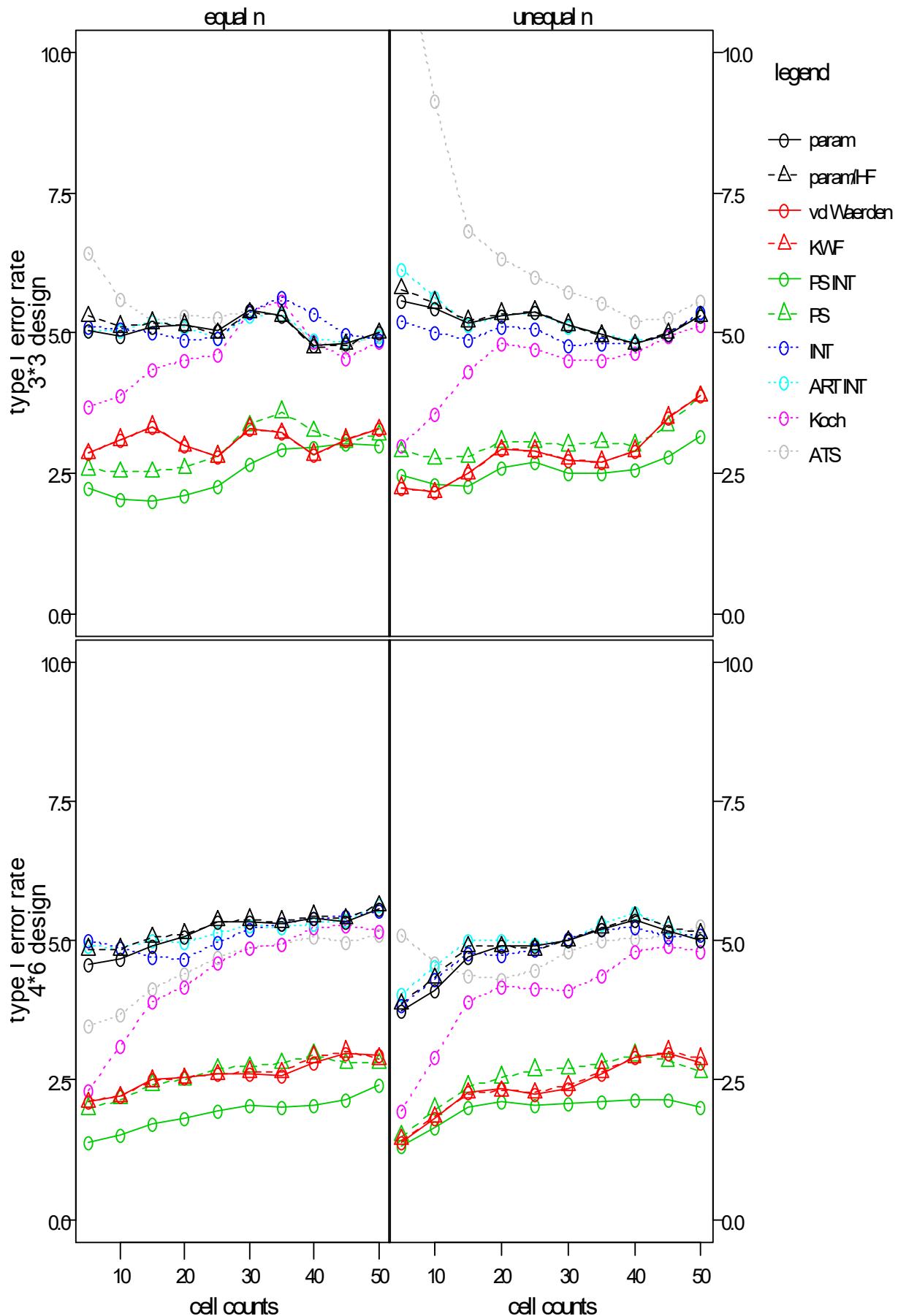
1. 9. 1. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.47	5.51	5.39	5.18	5.31	5.54	5.33	6.55	6.19	5.71	5.61	5.75	5.43	5.35
parametric HF-adj	4.23	4.49	4.70	4.56	4.66	4.86	4.80	5.60	5.34	5.06	5.03	5.10	4.78	4.85
van der Waerden	3.90	3.85	3.61	3.42	4.42	3.97	3.80	3.43	3.54	3.62	3.71	3.90	3.76	4.35
KWF	3.80	3.79	3.60	3.40	4.34	4.01	3.81	3.40	3.50	3.64	3.76	3.91	3.71	4.42
Puri & Sen INT	3.20	3.45	3.55	3.53	3.99	3.74	3.90	3.95	3.66	3.45	3.79	3.92	3.70	4.47
Puri & Sen	3.26	3.38	3.34	3.45	4.42	3.73	3.98	3.82	3.54	3.24	3.50	3.99	3.91	4.67
INT	5.57	5.33	5.10	4.94	5.28	5.11	5.10	6.02	5.62	5.24	5.25	5.11	5.01	5.59
ART INT	6.02	5.69	5.59	5.42	5.39	5.40	5.32	6.32	5.84	5.70	5.70	5.57	5.41	5.55
Koch	4.00	4.28	4.61	4.51	4.89	4.47	4.64	3.52	3.92	4.53	4.78	4.66	4.45	5.55
ATS	6.64	5.85	5.20	5.15	5.62	4.97	4.98	13.12	10.04	7.46	6.53	5.70	5.35	6.00
large design (4*6)														
parametric	5.55	5.90	5.88	5.45	5.96	5.90	5.74	6.17	6.20	6.34	5.88	6.05	6.16	5.87
parametric HF-adj	3.88	4.22	4.41	4.40	5.14	5.00	4.65	4.63	4.74	4.90	4.65	4.91	5.05	4.96
van der Waerden	2.58	3.06	3.33	3.21	3.57	3.95	3.70	2.13	2.81	3.28	3.20	3.18	3.85	3.70
KWF	2.68	3.15	3.48	3.35	3.63	4.00	3.85	2.01	2.67	3.16	3.19	3.29	3.84	3.80
Puri & Sen INT	2.35	2.80	3.15	3.25	3.89	3.86	3.49	1.91	2.54	3.06	3.04	3.19	3.75	3.48
Puri & Sen	2.50	2.92	3.58	3.79	3.90	3.84	3.44	2.11	2.95	3.52	3.38	3.39	3.98	3.63
INT	4.80	4.92	4.94	4.81	5.74	5.76	5.37	4.55	4.90	5.12	4.89	5.25	5.49	5.03
ART INT	5.60	5.76	5.71	5.29	6.34	5.84	5.32	5.37	5.62	5.71	5.33	5.74	5.76	5.55
Koch	2.26	3.19	3.83	3.80	4.83	4.95	4.52	2.20	3.08	3.90	4.01	4.47	4.79	4.65
ATS	3.37	3.89	4.46	4.50	5.08	5.06	4.65	4.97	4.50	4.33	4.40	4.89	5.01	4.73



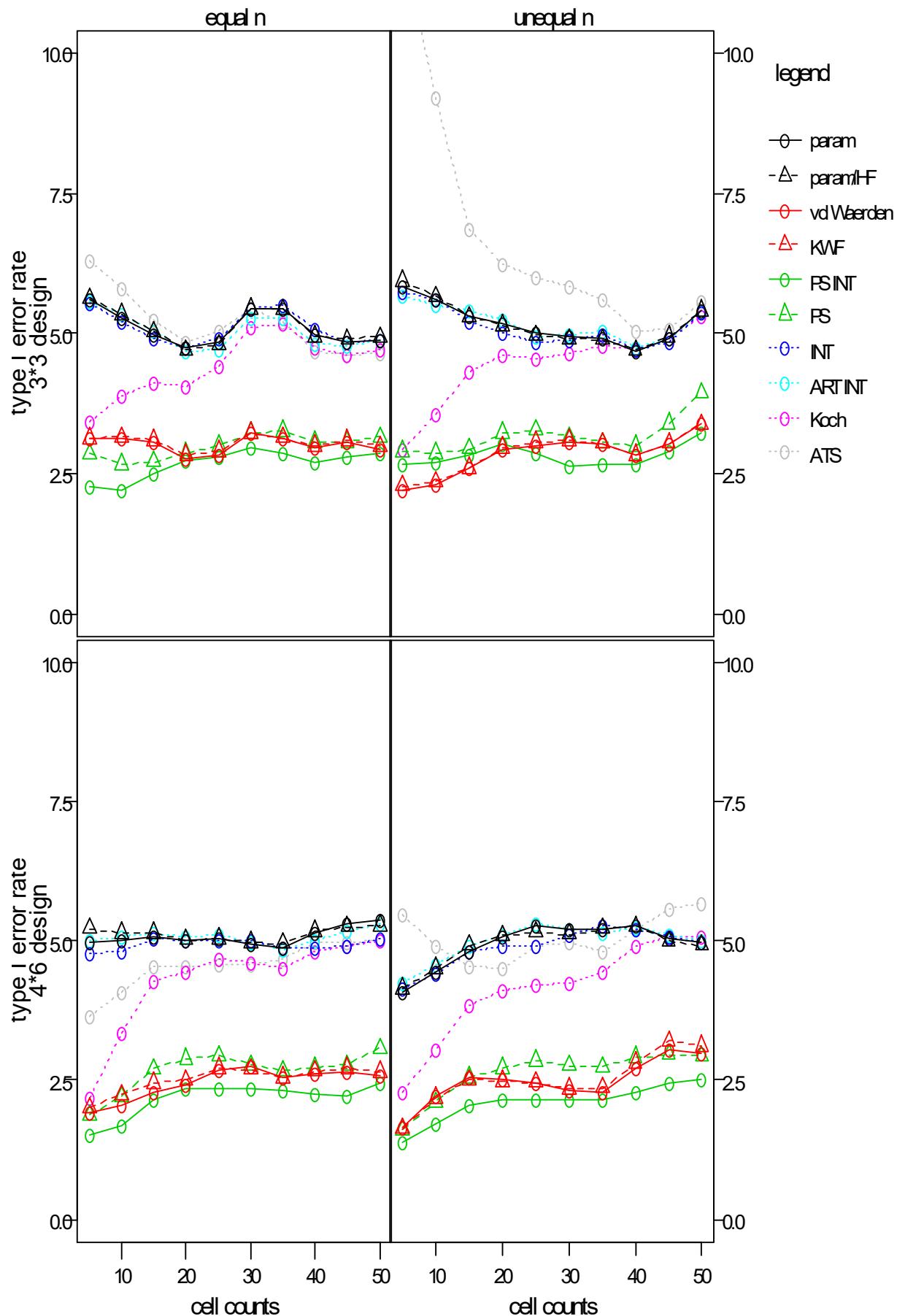
1. 9. 1. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.03	4.94	5.09	5.14	5.40	4.76	5.00	5.58	5.42	5.17	5.31	5.15	4.80	5.29
parametric HF-adj	5.29	5.11	5.17	5.14	5.36	4.75	5.00	5.78	5.54	5.21	5.34	5.14	4.80	5.30
van der Waerden	2.85	3.10	3.33	2.98	3.29	2.83	3.28	2.23	2.16	2.49	2.91	2.74	2.90	3.88
KWF	2.85	3.10	3.33	2.98	3.29	2.83	3.28	2.23	2.16	2.49	2.91	2.74	2.90	3.88
Puri & Sen INT	2.23	2.02	2.00	2.11	2.67	2.95	2.98	2.45	2.29	2.26	2.59	2.51	2.56	3.15
Puri & Sen	2.57	2.52	2.52	2.58	3.34	3.25	3.18	2.88	2.75	2.79	3.06	2.99	2.99	3.87
INT	5.12	5.06	5.01	4.88	5.36	5.33	4.87	5.22	5.01	4.89	5.10	4.79	4.80	5.37
ART INT	5.05	5.05	5.21	5.11	5.31	4.86	4.95	6.12	5.62	5.14	5.31	5.12	4.83	5.34
Koch	3.68	3.89	4.34	4.50	5.36	4.84	4.84	3.00	3.54	4.30	4.80	4.50	4.64	5.13
ATS	6.42	5.60	5.20	5.30	5.40	4.83	4.99	12.07	9.15	6.83	6.34	5.74	5.21	5.58
large design (4*6)														
parametric	4.59	4.66	4.92	5.07	5.34	5.42	5.57	3.73	4.12	4.72	4.89	4.99	5.38	5.00
parametric HF-adj	4.84	4.84	5.06	5.12	5.38	5.44	5.62	3.87	4.33	4.90	4.89	4.99	5.43	5.13
van der Waerden	2.10	2.23	2.50	2.56	2.62	2.80	2.95	1.38	1.80	2.27	2.34	2.36	2.90	2.80
KWF	2.10	2.20	2.49	2.54	2.65	2.91	2.88	1.43	1.84	2.26	2.31	2.41	2.91	2.88
Puri & Sen INT	1.37	1.53	1.73	1.81	2.04	2.04	2.40	1.31	1.66	2.02	2.11	2.09	2.14	2.00
Puri & Sen	1.98	2.16	2.42	2.50	2.74	2.96	2.80	1.50	1.98	2.39	2.55	2.70	2.95	2.63
INT	5.00	4.88	4.70	4.66	5.20	5.42	5.55	3.83	4.30	4.76	4.75	5.04	5.25	5.10
ART INT	4.89	4.88	5.01	4.98	5.26	5.31	5.65	4.03	4.53	5.00	5.01	4.99	5.49	5.02
Koch	2.30	3.11	3.92	4.19	4.86	5.25	5.17	1.96	2.92	3.91	4.18	4.11	4.79	4.80
ATS	3.49	3.66	4.15	4.41	4.86	5.06	5.10	5.09	4.60	4.36	4.30	4.79	5.05	5.27



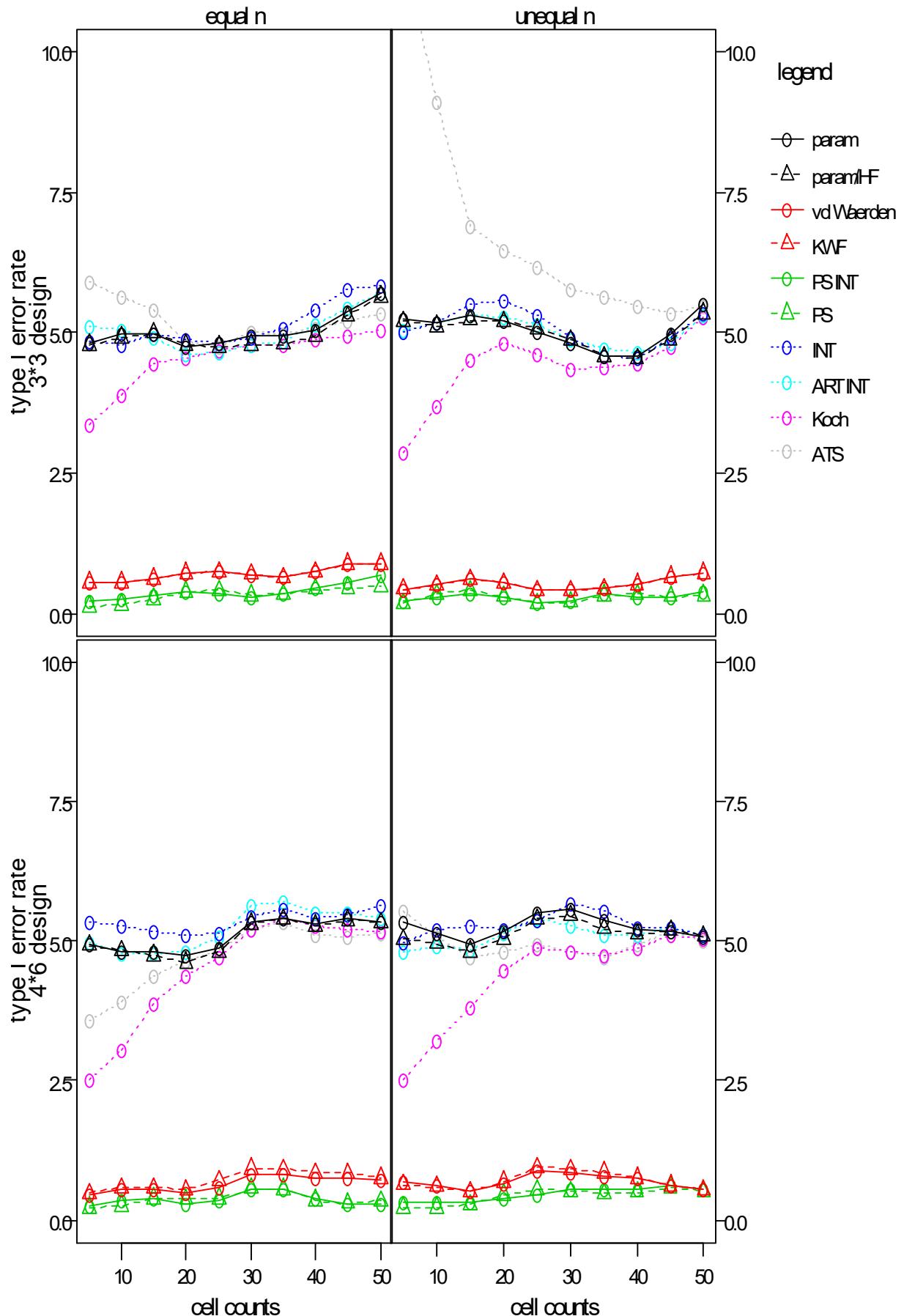
1. 9. 1. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.60	5.26	4.97	4.74	5.45	4.96	4.87	5.82	5.60	5.29	5.16	4.94	4.69	5.40
parametric HF-adj	5.62	5.34	5.03	4.70	5.44	4.95	4.93	5.93	5.66	5.29	5.14	4.90	4.70	5.40
van der Waerden	3.12	3.14	3.06	2.75	3.21	2.97	2.93	2.20	2.31	2.60	2.92	3.06	2.83	3.38
KWF	3.13	3.15	3.09	2.83	3.22	2.99	2.98	2.28	2.35	2.60	2.96	3.09	2.83	3.38
Puri & Sen INT	2.25	2.19	2.50	2.73	2.95	2.71	2.87	2.67	2.70	2.84	3.04	2.64	2.65	3.23
Puri & Sen	2.85	2.67	2.71	2.86	3.23	3.06	3.15	2.90	2.86	2.94	3.22	3.15	3.00	3.94
INT	5.52	5.21	4.91	4.74	5.44	5.06	4.87	5.73	5.61	5.22	5.00	4.89	4.72	5.37
ART INT	5.57	5.35	5.03	4.68	5.26	4.80	4.87	5.67	5.49	5.39	5.25	4.99	4.75	5.37
Koch	3.43	3.88	4.12	4.06	5.10	4.74	4.72	2.91	3.56	4.30	4.60	4.64	4.70	5.30
ATS	6.30	5.80	5.25	4.85	5.45	4.69	4.65	11.95	9.21	6.85	6.22	5.84	5.04	5.57
large design (4*6)														
parametric	4.97	4.99	5.06	5.01	4.94	5.14	5.37	4.06	4.44	4.81	5.08	5.20	5.26	4.98
parametric HF-adj	5.22	5.14	5.14	5.02	4.97	5.18	5.27	4.15	4.51	4.92	5.09	5.12	5.26	4.92
van der Waerden	1.90	2.04	2.27	2.41	2.76	2.60	2.57	1.65	2.21	2.55	2.51	2.30	2.70	2.98
KWF	2.00	2.24	2.45	2.51	2.69	2.66	2.65	1.63	2.19	2.51	2.48	2.35	2.81	3.11
Puri & Sen INT	1.52	1.69	2.16	2.35	2.36	2.26	2.44	1.40	1.73	2.06	2.14	2.15	2.27	2.50
Puri & Sen	1.87	2.21	2.70	2.88	2.77	2.72	3.07	1.61	2.11	2.55	2.72	2.76	2.92	2.93
INT	4.77	4.80	5.03	5.01	5.00	4.88	5.04	4.13	4.42	4.80	4.92	5.11	5.22	4.97
ART INT	5.00	5.06	5.14	5.06	4.96	5.00	5.32	4.23	4.56	4.90	5.12	5.21	5.24	5.00
Koch	2.19	3.33	4.29	4.45	4.62	4.79	4.99	2.28	3.05	3.85	4.10	4.24	4.90	5.08
ATS	3.63	4.07	4.55	4.54	4.56	4.97	4.99	5.46	4.91	4.53	4.52	4.96	5.20	5.68



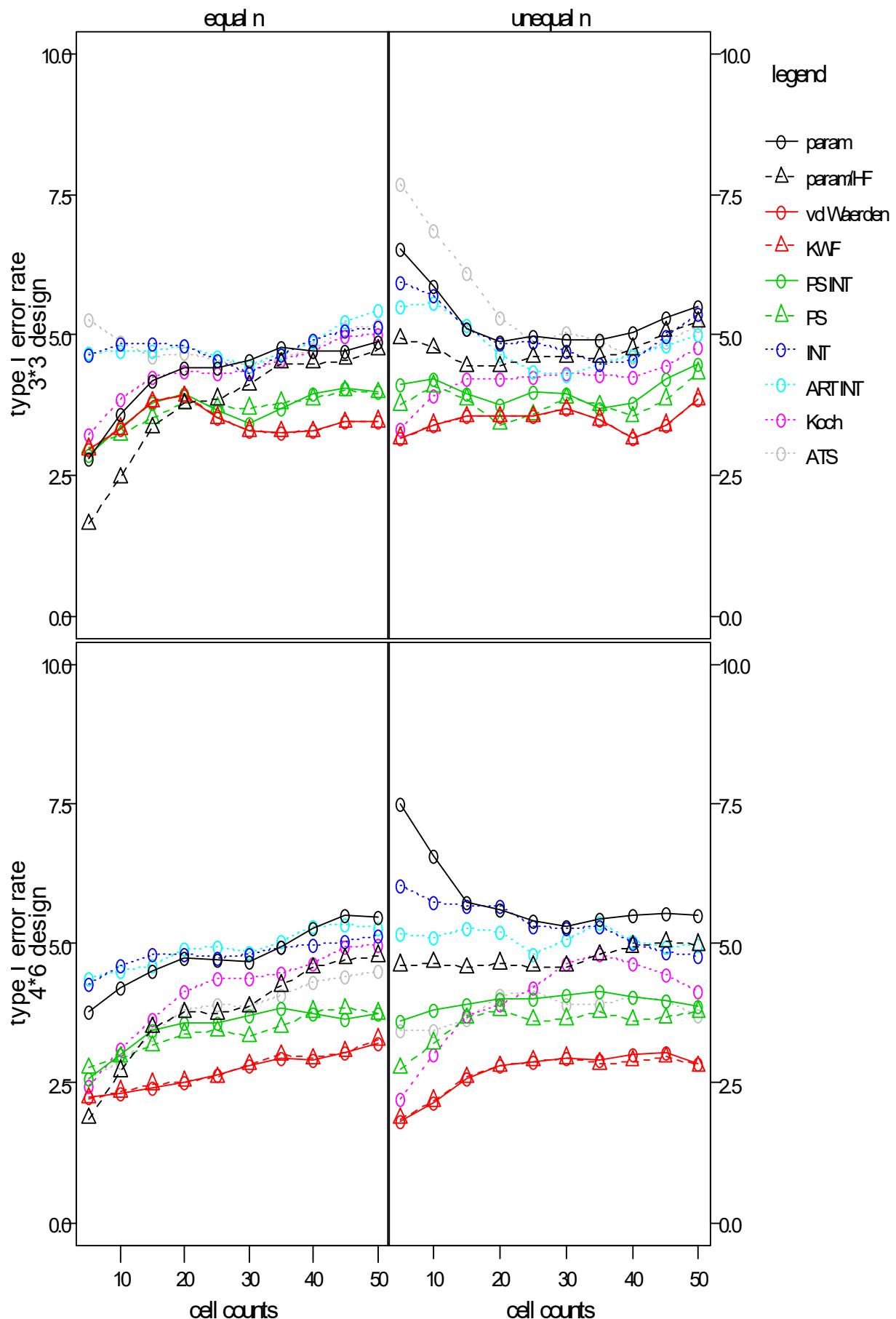
1. 9. 1. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.82	4.96	4.96	4.75	4.94	5.05	5.70	5.25	5.17	5.31	5.22	4.81	4.58	5.49
parametric HF-adj	4.78	4.91	4.99	4.78	4.78	4.95	5.64	5.19	5.11	5.22	5.19	4.86	4.54	5.34
van der Waerden	0.55	0.55	0.62	0.72	0.69	0.74	0.88	0.43	0.50	0.61	0.54	0.41	0.52	0.72
KWF	0.55	0.55	0.62	0.72	0.69	0.74	0.88	0.43	0.50	0.61	0.54	0.41	0.52	0.72
Puri & Sen INT	0.23	0.25	0.31	0.37	0.28	0.46	0.67	0.22	0.28	0.34	0.29	0.21	0.30	0.37
Puri & Sen	0.12	0.16	0.26	0.39	0.32	0.43	0.47	0.18	0.34	0.40	0.30	0.20	0.34	0.32
INT	4.85	4.76	4.96	4.89	4.91	5.41	5.82	5.00	5.17	5.51	5.56	4.91	4.55	5.34
ART INT	5.12	5.04	4.91	4.62	4.76	5.14	5.69	5.03	5.16	5.32	5.26	4.89	4.65	5.29
Koch	3.37	3.88	4.44	4.53	4.79	4.88	5.05	2.86	3.67	4.51	4.81	4.34	4.45	5.27
ATS	5.90	5.64	5.41	4.84	5.00	5.06	5.34	11.77	9.11	6.89	6.45	5.76	5.47	5.47
large design (4*6)														
parametric	4.93	4.81	4.81	4.75	5.34	5.30	5.33	5.33	5.14	4.95	5.17	5.56	5.19	5.07
parametric HF-adj	4.92	4.83	4.74	4.61	5.31	5.28	5.33	5.03	4.95	4.81	5.04	5.45	5.12	5.10
van der Waerden	0.47	0.55	0.55	0.49	0.81	0.74	0.72	0.67	0.61	0.51	0.66	0.86	0.74	0.55
KWF	0.48	0.58	0.58	0.55	0.92	0.84	0.75	0.63	0.60	0.51	0.69	0.91	0.76	0.55
Puri & Sen INT	0.25	0.36	0.38	0.28	0.56	0.39	0.30	0.33	0.32	0.32	0.40	0.55	0.54	0.55
Puri & Sen	0.22	0.26	0.39	0.38	0.57	0.36	0.35	0.22	0.22	0.28	0.46	0.51	0.50	0.51
INT	5.33	5.26	5.16	5.11	5.44	5.42	5.62	4.96	5.21	5.28	5.21	5.68	5.25	5.10
ART INT	4.97	4.78	4.78	4.80	5.65	5.49	5.41	4.81	4.89	4.84	5.15	5.28	5.10	5.10
Koch	2.51	3.06	3.89	4.38	5.19	5.26	5.18	2.51	3.21	3.80	4.46	4.80	4.88	5.05
ATS	3.58	3.91	4.36	4.64	5.22	5.10	5.13	5.55	5.08	4.71	4.80	4.81	4.95	5.00



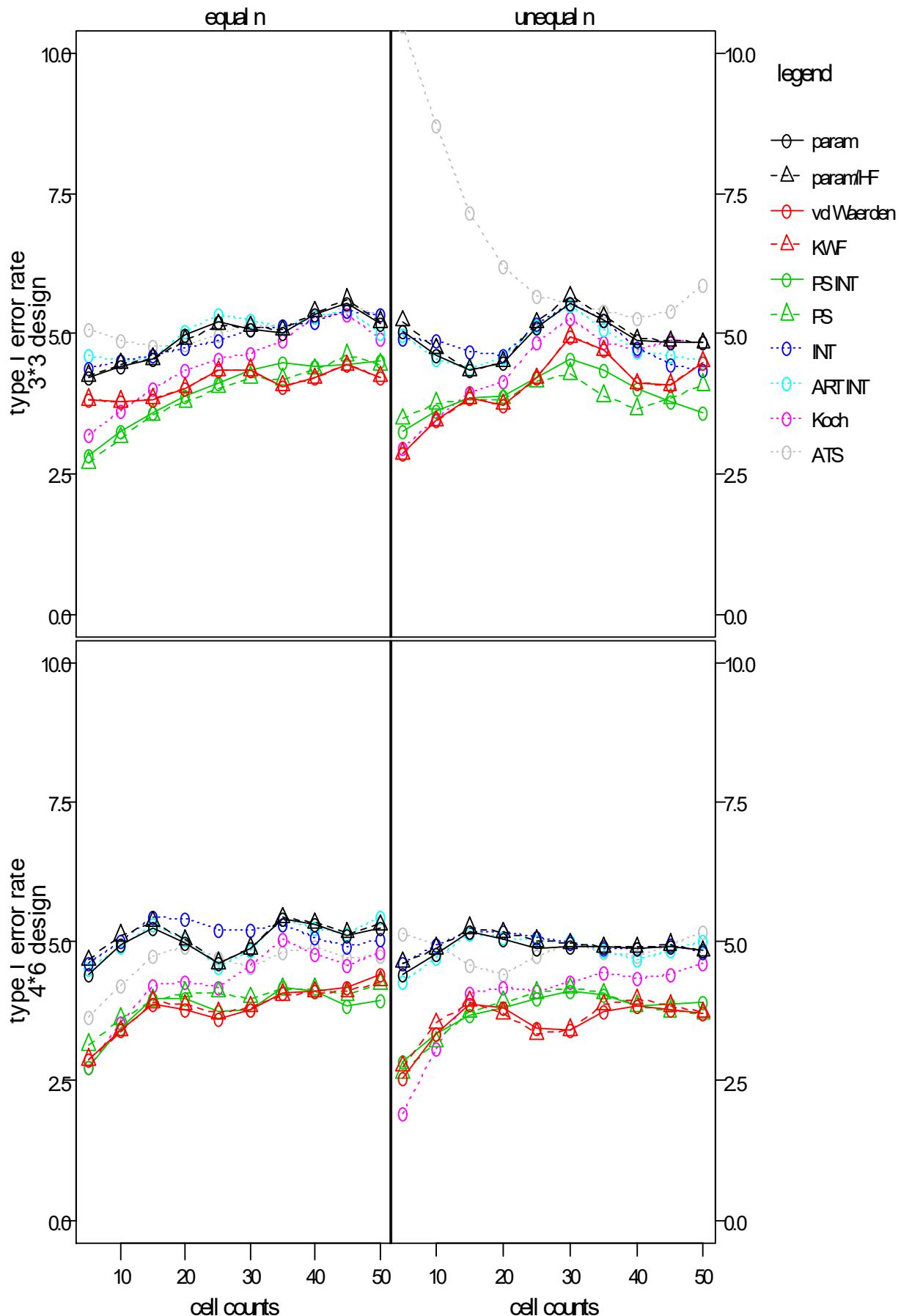
1. 9. 1. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.79	3.59	4.17	4.41	4.53	4.70	4.88	6.54	5.88	5.09	4.89	4.92	5.05	5.50
parametric HF-adj	1.63	2.46	3.34	3.77	4.10	4.49	4.73	4.93	4.76	4.43	4.43	4.60	4.74	5.23
van der Waerden	2.96	3.32	3.81	3.91	3.29	3.28	3.46	3.16	3.39	3.54	3.54	3.67	3.15	3.85
KWF	2.96	3.32	3.81	3.91	3.29	3.28	3.46	3.16	3.39	3.54	3.54	3.67	3.15	3.85
Puri & Sen INT	2.86	3.36	3.78	3.94	3.41	3.96	3.98	4.11	4.22	3.94	3.75	3.96	3.79	4.47
Puri & Sen	2.98	3.21	3.53	3.77	3.69	3.85	3.96	3.75	4.09	3.85	3.40	3.88	3.54	4.32
INT	4.63	4.83	4.84	4.82	4.31	4.90	5.13	5.93	5.69	5.11	4.83	4.71	4.54	5.37
ART INT	4.68	4.72	4.70	4.81	4.46	4.86	5.45	5.51	5.57	5.17	4.64	4.29	4.64	5.02
Koch	3.23	3.84	4.26	4.36	4.35	4.70	5.01	3.33	3.93	4.22	4.20	4.32	4.24	4.79
ATS	5.27	4.88	4.62	4.69	4.45	4.75	5.18	7.69	6.86	6.10	5.29	5.04	4.62	5.17
large design (4*6)														
parametric	3.78	4.21	4.50	4.74	4.67	5.28	5.46	7.50	6.57	5.75	5.61	5.31	5.51	5.50
parametric HF-adj	1.86	2.71	3.49	3.77	3.86	4.56	4.77	4.61	4.65	4.56	4.64	4.59	4.94	4.98
van der Waerden	2.25	2.33	2.40	2.51	2.81	2.91	3.22	1.80	2.15	2.59	2.80	2.94	3.00	2.85
KWF	2.23	2.35	2.48	2.53	2.83	2.94	3.28	1.86	2.19	2.60	2.80	2.95	2.89	2.80
Puri & Sen INT	2.58	3.02	3.45	3.59	3.70	3.74	3.73	3.61	3.80	3.92	4.02	4.08	4.05	3.88
Puri & Sen	2.77	2.96	3.17	3.39	3.33	3.78	3.75	2.76	3.21	3.67	3.81	3.65	3.62	3.78
INT	4.28	4.60	4.81	4.79	4.80	4.96	5.13	6.05	5.75	5.68	5.67	5.28	5.00	4.77
ART INT	4.37	4.50	4.62	4.90	4.83	5.29	5.28	5.17	5.12	5.26	5.20	5.06	5.05	4.96
Koch	2.44	3.11	3.65	4.14	4.36	4.65	4.96	2.21	3.01	3.70	3.90	4.64	4.65	4.15
ATS	2.57	2.89	3.39	3.81	3.86	4.30	4.50	3.45	3.44	3.64	4.09	3.91	4.04	3.70



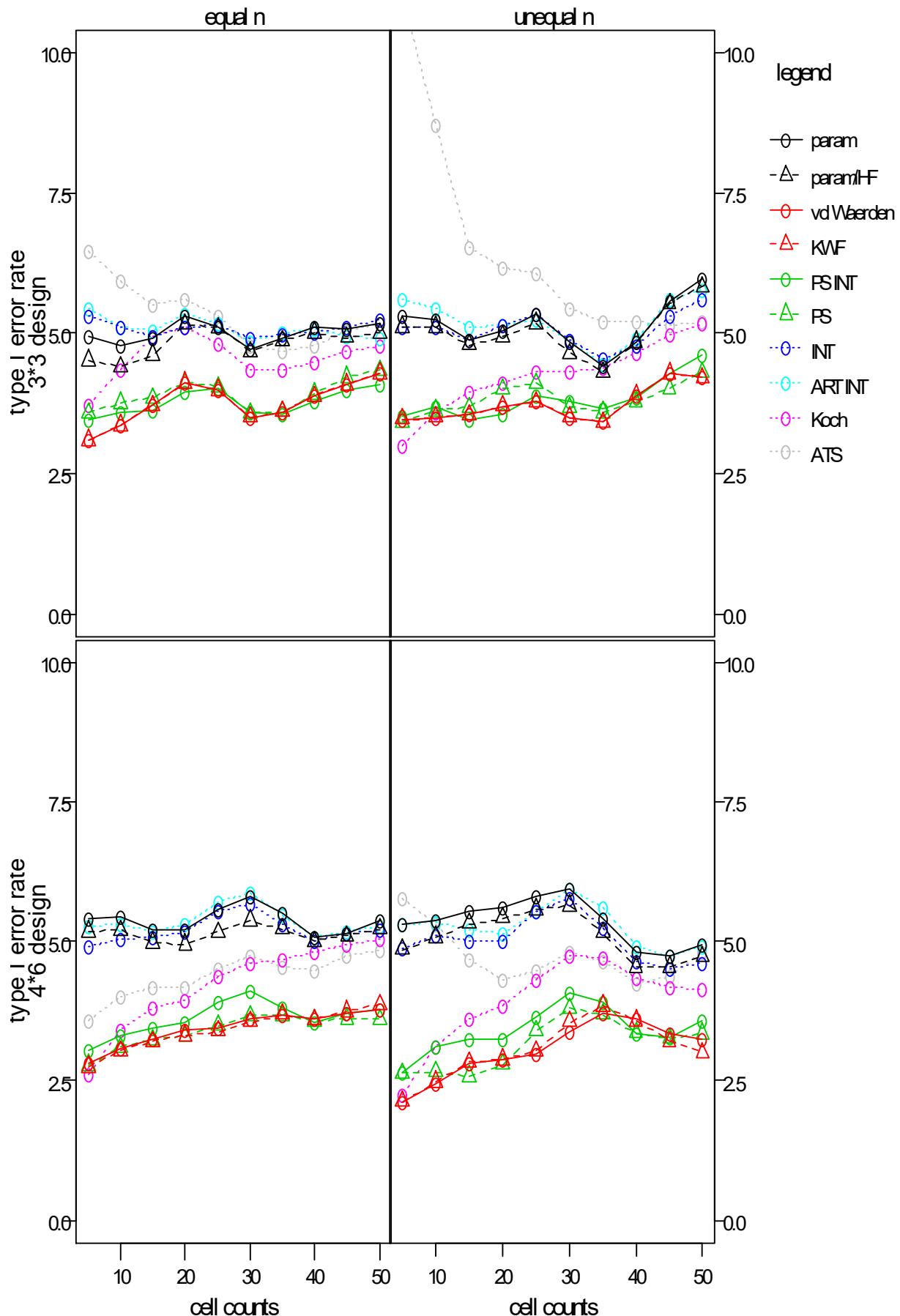
1. 9. 1. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.20	4.40	4.56	4.98	5.07	5.35	5.18	5.04	4.61	4.34	4.47	5.55	4.86	4.83
parametric HF-adj	4.25	4.46	4.55	4.89	5.12	5.38	5.21	5.22	4.72	4.35	4.49	5.66	4.90	4.83
van der Waerden	3.82	3.79	3.83	4.03	4.35	4.20	4.23	2.86	3.44	3.86	3.73	4.94	4.11	4.49
KWF	3.82	3.79	3.83	4.03	4.35	4.20	4.23	2.86	3.44	3.86	3.73	4.94	4.11	4.49
Puri & Sen INT	2.83	3.25	3.60	3.88	4.35	4.42	4.52	3.26	3.61	3.85	3.88	4.55	4.00	3.60
Puri & Sen	2.70	3.14	3.56	3.79	4.22	4.36	4.45	3.48	3.75	3.83	3.83	4.28	3.65	4.08
INT	4.37	4.51	4.62	4.74	5.08	5.22	5.33	4.90	4.88	4.66	4.62	5.55	4.75	4.35
ART INT	4.62	4.51	4.53	5.03	5.24	5.31	5.01	4.99	4.56	4.39	4.57	5.50	4.67	4.52
Koch	3.20	3.61	4.00	4.35	4.65	5.29	4.91	2.95	3.48	3.95	4.15	5.27	4.72	4.83
ATS	5.08	4.88	4.76	4.81	5.17	5.20	5.35	10.50	8.72	7.14	6.20	5.52	5.26	5.87
large design (4*6)														
parametric	4.41	4.94	5.24	4.96	4.86	5.29	5.25	4.40	4.76	5.16	5.03	4.90	4.88	4.85
parametric HF-adj	4.66	5.11	5.35	5.03	4.88	5.33	5.30	4.62	4.88	5.24	5.16	4.96	4.90	4.83
van der Waerden	2.88	3.42	3.89	3.79	3.79	4.12	4.40	2.56	3.35	3.89	3.80	3.41	3.83	3.72
KWF	2.88	3.39	3.91	3.86	3.82	4.09	4.29	2.76	3.53	3.92	3.71	3.41	3.96	3.73
Puri & Sen INT	2.73	3.44	3.97	3.98	3.79	4.11	3.95	2.86	3.36	3.69	3.80	4.11	3.85	3.90
Puri & Sen	3.15	3.61	3.95	4.09	3.99	4.15	4.25	2.65	3.20	3.73	3.92	4.16	3.85	3.70
INT	4.60	4.99	5.43	5.41	5.20	5.07	5.05	4.62	4.94	5.17	5.16	4.96	4.88	4.80
ART INT	4.50	4.92	5.29	5.04	4.83	5.24	5.45	4.27	4.72	5.15	5.08	5.00	4.67	5.00
Koch	2.73	3.54	4.22	4.29	4.58	4.78	4.82	1.91	3.08	4.08	4.16	4.29	4.34	4.60
ATS	3.65	4.21	4.73	4.89	4.53	4.92	4.75	5.15	4.94	4.58	4.41	4.96	4.74	5.17



1. 9. 1. 13 normal distribution - equal variances - contaminated III

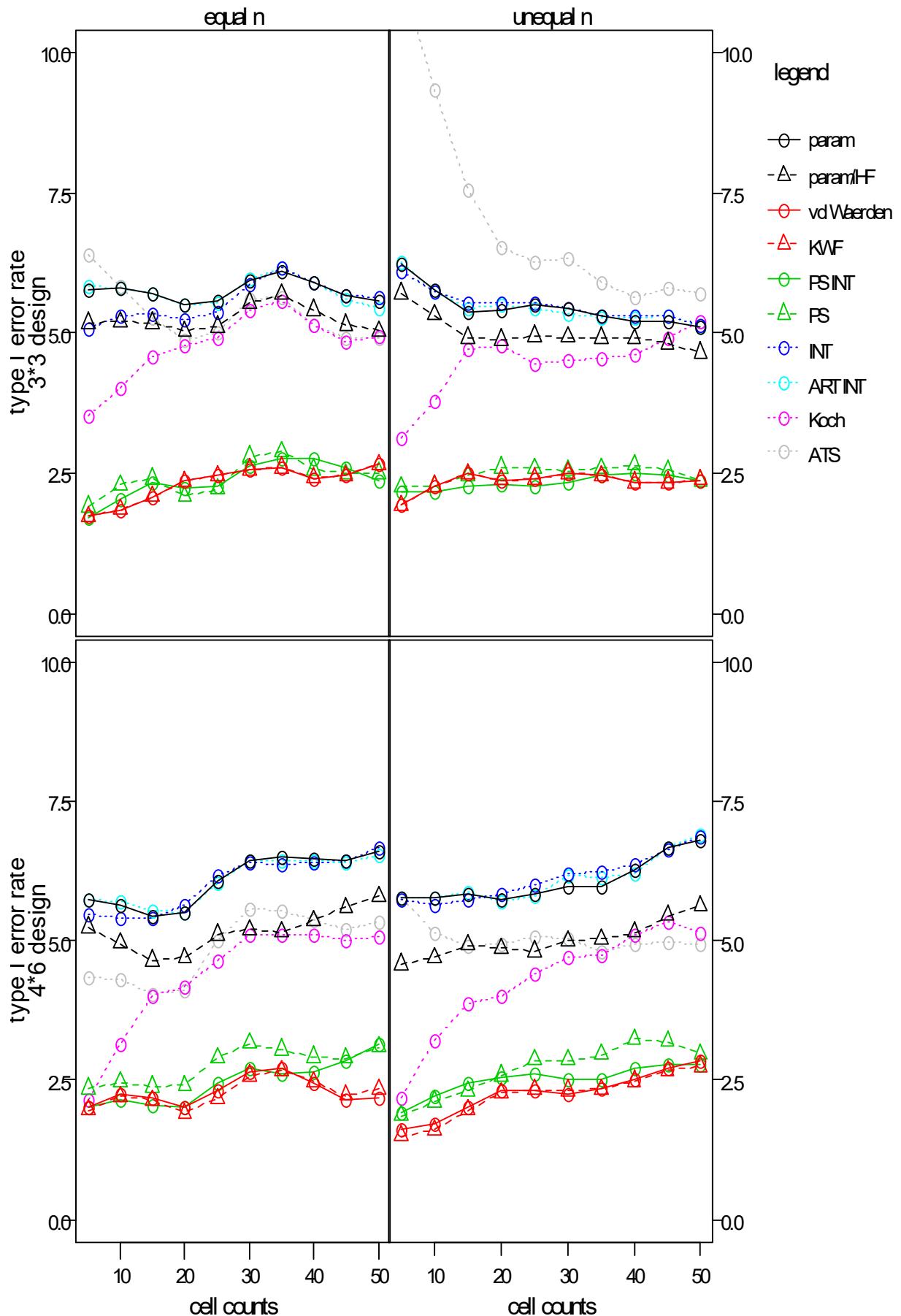
method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.93	4.79	4.91	5.31	4.71	5.09	5.18	5.30	5.25	4.88	5.03	4.85	4.85	5.95
parametric HF-adj	4.52	4.40	4.61	5.15	4.67	5.01	5.00	5.11	5.11	4.79	4.94	4.64	4.84	5.82
van der Waerden	3.10	3.36	3.71	4.12	3.50	3.88	4.28	3.47	3.50	3.55	3.70	3.50	3.90	4.21
KWF	3.10	3.36	3.71	4.12	3.50	3.88	4.28	3.47	3.50	3.55	3.70	3.50	3.90	4.21
Puri & Sen INT	3.46	3.58	3.61	3.96	3.59	3.79	4.07	3.51	3.70	3.47	3.56	3.80	3.84	4.60
Puri & Sen	3.58	3.75	3.84	4.11	3.58	3.92	4.33	3.41	3.62	3.67	4.00	3.67	3.77	4.30
INT	5.30	5.11	4.93	5.12	4.91	5.01	5.23	5.10	5.09	4.89	5.14	4.89	4.79	5.60
ART INT	5.44	5.10	5.05	5.35	4.84	5.08	4.92	5.60	5.45	5.12	5.14	4.84	4.91	5.77
Koch	3.71	4.36	4.95	5.12	4.34	4.49	4.78	3.00	3.59	3.96	4.12	4.30	4.65	5.17
ATS	6.47	5.94	5.49	5.60	4.78	4.79	5.17	11.01	8.72	6.51	6.17	5.43	5.19	5.20
large design (4*6)														
parametric	5.41	5.45	5.22	5.22	5.80	5.08	5.37	5.30	5.38	5.53	5.59	5.92	4.79	4.95
parametric HF-adj	5.18	5.19	4.98	4.94	5.38	4.99	5.22	4.85	5.08	5.32	5.42	5.64	4.55	4.73
van der Waerden	2.81	3.08	3.26	3.41	3.60	3.60	3.77	2.11	2.46	2.80	2.89	3.39	3.60	3.25
KWF	2.75	3.04	3.20	3.31	3.56	3.60	3.87	2.13	2.48	2.83	2.88	3.56	3.58	3.00
Puri & Sen INT	3.03	3.30	3.44	3.56	4.10	3.56	3.77	2.66	3.11	3.25	3.23	4.09	3.35	3.57
Puri & Sen	2.78	3.10	3.23	3.30	3.66	3.58	3.60	2.63	2.66	2.58	2.79	3.80	3.36	3.35
INT	4.92	5.05	5.08	5.17	5.68	5.01	5.20	4.86	5.10	5.00	4.99	5.76	4.65	4.60
ART INT	5.26	5.30	5.16	5.31	5.88	5.08	5.27	5.30	5.35	5.22	5.14	5.95	4.89	4.90
Koch	2.61	3.42	3.80	3.94	4.61	4.79	5.03	2.24	3.10	3.60	3.85	4.74	4.34	4.13
ATS	3.58	4.01	4.16	4.16	4.75	4.47	4.83	5.77	5.29	4.68	4.31	4.81	4.24	4.79



1. 9. 2. unequal correlations on B ($r = 0.7, 0.5, 0.4, 0.2, 0.1$)

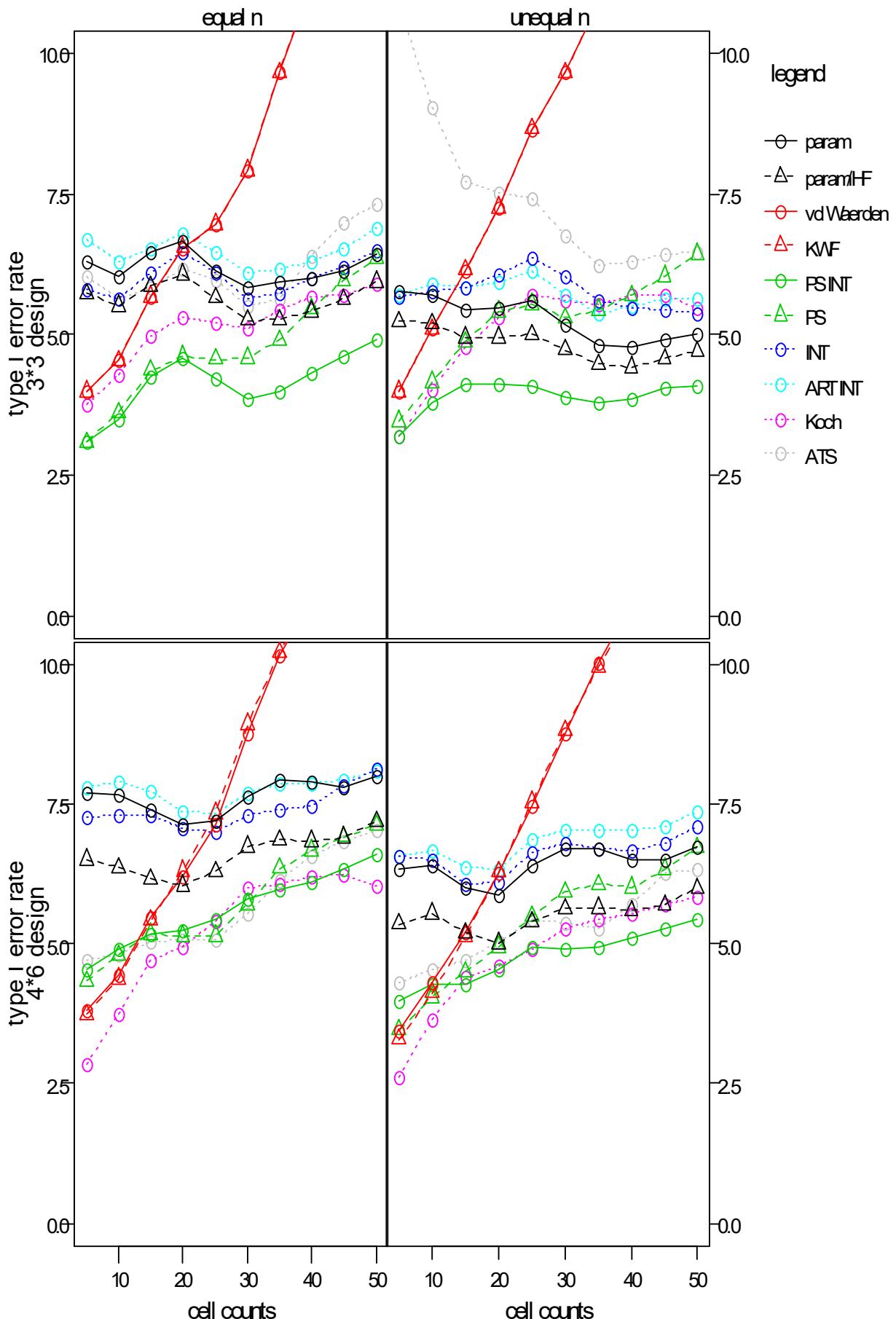
1. 9. 2. 1 normal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.78	5.81	5.71	5.50	5.94	5.89	5.57	6.22	5.76	5.38	5.40	5.45	5.21	5.12
parametric HF-adj	5.17	5.20	5.17	5.03	5.54	5.40	5.03	5.70	5.32	4.91	4.88	4.92	4.90	4.65
van der Waerden	1.73	1.85	2.08	2.35	2.56	2.41	2.65	1.93	2.27	2.48	2.38	2.50	2.33	2.38
KWF	1.73	1.85	2.08	2.35	2.56	2.41	2.65	1.93	2.27	2.48	2.38	2.50	2.33	2.38
Puri & Sen INT	1.70	2.04	2.33	2.24	2.62	2.76	2.38	2.15	2.16	2.25	2.29	2.34	2.50	2.35
Puri & Sen	1.91	2.29	2.40	2.09	2.80	2.56	2.50	2.25	2.27	2.45	2.60	2.54	2.64	2.37
INT	5.08	5.30	5.35	5.24	5.85	5.90	5.65	6.09	5.74	5.54	5.54	5.45	5.31	5.13
ART INT	5.83	5.79	5.71	5.51	5.96	5.89	5.43	6.27	5.74	5.44	5.49	5.35	5.28	5.11
Koch	3.53	4.03	4.59	4.79	5.39	5.14	4.93	3.11	3.80	4.71	4.78	4.50	4.61	5.22
ATS	6.40	5.84	5.28	4.89	5.60	5.15	4.92	11.40	9.34	7.54	6.53	6.34	5.64	5.71
large design (4*6)														
parametric	5.73	5.64	5.44	5.49	6.45	6.46	6.59	5.77	5.77	5.85	5.75	5.97	6.28	6.80
parametric HF-adj	5.24	4.95	4.64	4.70	5.19	5.36	5.79	4.58	4.70	4.92	4.86	5.00	5.15	5.62
van der Waerden	2.01	2.25	2.19	2.01	2.66	2.46	2.19	1.60	1.70	2.03	2.33	2.26	2.51	2.85
KWF	1.96	2.20	2.14	1.91	2.58	2.47	2.34	1.50	1.60	1.96	2.27	2.32	2.49	2.75
Puri & Sen INT	2.00	2.16	2.06	2.01	2.70	2.65	3.14	1.91	2.21	2.46	2.56	2.53	2.70	2.77
Puri & Sen	2.35	2.46	2.39	2.41	3.16	2.91	3.09	1.86	2.12	2.30	2.58	2.86	3.24	2.97
INT	5.47	5.42	5.42	5.65	6.39	6.40	6.67	5.72	5.65	5.74	5.84	6.20	6.36	6.85
ART INT	5.75	5.70	5.54	5.51	6.44	6.42	6.55	5.77	5.77	5.86	5.69	6.18	6.21	6.90
Koch	2.16	3.16	4.00	4.16	5.09	5.10	5.07	2.18	3.20	3.86	4.01	4.71	5.12	5.13
ATS	4.33	4.30	4.04	4.11	5.56	5.38	5.35	5.76	5.14	4.90	4.93	5.04	4.94	4.95



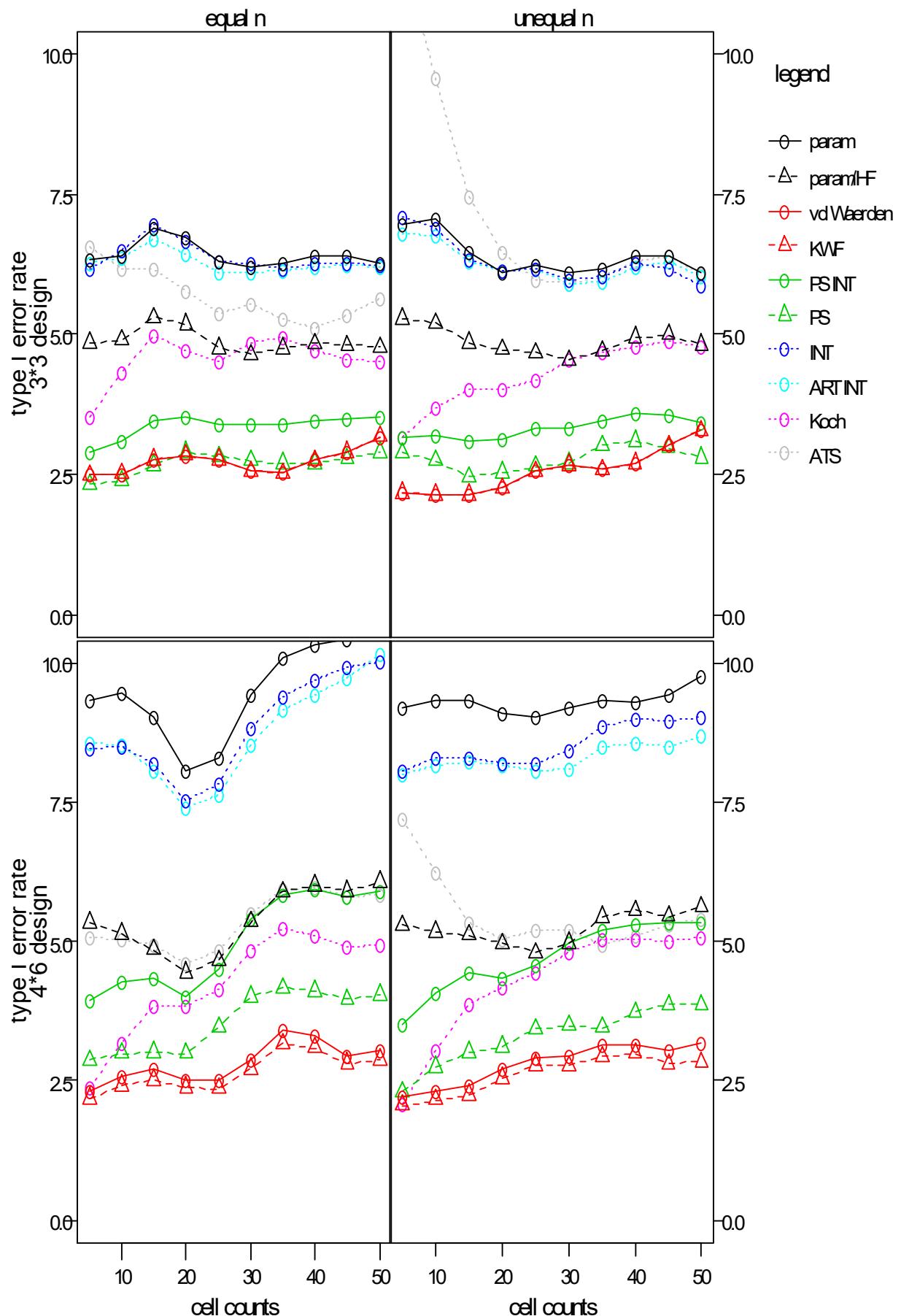
1. 9. 2. 2 normal distribution - unequal variances (on A)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.31	6.04	6.47	6.66	5.83	6.00	6.42	5.75	5.69	5.42	5.47	5.16	4.79	5.02
parametric HF-adj	5.72	5.50	5.85	6.07	5.25	5.41	5.94	5.23	5.19	4.94	4.94	4.72	4.41	4.70
van der Waerden	3.98	4.54	5.67	6.54	7.91	11.29	13.19	3.99	5.09	6.14	7.26	9.66	12.51	16.23
KWF	3.98	4.54	5.67	6.54	7.91	11.29	13.19	3.99	5.09	6.14	7.26	9.66	12.51	16.23
Puri & Sen INT	3.08	3.50	4.26	4.59	3.85	4.30	4.92	3.18	3.79	4.11	4.11	3.88	3.85	4.08
Puri & Sen	3.08	3.61	4.36	4.61	4.58	5.45	6.35	3.46	4.15	4.86	5.41	5.29	5.69	6.43
INT	5.80	5.65	6.09	6.45	5.65	6.01	6.49	5.67	5.78	5.83	6.06	6.03	5.46	5.38
ART INT	6.69	6.29	6.53	6.79	6.09	6.31	6.90	5.71	5.91	5.84	5.94	5.69	5.50	5.65
Koch	3.75	4.29	4.99	5.31	5.11	5.66	5.90	3.18	4.00	4.76	5.31	5.59	5.70	5.46
ATS	6.02	5.64	5.82	6.15	5.51	6.38	7.32	10.90	9.05	7.70	7.53	6.76	6.29	6.47
large design (4*6)														
parametric	7.70	7.66	7.41	7.12	7.64	7.88	8.00	6.33	6.40	6.00	5.88	6.70	6.50	6.74
parametric HF-adj	6.50	6.36	6.16	6.04	6.73	6.83	7.19	5.35	5.54	5.20	5.01	5.62	5.59	5.99
van der Waerden	3.80	4.45	5.48	6.21	8.75	11.14	13.46	3.43	4.30	5.20	6.26	8.75	11.10	12.93
KWF	3.73	4.38	5.42	6.30	8.93	11.16	13.41	3.29	4.12	5.14	6.28	8.81	10.99	12.95
Puri & Sen INT	4.53	4.92	5.17	5.25	5.80	6.09	6.60	3.98	4.29	4.27	4.53	4.91	5.10	5.45
Puri & Sen	4.33	4.80	5.17	5.14	5.71	6.67	7.12	3.46	4.05	4.50	4.94	5.92	6.00	6.72
INT	7.25	7.31	7.29	7.08	7.30	7.48	8.14	6.58	6.51	6.06	6.09	6.80	6.66	7.09
ART INT	7.78	7.89	7.73	7.36	7.68	7.86	8.09	6.58	6.66	6.36	6.34	7.04	7.03	7.35
Koch	2.83	3.75	4.69	4.95	6.00	6.21	6.03	2.61	3.65	4.42	4.61	5.26	5.53	5.85
ATS	4.70	4.81	5.05	5.08	5.53	6.58	7.04	4.30	4.53	4.72	5.03	5.38	5.71	6.35



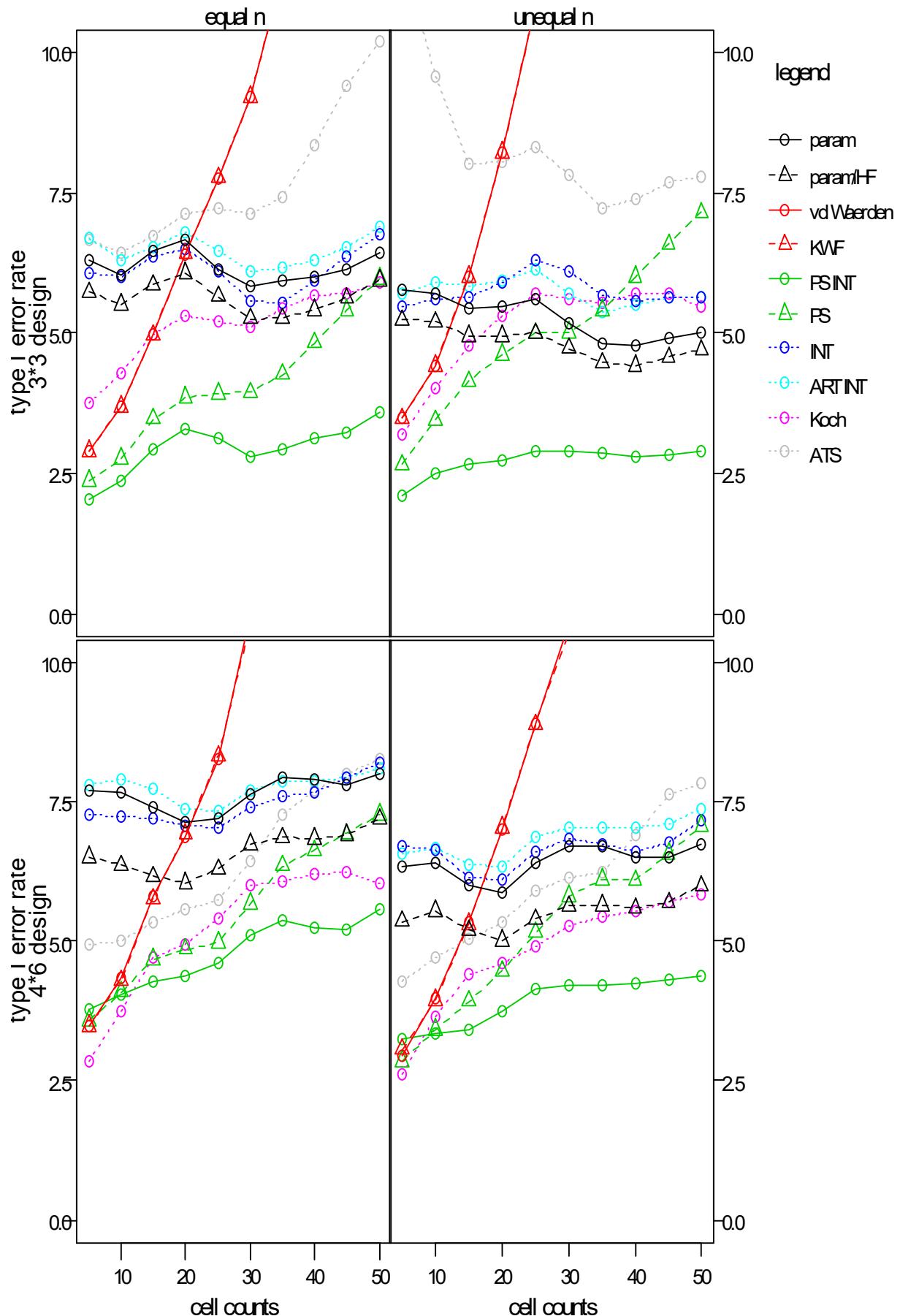
1. 9. 2. 3 normal distribution - unequal variances (on B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.32	6.41	6.90	6.74	6.21	6.40	6.27	6.95	7.05	6.47	6.11	6.10	6.41	6.10
parametric HF-adj	4.85	4.89	5.30	5.17	4.64	4.83	4.77	5.28	5.19	4.84	4.72	4.53	4.95	4.81
van der Waerden	2.49	2.51	2.76	2.84	2.55	2.75	3.17	2.17	2.14	2.14	2.25	2.66	2.70	3.28
KWF	2.49	2.51	2.76	2.84	2.55	2.75	3.17	2.17	2.14	2.14	2.25	2.66	2.70	3.28
Puri & Sen INT	2.88	3.10	3.47	3.51	3.40	3.44	3.53	3.17	3.20	3.09	3.14	3.31	3.58	3.43
Puri & Sen	2.32	2.38	2.67	2.90	2.74	2.70	2.90	2.88	2.74	2.45	2.53	2.70	3.10	2.80
INT	6.17	6.50	6.97	6.66	6.26	6.25	6.22	7.08	6.90	6.34	6.12	5.95	6.25	5.86
ART INT	6.25	6.35	6.70	6.44	6.11	6.21	6.20	6.78	6.76	6.31	6.14	5.91	6.21	6.03
Koch	3.53	4.30	4.99	4.71	4.85	4.71	4.50	3.15	3.69	4.01	4.00	4.54	4.79	4.76
ATS	6.56	6.16	6.16	5.75	5.53	5.09	5.62	11.73	9.56	7.46	6.45	5.91	6.28	6.06
large design (4*6)														
parametric	9.33	9.46	9.03	8.07	9.41	10.31	10.65	9.20	9.32	9.34	9.10	9.20	9.30	9.74
parametric HF-adj	5.34	5.14	4.85	4.45	5.35	6.01	6.07	5.29	5.18	5.12	4.96	4.97	5.56	5.62
van der Waerden	2.32	2.59	2.71	2.52	2.89	3.31	3.05	2.20	2.31	2.41	2.71	2.95	3.15	3.17
KWF	2.18	2.42	2.52	2.38	2.71	3.09	2.88	2.06	2.16	2.25	2.55	2.77	2.99	2.84
Puri & Sen INT	3.95	4.29	4.33	4.01	5.40	5.93	5.90	3.51	4.09	4.45	4.35	4.97	5.30	5.35
Puri & Sen	2.87	2.99	3.01	2.99	4.01	4.11	4.05	2.31	2.75	3.02	3.12	3.49	3.73	3.87
INT	8.45	8.50	8.18	7.54	8.81	9.70	10.02	8.05	8.29	8.30	8.19	8.43	8.99	9.03
ART INT	8.55	8.53	8.07	7.40	8.53	9.43	10.15	7.98	8.15	8.23	8.15	8.11	8.57	8.69
Koch	2.38	3.19	3.85	3.85	4.85	5.12	4.93	2.08	3.03	3.86	4.19	4.81	5.04	5.08
ATS	5.07	5.05	4.93	4.60	5.51	5.97	5.82	7.19	6.24	5.35	5.04	5.19	5.09	5.40



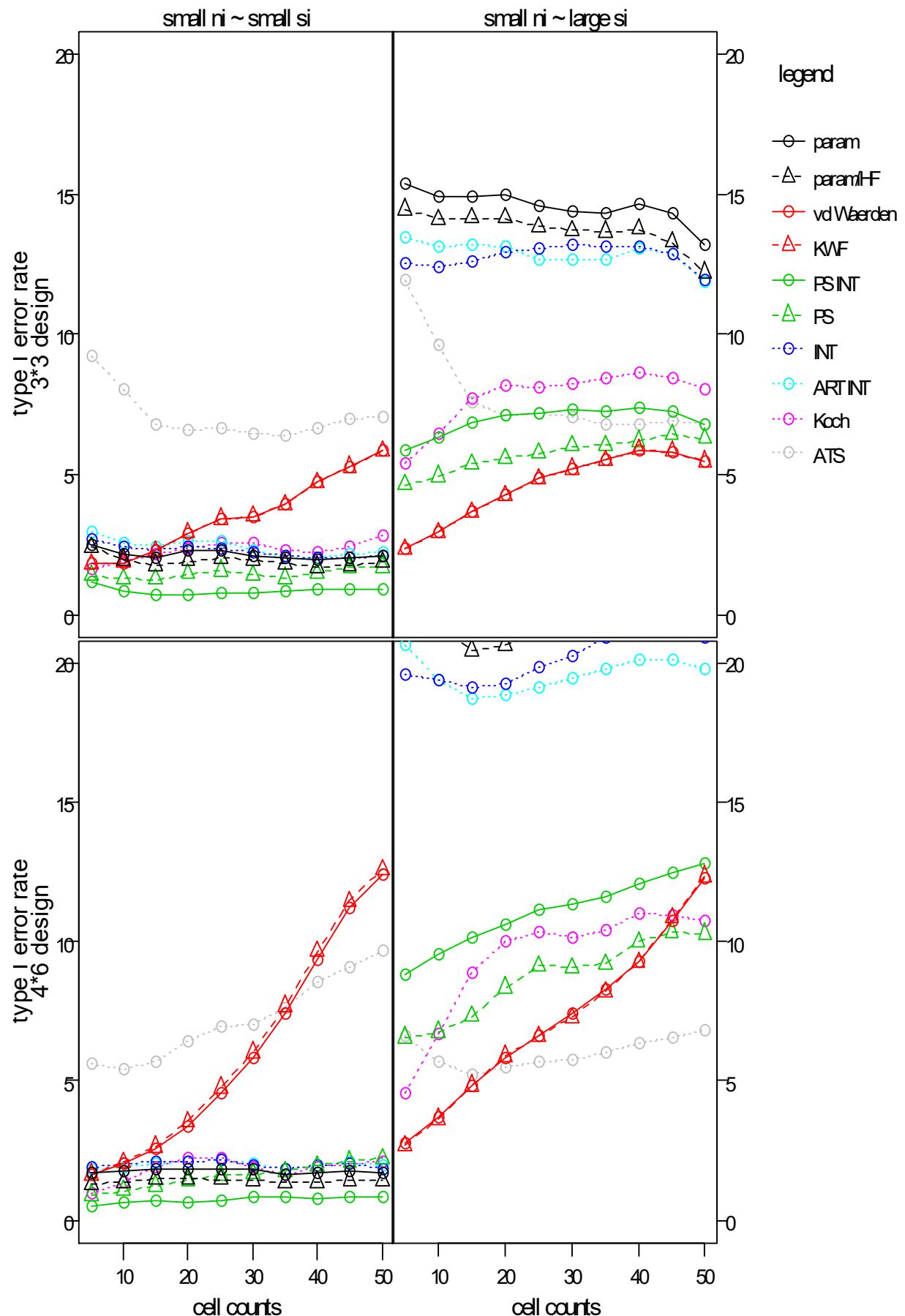
1. 9. 2. 4 normal distribution - unequal variances (on A and B)

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.31	6.04	6.47	6.66	5.83	6.00	6.42	5.75	5.69	5.42	5.47	5.16	4.79	5.02
parametric HF-adj	5.72	5.50	5.85	6.07	5.25	5.41	5.94	5.23	5.19	4.94	4.94	4.72	4.41	4.70
van der Waerden	2.90	3.69	4.97	6.41	9.20	14.15	19.28	3.48	4.42	6.00	8.22	13.32	20.26	26.37
KWF	2.90	3.69	4.97	6.41	9.20	14.15	19.28	3.48	4.42	6.00	8.22	13.32	20.26	26.37
Puri & Sen INT	2.05	2.35	2.92	3.29	2.79	3.12	3.57	2.11	2.50	2.67	2.74	2.90	2.79	2.88
Puri & Sen	2.37	2.77	3.47	3.86	3.94	4.82	5.97	2.65	3.44	4.14	4.62	5.01	6.00	7.14
INT	6.05	6.01	6.35	6.49	5.58	5.94	6.75	5.48	5.60	5.64	5.90	6.09	5.57	5.63
ART INT	6.69	6.29	6.53	6.79	6.09	6.31	6.90	5.71	5.91	5.84	5.94	5.69	5.50	5.65
Koch	3.75	4.29	4.99	5.31	5.11	5.66	5.90	3.18	4.00	4.76	5.31	5.59	5.70	5.46
ATS	6.65	6.44	6.71	7.11	7.12	8.33	10.19	11.75	9.55	8.01	8.03	7.83	7.39	7.77
large design (4*6)														
parametric	7.70	7.66	7.41	7.12	7.64	7.88	8.00	6.33	6.40	6.00	5.88	6.70	6.50	6.74
parametric HF-adj	6.50	6.36	6.16	6.04	6.73	6.83	7.19	5.35	5.54	5.20	5.01	5.62	5.59	5.99
van der Waerden	3.48	4.34	5.81	6.86	10.85	14.89	19.26	2.96	3.96	5.34	7.00	10.68	14.89	19.25
KWF	3.48	4.30	5.76	6.91	10.72	14.77	19.16	3.06	3.94	5.31	7.04	10.54	14.46	19.37
Puri & Sen INT	3.76	4.05	4.29	4.38	5.09	5.25	5.56	3.25	3.35	3.41	3.75	4.21	4.24	4.37
Puri & Sen	3.58	4.09	4.67	4.85	5.67	6.62	7.27	2.85	3.42	3.92	4.46	5.80	6.09	7.07
INT	7.25	7.22	7.20	7.07	7.40	7.65	8.20	6.71	6.64	6.15	6.09	6.83	6.61	7.17
ART INT	7.78	7.89	7.73	7.36	7.68	7.86	8.09	6.58	6.66	6.36	6.34	7.04	7.03	7.35
Koch	2.83	3.75	4.69	4.95	6.00	6.21	6.03	2.61	3.65	4.42	4.61	5.26	5.53	5.85
ATS	4.93	5.00	5.35	5.58	6.45	7.71	8.27	4.26	4.69	5.03	5.34	6.12	6.90	7.82



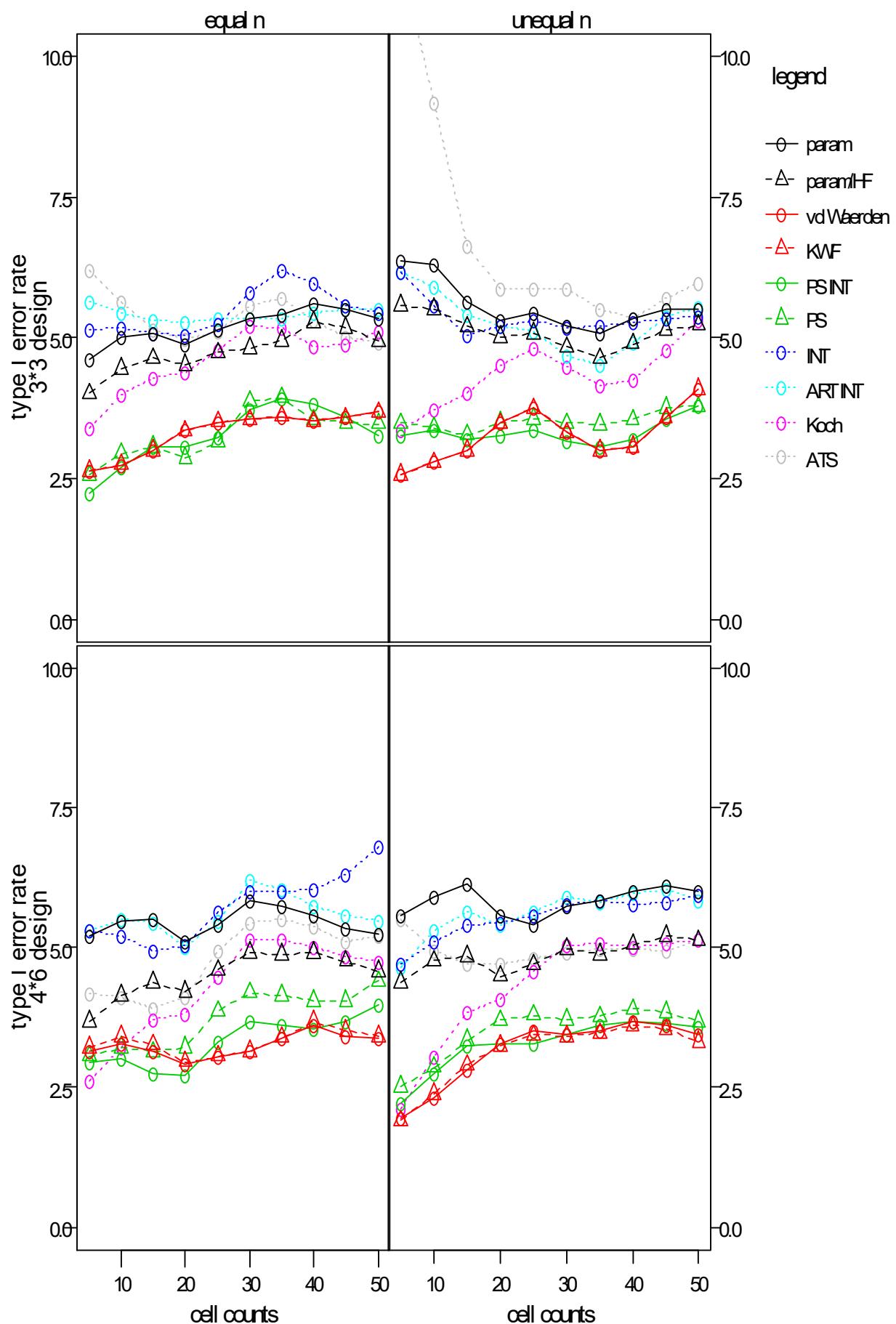
1. 9. 2. 5 normal distribution - unequal variances (on A) - pairing

method	small $n_i \sim$ small s_i							small $n_i \sim$ large s_i						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.50	2.14	2.04	2.26	2.10	1.96	2.10	15.37	14.91	14.91	14.95	14.34	14.65	13.17
parametric HF-adj	2.40	1.96	1.75	1.91	1.95	1.69	1.88	14.44	14.10	14.13	14.14	13.70	13.74	12.21
van der Waerden	1.80	1.85	2.26	2.91	3.50	4.72	5.82	2.33	2.92	3.64	4.25	5.20	5.88	5.46
KWF	1.80	1.85	2.26	2.91	3.50	4.72	5.82	2.33	2.92	3.64	4.25	5.20	5.88	5.46
Puri & Sen INT	1.15	0.81	0.68	0.73	0.79	0.89	0.87	5.83	6.30	6.86	7.10	7.28	7.40	6.78
Puri & Sen	1.38	1.27	1.26	1.45	1.41	1.48	1.70	4.62	4.94	5.36	5.56	6.01	6.19	6.28
INT	2.67	2.41	2.31	2.41	2.20	1.99	2.08	12.52	12.39	12.57	12.90	13.21	13.10	11.94
ART INT	2.94	2.54	2.39	2.61	2.31	2.04	2.20	13.44	13.10	13.20	13.10	12.65	13.02	11.86
Koch	1.60	1.89	2.17	2.36	2.54	2.20	2.79	5.38	6.42	7.70	8.16	8.26	8.65	8.00
ATS	9.19	8.00	6.76	6.60	6.44	6.64	7.03	11.90	9.59	7.59	7.12	7.06	6.76	6.76
large design (4*6)														
parametric	1.70	1.75	1.81	1.81	1.81	1.69	1.72	24.98	23.64	22.68	22.86	23.40	24.52	23.43
parametric HF-adj	1.28	1.34	1.50	1.50	1.45	1.38	1.43	22.54	21.36	20.46	20.64	21.24	22.01	21.43
van der Waerden	1.61	2.05	2.59	3.38	5.83	9.35	12.39	2.74	3.70	4.85	5.81	7.39	9.25	12.28
KWF	1.65	2.09	2.64	3.54	6.03	9.64	12.57	2.69	3.64	4.84	5.89	7.27	9.26	12.34
Puri & Sen INT	0.50	0.61	0.68	0.64	0.85	0.80	0.85	8.81	9.57	10.16	10.59	11.34	12.09	12.80
Puri & Sen	0.92	1.07	1.24	1.43	1.66	1.95	2.22	6.55	6.76	7.31	8.35	9.05	9.98	10.27
INT	1.90	2.04	2.12	2.12	2.00	1.95	1.85	19.55	19.35	19.09	19.24	20.26	21.70	20.94
ART INT	1.85	1.88	2.04	2.11	2.04	2.00	1.98	20.61	19.36	18.73	18.85	19.43	20.12	19.80
Koch	0.98	1.39	1.92	2.25	1.89	1.88	2.08	4.59	6.72	8.90	10.03	10.14	10.98	10.75
ATS	5.65	5.41	5.67	6.42	7.04	8.52	9.66	6.59	5.69	5.22	5.51	5.76	6.35	6.80



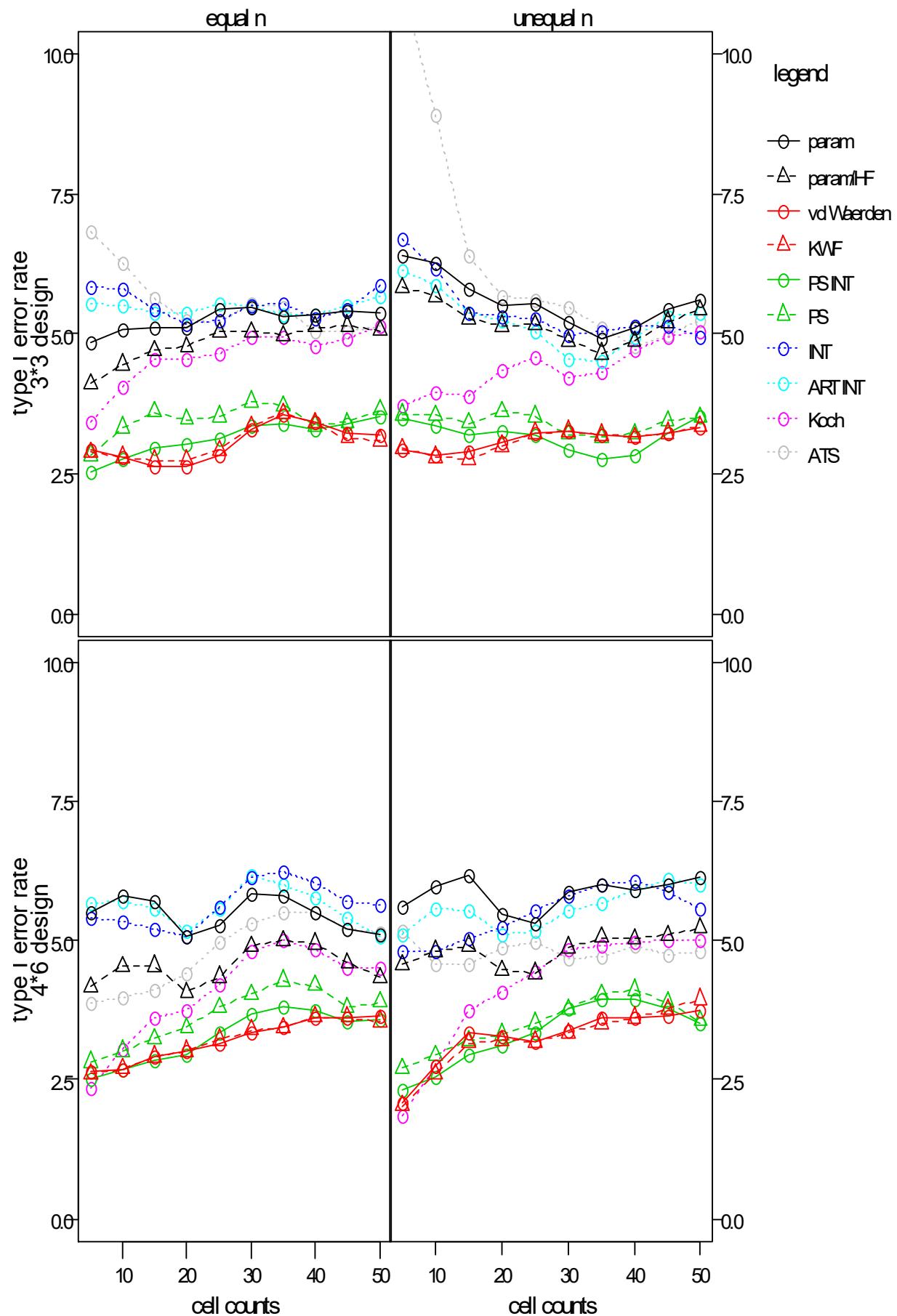
1. 9. 2. 6 exponential distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.60	5.00	5.08	4.88	5.35	5.61	5.33	6.36	6.28	5.62	5.29	5.22	5.35	5.50
parametric HF-adj	4.01	4.45	4.64	4.51	4.81	5.28	4.93	5.57	5.51	5.19	5.01	4.83	4.89	5.22
van der Waerden	2.63	2.74	2.99	3.34	3.55	3.51	3.68	2.56	2.79	3.00	3.48	3.31	3.06	4.08
KWF	2.63	2.74	2.99	3.34	3.55	3.51	3.68	2.56	2.79	3.00	3.48	3.31	3.06	4.08
Puri & Sen INT	2.23	2.69	3.06	3.06	3.71	3.83	3.26	3.26	3.34	3.18	3.25	3.16	3.20	3.80
Puri & Sen	2.55	2.94	3.06	2.86	3.88	3.54	3.47	3.48	3.40	3.27	3.49	3.48	3.54	3.78
INT	5.13	5.16	5.08	5.03	5.80	5.95	5.43	6.15	5.58	5.05	5.21	5.16	5.28	5.38
ART INT	5.62	5.45	5.29	5.26	5.34	5.44	5.50	6.15	5.89	5.41	5.20	4.69	4.92	5.53
Koch	3.40	3.98	4.28	4.38	5.19	4.85	5.12	3.36	3.71	4.01	4.51	4.47	4.24	5.29
ATS	6.19	5.65	5.15	4.96	5.57	5.30	4.90	11.82	9.16	6.64	5.88	5.85	5.33	5.97
large design (4*6)														
parametric	5.20	5.46	5.50	5.11	5.85	5.58	5.23	5.57	5.90	6.12	5.56	5.73	6.01	6.00
parametric HF-adj	3.68	4.14	4.38	4.21	4.91	4.91	4.58	4.38	4.76	4.84	4.49	4.97	5.05	5.13
van der Waerden	3.15	3.29	3.14	2.90	3.14	3.61	3.37	1.95	2.30	2.81	3.28	3.46	3.66	3.43
KWF	3.21	3.41	3.26	2.96	3.15	3.68	3.42	1.90	2.39	2.90	3.25	3.42	3.60	3.31
Puri & Sen INT	2.96	3.02	2.75	2.71	3.67	3.55	3.99	2.20	2.76	3.26	3.27	3.46	3.67	3.57
Puri & Sen	3.06	3.22	3.14	3.22	4.19	4.04	4.40	2.52	2.86	3.35	3.70	3.71	3.90	3.68
INT	5.32	5.20	4.95	5.03	6.00	6.03	6.80	4.70	5.11	5.42	5.44	5.76	5.78	5.93
ART INT	5.32	5.50	5.45	5.01	6.19	5.75	5.48	4.65	5.30	5.65	5.42	5.91	5.97	5.83
Koch	2.60	3.20	3.70	3.81	5.15	4.99	4.75	2.11	3.06	3.84	4.06	5.05	5.01	5.13
ATS	4.17	4.12	3.92	4.10	5.43	5.36	5.19	5.49	4.95	4.72	4.70	4.89	4.97	5.15



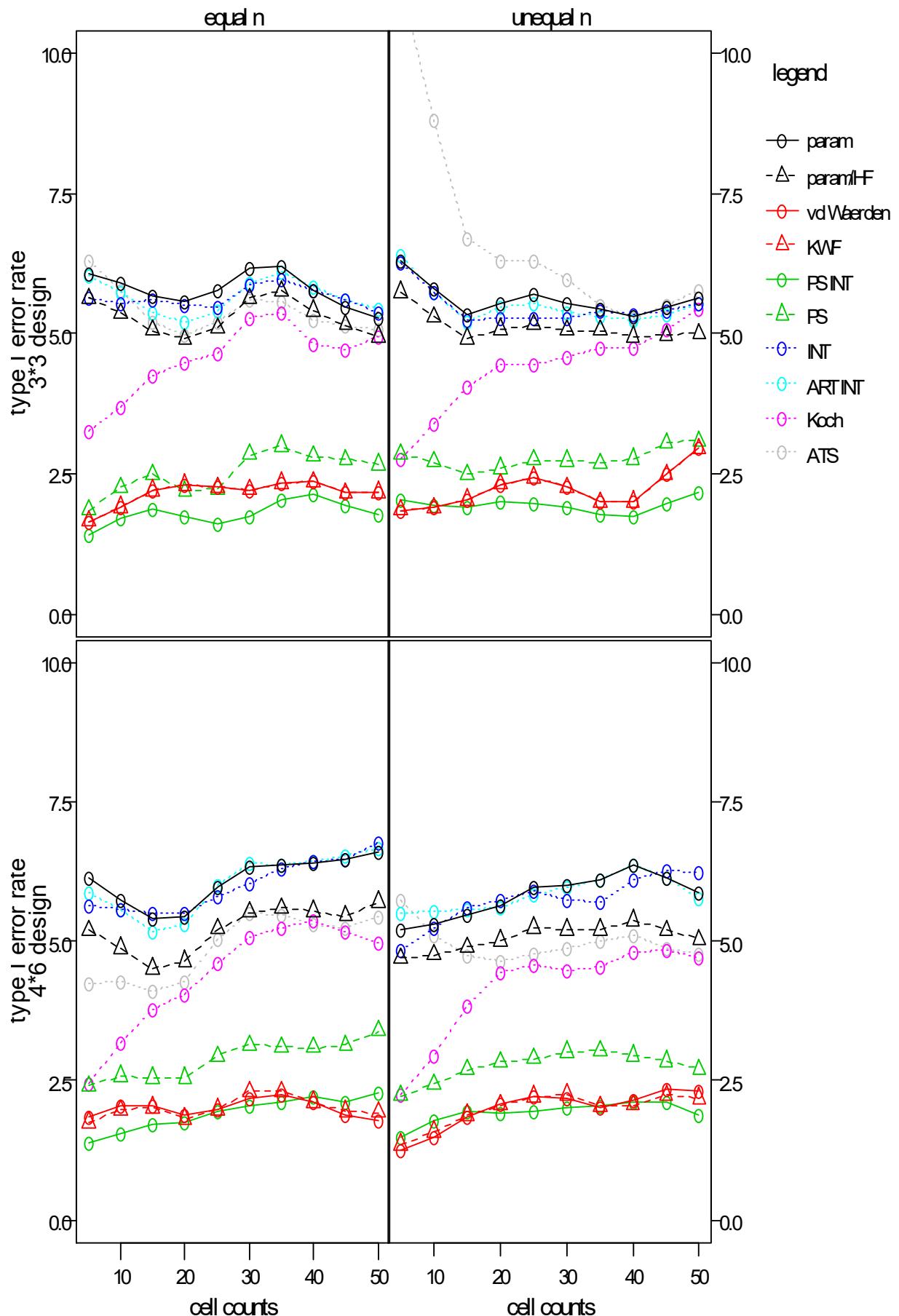
1. 9. 2. 7 exponential distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.83	5.06	5.11	5.11	5.47	5.35	5.37	6.38	6.26	5.79	5.51	5.21	5.11	5.60
parametric HF-adj	4.10	4.45	4.70	4.77	5.03	5.12	5.05	5.82	5.67	5.28	5.14	4.86	4.86	5.43
van der Waerden	2.92	2.78	2.62	2.62	3.28	3.41	3.20	2.93	2.84	2.89	3.06	3.27	3.15	3.32
KWF	2.88	2.80	2.73	2.74	3.34	3.40	3.10	2.95	2.80	2.76	2.99	3.26	3.15	3.35
Puri & Sen INT	2.53	2.76	2.97	3.04	3.34	3.29	3.53	3.48	3.35	3.19	3.27	2.92	2.84	3.53
Puri & Sen	2.83	3.33	3.60	3.47	3.79	3.36	3.63	3.56	3.55	3.40	3.61	3.20	3.21	3.50
INT	5.82	5.79	5.44	5.16	5.51	5.26	5.87	6.70	6.15	5.36	5.31	4.97	5.15	4.93
ART INT	5.53	5.51	5.38	5.36	5.49	5.35	5.67	6.12	5.86	5.38	5.24	4.54	4.95	5.38
Koch	3.43	4.04	4.54	4.56	4.94	4.78	5.13	3.73	3.94	3.90	4.35	4.23	4.70	5.03
ATS	6.82	6.26	5.62	5.24	5.54	5.05	5.13	11.26	8.89	6.41	5.66	5.48	4.76	5.23
large design (4*6)														
parametric	5.50	5.81	5.70	5.08	5.84	5.51	5.10	5.60	5.97	6.16	5.47	5.88	5.91	6.15
parametric HF-adj	4.17	4.53	4.54	4.06	4.89	4.94	4.33	4.57	4.81	4.91	4.46	4.88	5.03	5.22
van der Waerden	2.63	2.67	2.92	3.01	3.33	3.60	3.65	2.08	2.75	3.35	3.28	3.39	3.62	3.75
KWF	2.60	2.69	2.92	3.01	3.39	3.62	3.55	2.03	2.60	3.16	3.20	3.33	3.61	3.95
Puri & Sen INT	2.50	2.67	2.84	2.95	3.69	3.74	3.57	2.32	2.56	2.95	3.10	3.76	3.94	3.52
Puri & Sen	2.82	3.01	3.24	3.43	4.03	4.19	3.89	2.70	2.94	3.20	3.31	3.77	4.11	3.56
INT	5.40	5.34	5.19	5.06	6.14	6.05	5.65	4.79	4.81	5.04	5.25	5.79	6.08	5.58
ART INT	5.68	5.71	5.58	5.17	6.17	5.76	5.07	5.11	5.56	5.55	5.10	5.53	5.90	6.00
Koch	2.35	3.04	3.60	3.73	4.79	4.85	4.50	1.85	2.76	3.75	4.08	4.84	4.96	5.00
ATS	3.87	3.96	4.10	4.41	5.29	5.50	5.15	5.17	4.59	4.58	4.88	4.67	4.92	4.80



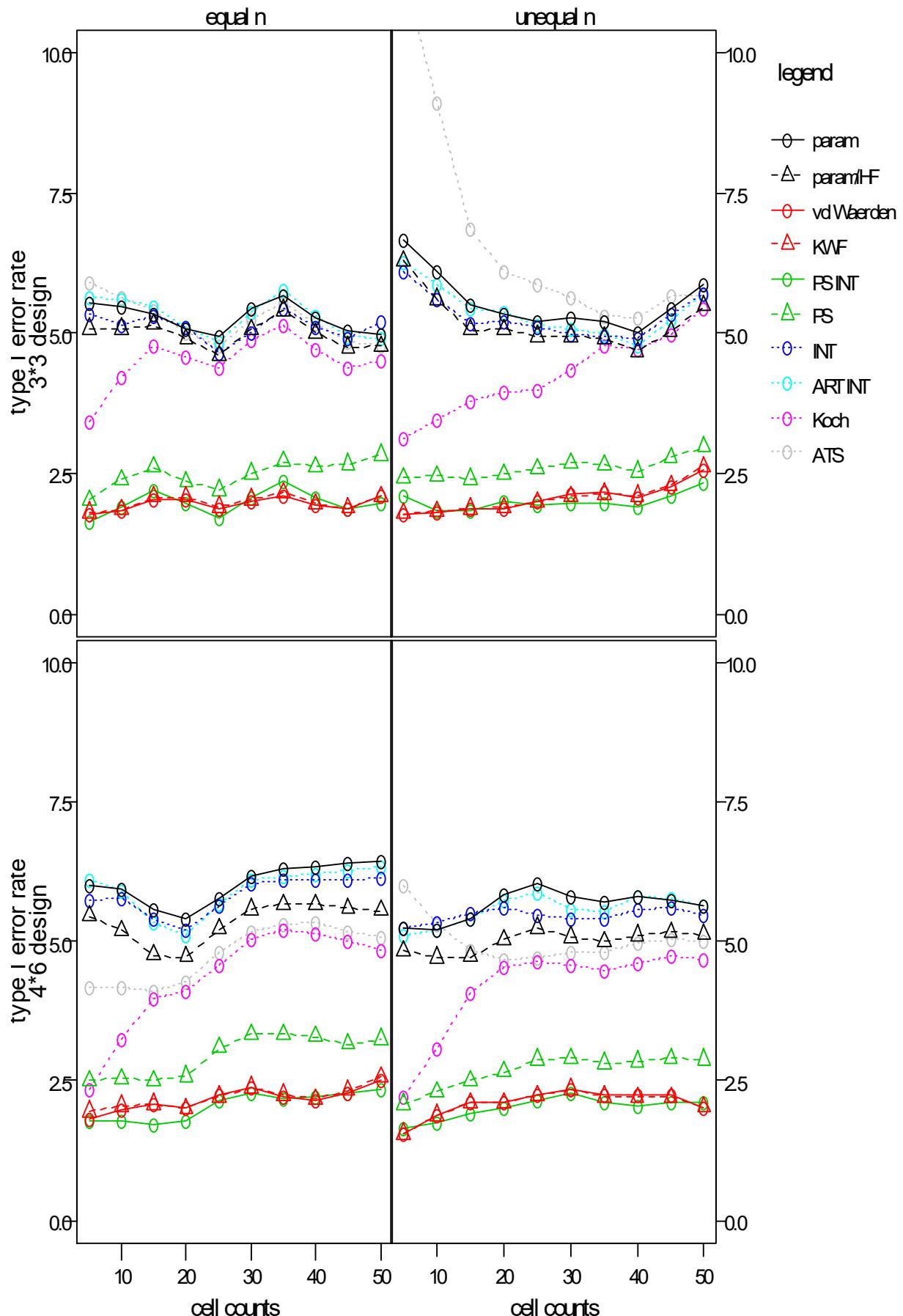
1. 9. 2. 8 uniform distribution

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	6.05	5.90	5.67	5.57	6.17	5.76	5.28	6.29	5.80	5.34	5.55	5.55	5.30	5.62
parametric HF-adj	5.63	5.36	5.05	4.90	5.62	5.40	4.95	5.74	5.29	4.91	5.08	5.05	4.95	5.00
van der Waerden	1.65	1.90	2.20	2.30	2.21	2.35	2.17	1.85	1.89	2.04	2.31	2.25	2.00	2.95
KWF	1.65	1.90	2.20	2.30	2.21	2.35	2.17	1.85	1.89	2.04	2.31	2.25	2.00	2.95
Puri & Sen INT	1.40	1.71	1.87	1.75	1.74	2.14	1.77	2.05	1.92	1.90	2.00	1.89	1.73	2.17
Puri & Sen	1.85	2.26	2.49	2.19	2.84	2.81	2.67	2.85	2.71	2.48	2.60	2.73	2.76	3.08
INT	5.62	5.55	5.59	5.50	5.85	5.76	5.38	6.27	5.74	5.24	5.28	5.28	5.35	5.52
ART INT	6.02	5.72	5.36	5.20	5.91	5.83	5.43	6.39	5.72	5.21	5.46	5.36	5.24	5.52
Koch	3.26	3.67	4.25	4.47	5.28	4.80	4.95	2.76	3.39	4.05	4.44	4.57	4.75	5.43
ATS	6.29	5.75	5.19	4.99	5.61	5.24	5.06	11.28	8.82	6.69	6.30	5.97	5.28	5.78
large design (4*6)														
parametric	6.15	5.75	5.39	5.45	6.33	6.39	6.60	5.20	5.29	5.47	5.65	6.00	6.38	5.88
parametric HF-adj	5.20	4.88	4.51	4.64	5.52	5.54	5.70	4.70	4.75	4.89	5.01	5.21	5.38	5.03
van der Waerden	1.86	2.04	2.04	1.89	2.19	2.12	1.78	1.25	1.49	1.85	2.09	2.17	2.14	2.30
KWF	1.75	1.97	2.02	1.82	2.30	2.12	1.93	1.35	1.59	1.88	2.06	2.25	2.06	2.18
Puri & Sen INT	1.40	1.54	1.70	1.76	2.05	2.20	2.29	1.48	1.78	1.95	1.92	2.02	2.12	1.88
Puri & Sen	2.40	2.58	2.55	2.55	3.14	3.09	3.39	2.23	2.44	2.69	2.83	3.01	2.95	2.70
INT	5.63	5.56	5.49	5.51	6.05	6.45	6.75	4.85	5.24	5.59	5.75	5.73	6.09	6.25
ART INT	5.87	5.56	5.16	5.29	6.39	6.43	6.68	5.50	5.55	5.58	5.59	5.98	6.38	5.77
Koch	2.45	3.18	3.79	4.05	5.06	5.36	4.98	2.26	2.95	3.85	4.45	4.46	4.81	4.70
ATS	4.23	4.26	4.11	4.28	5.49	5.31	5.45	5.74	5.10	4.74	4.65	4.88	5.09	4.78



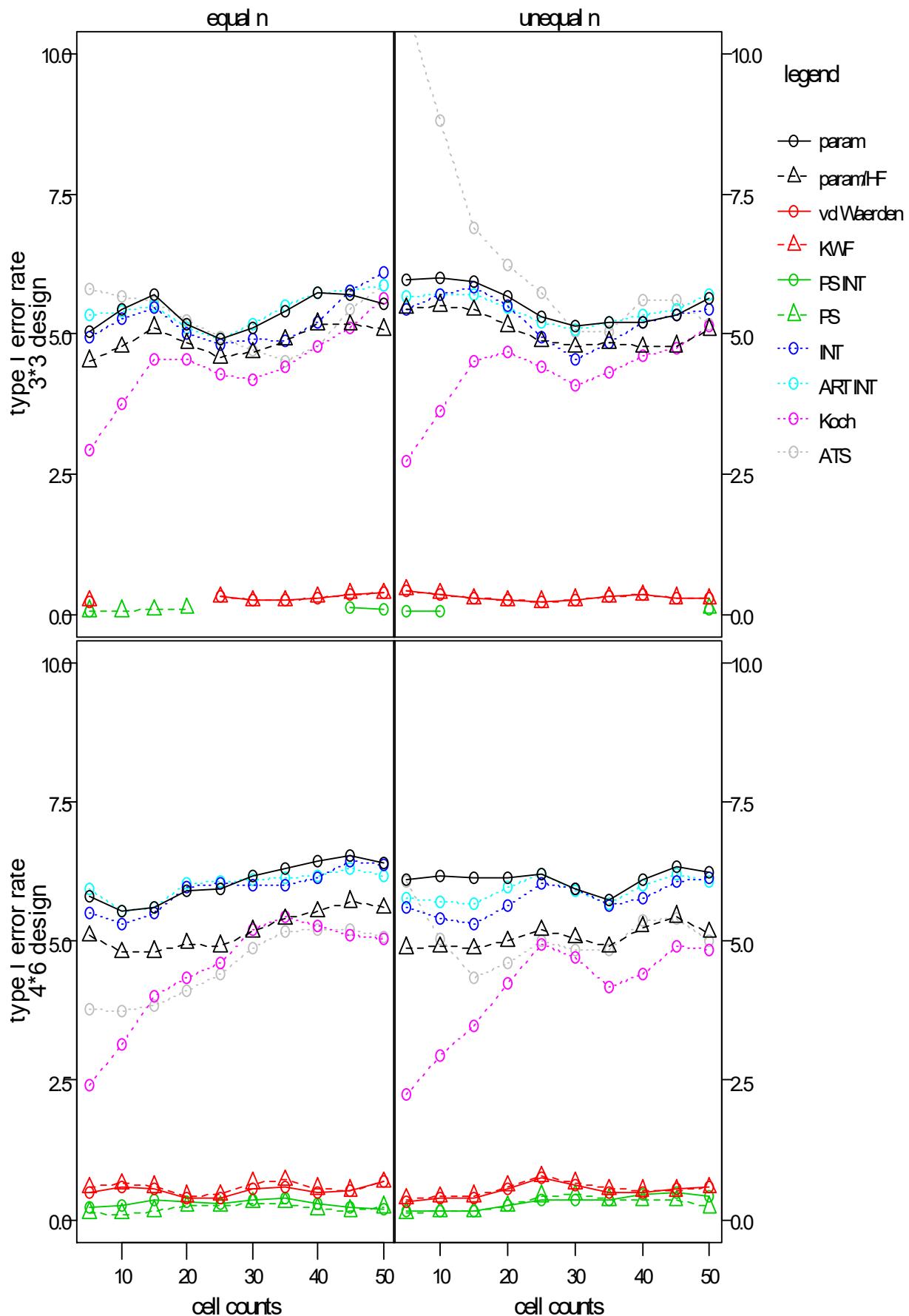
1. 9. 2. 9 uniform distribution - discrete values

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.55	5.46	5.35	5.06	5.44	5.28	4.98	6.67	6.11	5.49	5.34	5.26	5.00	5.87
parametric HF-adj	5.08	5.08	5.15	4.90	5.06	5.00	4.77	6.29	5.61	5.05	5.06	4.94	4.67	5.48
van der Waerden	1.78	1.83	2.05	2.05	1.99	1.94	2.09	1.77	1.80	1.86	1.88	2.12	2.08	2.55
KWF	1.80	1.85	2.08	2.08	2.04	1.96	2.09	1.78	1.83	1.87	1.89	2.09	2.10	2.62
Puri & Sen INT	1.63	1.91	2.21	1.96	2.06	2.07	1.97	2.09	1.82	1.82	1.99	1.98	1.90	2.32
Puri & Sen	2.03	2.39	2.61	2.35	2.50	2.62	2.83	2.42	2.45	2.40	2.49	2.69	2.53	2.97
INT	5.34	5.15	5.31	5.11	5.01	5.10	5.22	6.10	5.61	5.16	5.22	4.99	4.91	5.70
ART INT	5.65	5.59	5.48	5.11	5.38	5.31	4.90	6.27	5.86	5.44	5.38	5.06	4.76	5.70
Koch	3.43	4.20	4.79	4.58	4.86	4.70	4.52	3.11	3.45	3.77	3.95	4.36	4.71	5.42
ATS	5.90	5.62	5.41	5.00	5.24	5.16	4.77	11.38	9.11	6.84	6.10	5.65	5.28	5.68
large design (4*6)														
parametric	6.00	5.94	5.57	5.39	6.16	6.35	6.43	5.23	5.22	5.40	5.84	5.79	5.80	5.65
parametric HF-adj	5.45	5.19	4.75	4.72	5.58	5.66	5.55	4.83	4.71	4.72	5.03	5.07	5.11	5.12
van der Waerden	1.83	1.99	2.07	2.02	2.39	2.14	2.52	1.55	1.88	2.12	2.12	2.36	2.25	2.03
KWF	1.95	2.05	2.08	2.01	2.38	2.17	2.57	1.56	1.89	2.11	2.11	2.35	2.21	2.03
Puri & Sen INT	1.78	1.79	1.71	1.78	2.29	2.21	2.35	1.65	1.75	1.90	2.01	2.27	2.04	2.10
Puri & Sen	2.50	2.54	2.50	2.59	3.34	3.29	3.25	2.08	2.31	2.51	2.66	2.90	2.85	2.88
INT	5.73	5.78	5.41	5.19	6.03	6.10	6.12	5.23	5.34	5.52	5.59	5.39	5.56	5.46
ART INT	6.10	5.91	5.34	5.12	6.10	6.20	6.35	5.10	5.21	5.39	5.74	5.56	5.80	5.65
Koch	2.35	3.23	3.96	4.10	5.05	5.15	4.85	2.21	3.08	4.08	4.53	4.59	4.61	4.68
ATS	4.18	4.16	4.12	4.28	5.17	5.34	5.08	6.01	5.31	4.84	4.68	4.81	4.96	5.00



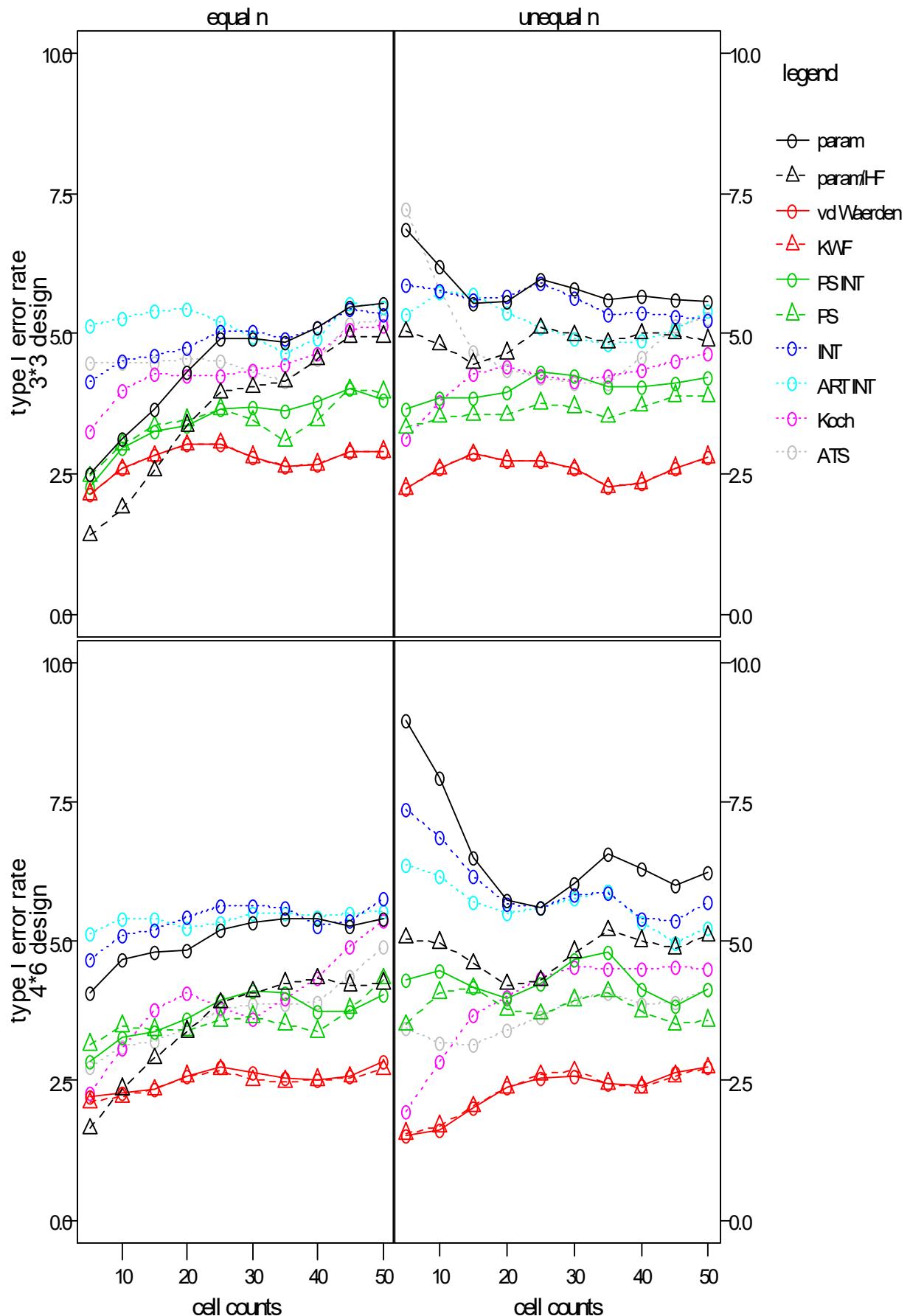
1. 9. 2. 10 lognormal distribution - equal variances

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.05	5.44	5.69	5.18	5.10	5.72	5.55	5.98	5.99	5.94	5.66	5.14	5.21	5.62
parametric HF-adj	4.52	4.77	5.11	4.83	4.67	5.17	5.07	5.45	5.50	5.42	5.14	4.76	4.76	5.07
van der Waerden	0.23	0.05	0.05	0.05	0.24	0.30	0.37	0.43	0.36	0.28	0.24	0.25	0.34	0.27
KWF	0.23	0.05	0.05	0.05	0.24	0.30	0.37	0.43	0.36	0.28	0.24	0.25	0.34	0.27
Puri & Sen INT	0.05	0.05	0.05	0.05	0.05	0.05	0.10	0.05	0.06	0.05	0.05	0.05	0.05	0.08
Puri & Sen	0.05	0.05	0.08	0.10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.10
INT	4.95	5.26	5.48	5.01	4.90	5.21	6.10	5.42	5.71	5.84	5.51	4.56	5.22	5.43
ART INT	5.33	5.41	5.49	5.11	5.17	5.72	5.85	5.68	5.70	5.69	5.47	5.07	5.33	5.69
Koch	2.93	3.74	4.54	4.55	4.19	4.78	5.62	2.73	3.61	4.50	4.67	4.07	4.61	5.14
ATS	5.80	5.67	5.58	5.23	4.70	4.79	5.85	10.86	8.82	6.89	6.22	5.04	5.59	5.18
large design (4*6)														
parametric	5.80	5.53	5.61	5.89	6.16	6.44	6.41	6.10	6.16	6.15	6.15	5.94	6.11	6.25
parametric HF-adj	5.09	4.80	4.81	4.95	5.18	5.53	5.60	4.87	4.90	4.86	5.00	5.05	5.25	5.15
van der Waerden	0.48	0.58	0.54	0.38	0.57	0.48	0.67	0.32	0.38	0.40	0.56	0.61	0.49	0.60
KWF	0.58	0.64	0.59	0.42	0.65	0.56	0.68	0.37	0.41	0.42	0.60	0.65	0.52	0.58
Puri & Sen INT	0.22	0.26	0.34	0.32	0.36	0.29	0.18	0.17	0.16	0.15	0.24	0.35	0.44	0.43
Puri & Sen	0.12	0.10	0.16	0.24	0.30	0.19	0.22	0.12	0.14	0.14	0.24	0.45	0.35	0.23
INT	5.52	5.29	5.50	5.96	6.01	6.15	6.36	5.60	5.41	5.29	5.65	5.95	5.76	6.13
ART INT	5.94	5.54	5.60	6.04	6.11	6.17	6.18	5.78	5.71	5.67	5.96	5.91	6.01	6.08
Koch	2.43	3.14	4.01	4.35	5.20	5.26	5.03	2.26	2.96	3.48	4.24	4.70	4.42	4.85
ATS	3.78	3.73	3.84	4.12	4.86	5.22	5.08	6.06	5.03	4.33	4.62	4.83	5.38	5.01



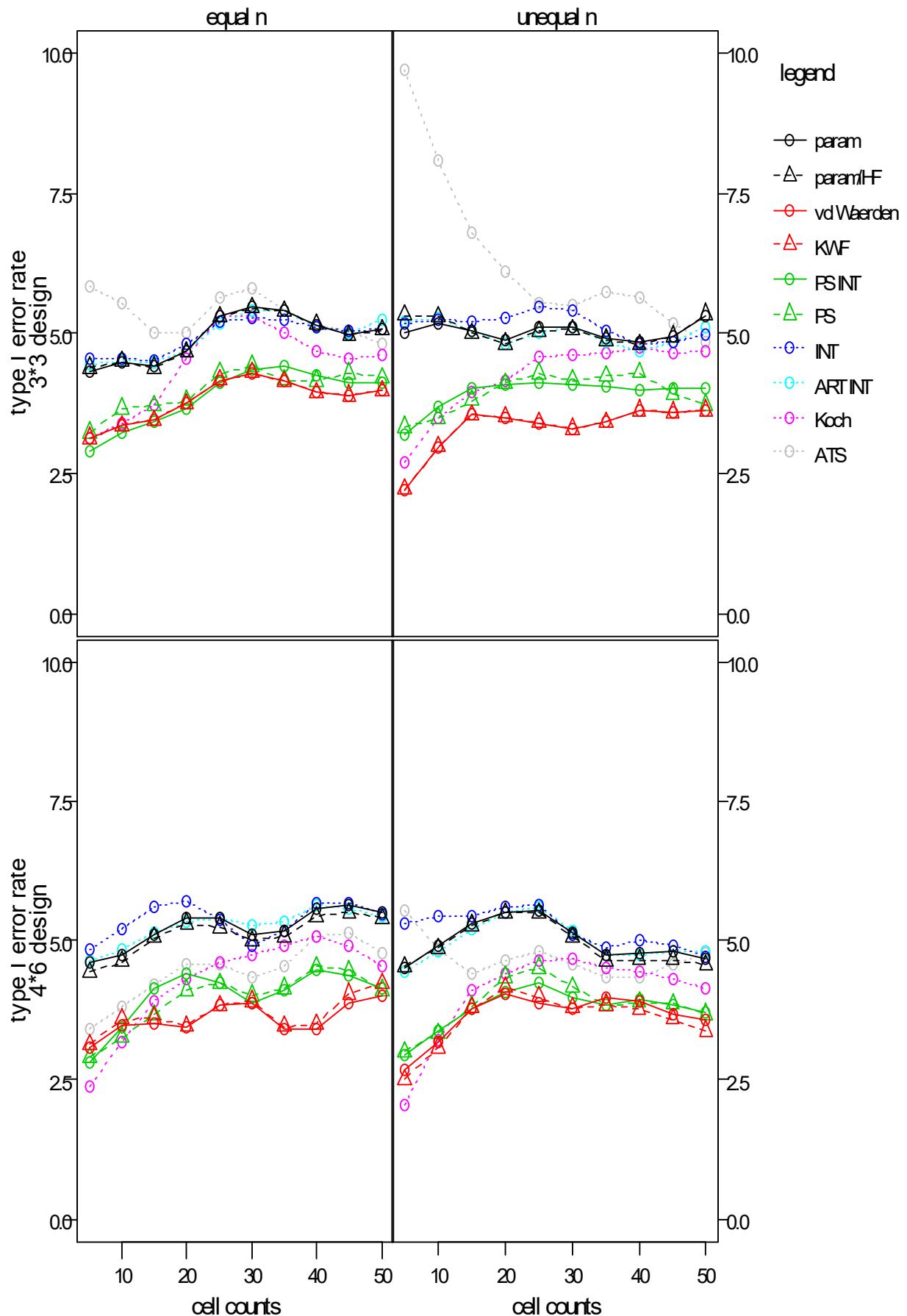
1. 9. 2. 11 normal distribution - equal variances - contaminated I

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	2.50	3.11	3.66	4.31	4.90	5.12	5.52	6.85	6.21	5.53	5.58	5.80	5.66	5.57
parametric HF-adj	1.40	1.88	2.55	3.36	4.04	4.54	4.95	5.03	4.80	4.46	4.65	4.96	5.00	4.88
van der Waerden	2.14	2.59	2.82	3.02	2.80	2.67	2.90	2.23	2.59	2.85	2.73	2.59	2.33	2.80
KWF	2.14	2.59	2.82	3.02	2.80	2.67	2.90	2.23	2.59	2.85	2.73	2.59	2.33	2.80
Puri & Sen INT	2.28	2.95	3.26	3.36	3.70	3.79	3.83	3.66	3.86	3.85	3.95	4.26	4.04	4.20
Puri & Sen	2.46	3.03	3.34	3.46	3.44	3.46	3.95	3.31	3.50	3.54	3.55	3.69	3.70	3.87
INT	4.15	4.50	4.60	4.74	5.05	5.10	5.35	5.87	5.78	5.60	5.66	5.64	5.36	5.25
ART INT	5.15	5.26	5.39	5.45	4.94	4.90	5.46	5.33	5.72	5.71	5.38	4.91	4.86	5.40
Koch	3.24	3.97	4.29	4.24	4.35	4.65	5.15	3.14	3.79	4.29	4.42	4.14	4.36	4.65
ATS	4.47	4.47	4.47	4.53	4.30	4.54	5.23	7.21	5.78	4.66	4.33	4.12	4.59	5.27
large design (4*6)														
parametric	4.06	4.66	4.79	4.83	5.33	5.39	5.42	8.95	7.92	6.50	5.74	6.04	6.31	6.22
parametric HF-adj	1.64	2.35	2.90	3.38	4.09	4.33	4.25	5.05	4.97	4.60	4.22	4.81	5.01	5.10
van der Waerden	2.23	2.27	2.34	2.57	2.65	2.50	2.85	1.52	1.62	2.00	2.38	2.59	2.42	2.75
KWF	2.10	2.21	2.34	2.58	2.51	2.52	2.70	1.55	1.69	2.04	2.39	2.67	2.38	2.73
Puri & Sen INT	2.84	3.29	3.39	3.60	4.10	3.75	4.05	4.30	4.46	4.17	3.97	4.67	4.15	4.15
Puri & Sen	3.15	3.48	3.41	3.40	3.64	3.38	4.32	3.50	4.08	4.16	3.76	3.94	3.75	3.58
INT	4.66	5.09	5.21	5.44	5.65	5.26	5.77	7.35	6.87	6.16	5.67	5.83	5.42	5.70
ART INT	5.15	5.42	5.39	5.25	5.51	5.44	5.53	6.38	6.18	5.69	5.50	5.77	5.34	5.25
Koch	2.28	3.08	3.78	4.06	3.61	4.34	5.38	1.94	2.84	3.66	4.00	4.55	4.50	4.52
ATS	2.75	3.12	3.21	3.44	3.88	3.90	4.92	3.45	3.17	3.16	3.40	3.96	3.89	4.15



1. 9. 2. 12 normal distribution - equal variances - contaminated II

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	4.31	4.49	4.41	4.67	5.47	5.15	5.08	5.00	5.16	5.04	4.88	5.12	4.83	5.29
parametric HF-adj	4.38	4.49	4.38	4.67	5.45	5.15	5.05	5.32	5.29	5.00	4.81	5.06	4.80	5.34
van der Waerden	3.13	3.34	3.45	3.74	4.29	3.94	3.97	2.21	2.97	3.55	3.50	3.29	3.62	3.62
KWF	3.13	3.34	3.45	3.74	4.29	3.94	3.97	2.21	2.97	3.55	3.50	3.29	3.62	3.62
Puri & Sen INT	2.88	3.23	3.41	3.66	4.36	4.25	4.10	3.18	3.68	4.01	4.09	4.08	3.98	4.03
Puri & Sen	3.23	3.65	3.71	3.80	4.42	4.15	4.20	3.33	3.49	3.80	4.11	4.16	4.29	3.72
INT	4.53	4.54	4.51	4.81	5.28	5.12	5.07	5.17	5.24	5.21	5.26	5.39	4.81	4.97
ART INT	4.45	4.51	4.47	4.69	5.40	5.11	5.25	5.22	5.26	5.05	4.80	5.11	4.68	5.09
Koch	3.13	3.40	3.71	4.54	5.31	4.66	4.60	2.68	3.50	3.94	4.15	4.60	4.74	4.67
ATS	5.83	5.54	5.00	5.02	5.79	5.14	4.81	9.68	8.07	6.80	6.11	5.50	5.64	4.85
large design (4*6)														
parametric	4.60	4.74	5.10	5.41	5.11	5.57	5.50	4.50	4.91	5.29	5.49	5.15	4.78	4.68
parametric HF-adj	4.43	4.62	5.05	5.31	5.00	5.43	5.40	4.53	4.86	5.28	5.50	5.06	4.65	4.57
van der Waerden	3.08	3.48	3.51	3.46	3.88	3.41	4.00	2.68	3.19	3.76	4.04	3.77	3.90	3.58
KWF	3.13	3.59	3.61	3.47	3.91	3.50	4.23	2.51	3.08	3.79	4.16	3.79	3.76	3.38
Puri & Sen INT	2.80	3.46	4.15	4.41	3.88	4.49	4.13	2.95	3.39	3.79	4.09	3.98	3.94	3.70
Puri & Sen	2.90	3.26	3.67	4.11	4.01	4.53	4.11	3.00	3.34	3.81	4.34	4.16	3.89	3.68
INT	4.85	5.19	5.59	5.71	4.92	5.67	5.47	5.32	5.44	5.44	5.59	5.12	5.01	4.70
ART INT	4.63	4.85	5.14	5.33	5.26	5.62	5.43	4.43	4.80	5.19	5.50	5.16	4.75	4.82
Koch	2.38	3.19	3.91	4.30	4.73	5.07	4.55	2.04	3.20	4.11	4.40	4.66	4.43	4.13
ATS	3.41	3.80	4.21	4.56	4.34	5.06	4.78	5.54	4.85	4.42	4.65	4.56	4.35	4.78



1. 9. 2. 13 normal distribution - equal variances - contaminated III

method	equal cell counts							unequal cell counts						
	5	10	15	20	30	40	50	5	10	15	20	30	40	50
small design (3*3)														
parametric	5.02	4.91	4.85	5.20	4.99	5.09	5.37	5.43	5.16	4.85	4.93	5.03	4.80	4.80
parametric HF-adj	4.58	4.66	4.74	5.01	4.81	4.96	5.10	5.08	4.94	4.74	4.78	4.91	4.75	4.75
van der Waerden	3.00	3.09	3.04	2.91	3.49	3.69	3.42	2.68	3.05	3.36	3.49	3.80	3.95	3.30
KWF	3.00	3.09	3.04	2.91	3.49	3.69	3.42	2.68	3.05	3.36	3.49	3.80	3.95	3.30
Puri & Sen INT	3.20	3.65	3.77	3.78	4.30	4.11	4.07	3.56	3.66	3.69	3.70	3.80	3.92	3.82
Puri & Sen	3.28	3.67	3.79	3.70	4.09	4.09	4.15	3.46	3.57	3.70	3.96	3.85	4.17	4.15
INT	5.33	5.38	5.04	4.90	5.39	5.34	5.08	5.93	5.65	5.34	5.29	5.39	5.29	4.82
ART INT	5.21	5.25	5.06	5.03	5.15	5.17	5.35	5.63	5.28	4.83	4.88	5.11	4.95	4.68
Koch	3.71	3.97	4.22	4.38	4.80	5.01	4.87	2.85	3.31	3.66	4.09	4.65	4.92	4.57
ATS	6.32	5.75	5.11	4.89	5.19	5.32	5.49	9.68	7.76	6.40	6.11	5.41	5.78	5.50
large design (4*6)														
parametric	5.26	5.51	5.40	5.41	5.94	5.38	5.52	5.62	5.59	5.27	5.22	5.91	5.44	5.45
parametric HF-adj	4.65	5.00	5.12	5.24	5.77	5.16	5.30	5.10	5.14	4.90	4.89	5.65	5.12	5.05
van der Waerden	2.80	3.21	3.33	3.20	3.51	3.23	3.58	2.55	2.73	2.76	2.81	3.35	3.10	3.63
KWF	2.68	3.06	3.15	3.08	3.60	3.21	3.62	2.70	2.81	2.75	2.75	3.25	3.19	3.73
Puri & Sen INT	2.93	3.31	3.42	3.55	4.17	4.04	4.15	3.18	3.49	3.56	3.60	4.26	3.94	3.78
Puri & Sen	3.03	3.60	3.64	3.38	3.99	3.64	4.22	3.30	3.41	3.29	3.30	4.04	3.74	3.43
INT	5.51	5.69	5.35	5.26	6.04	5.30	5.60	5.61	5.81	5.46	5.14	6.09	5.50	5.43
ART INT	5.78	5.84	5.46	5.22	5.96	5.50	5.50	5.93	5.92	5.50	5.22	5.76	5.38	5.22
Koch	2.47	3.53	3.95	4.05	5.10	4.94	5.18	2.39	3.19	3.67	4.05	4.92	4.21	4.56
ATS	3.93	4.34	4.25	4.22	4.90	4.45	5.57	5.89	5.17	4.66	4.74	5.39	4.58	4.68

