

Comparison of nonparametric analysis of variance methods - a Monte Carlo study

Part A: Two between subjects factors designs

Appendix 3

Tables and Graphs of the Power in Relation to n

All tables and graphs refer to $\alpha=0.05$. Reported are the proportions of rejections of the corresponding null hypothesis based on 2000 replications for each $n=5, \dots, 50$.

The graphs consist of two parts:

- The upper part shows the absolute power (proportions of rejections) in percent,
- the lower part shows the relative power, which is computed as the absolute power divided by the 25% trimmed mean of the power of the 8 methods for each $n=5, \dots, 50$. The purpose of the relative power is to make differences visible in the area of small n where the graphs of the absolute power of the 8 methods lie very close.

The legend for all graphs is the same:

—○—	param
--△--	RT
...+...	INT
·-×-·	ART
-◇-	ART+INT
-▽-	Puri & Sen
-⊠-	v.d.Waerden
-*-	ATS

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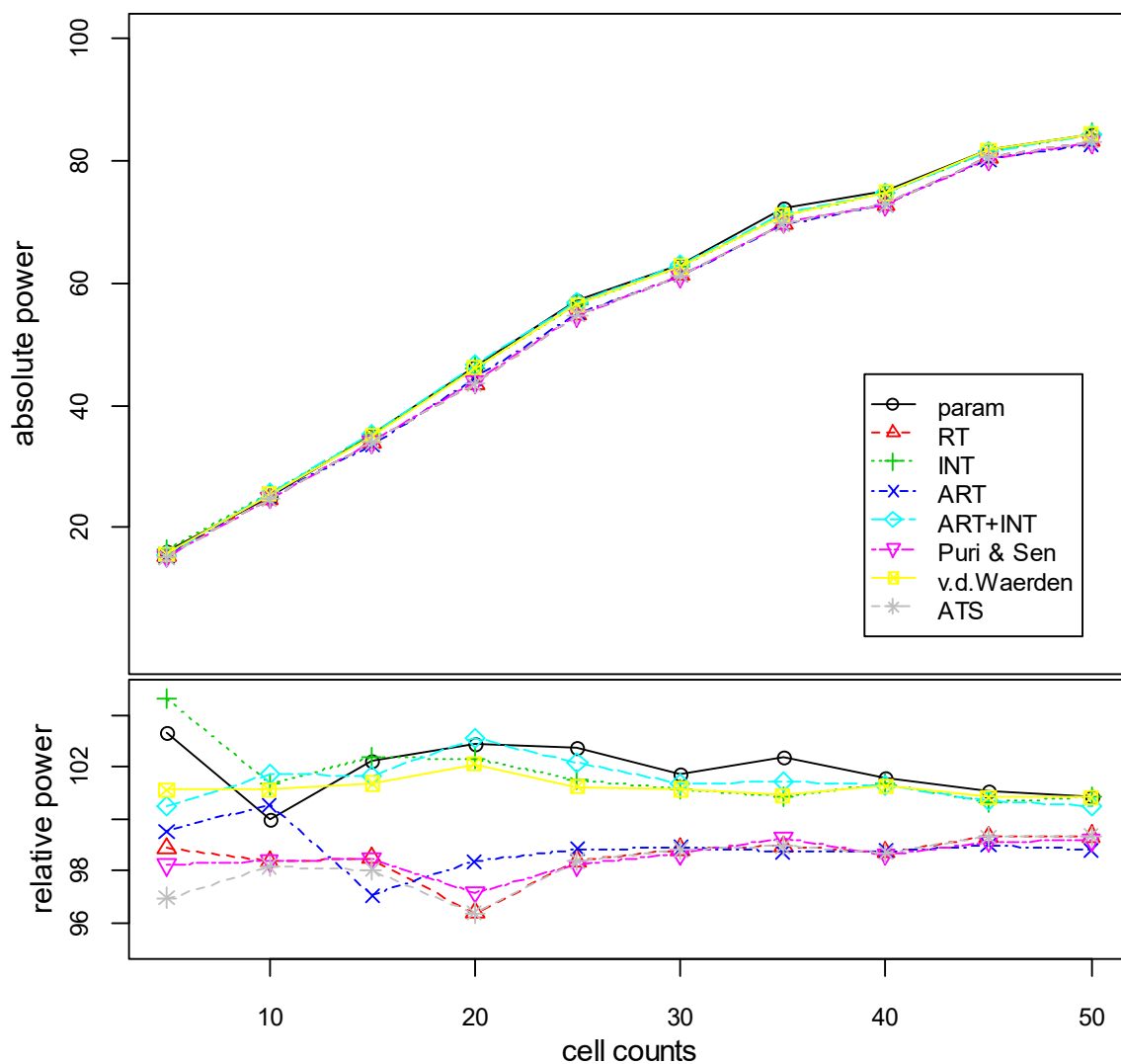
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3. 1. Main effect A

(effects $a_i = 0.3*s$ / equal n_i / # levels = $2*4$)

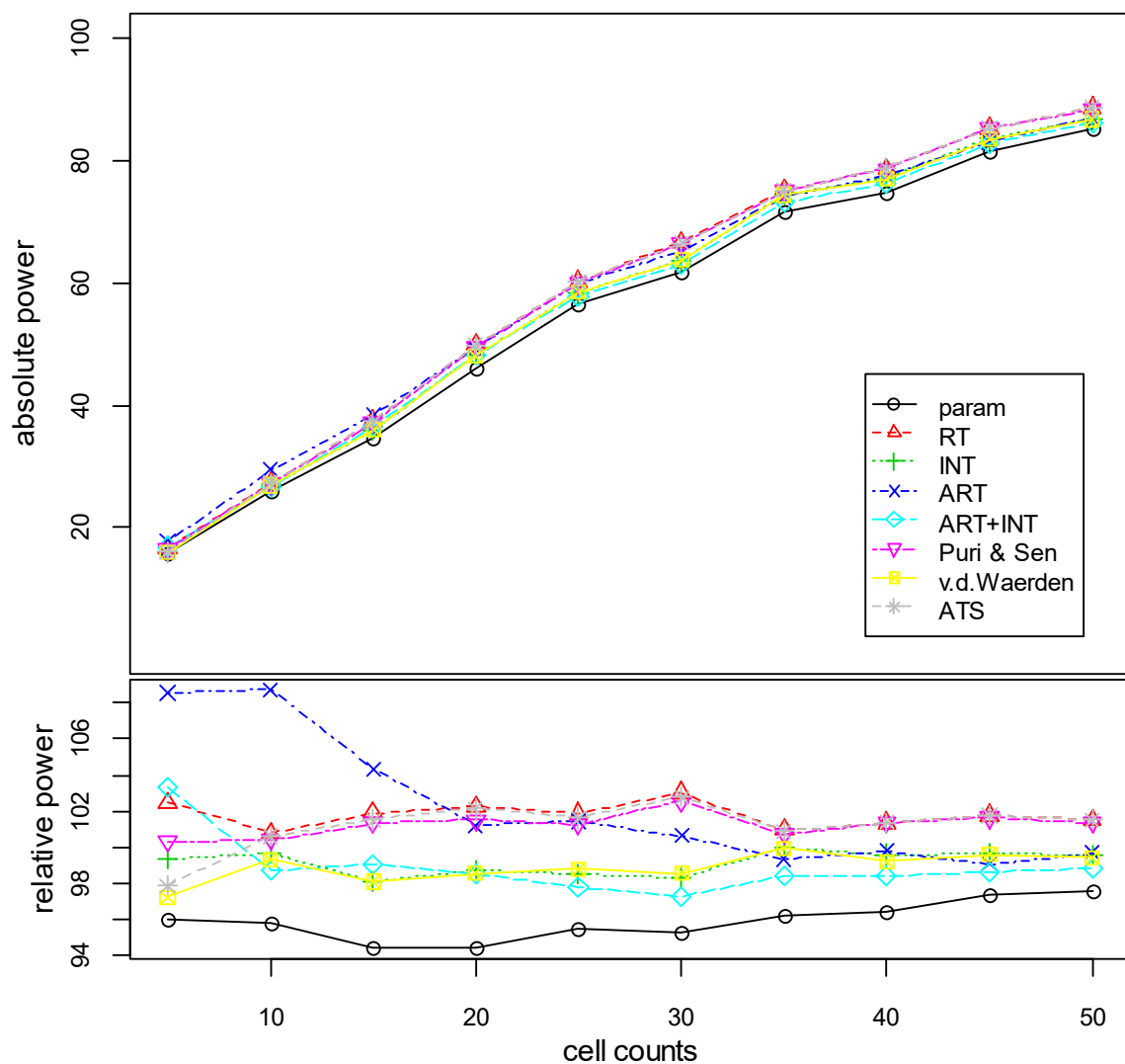
3. 1. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.10	25.20	35.30	46.40	57.20	63.00	72.05	74.90	81.80	84.35
RT	15.40	24.80	34.00	43.45	54.75	61.20	69.60	72.75	80.35	83.10
INT	16.30	25.55	35.35	46.15	56.50	62.65	70.95	74.70	81.45	84.35
ART	15.50	25.35	33.50	44.35	55.00	61.25	69.45	72.80	80.10	82.65
ART+INT	15.65	25.65	35.10	46.50	56.85	62.80	71.35	74.65	81.50	84.05
Puri & Sen	15.30	24.80	34.00	43.80	54.65	61.10	69.85	72.70	80.20	82.95
v.d.Waerden	15.75	25.50	35.00	46.05	56.35	62.65	71.00	74.65	81.60	84.35
ATS	15.10	24.75	33.85	43.45	54.75	61.20	69.60	72.75	80.35	83.10



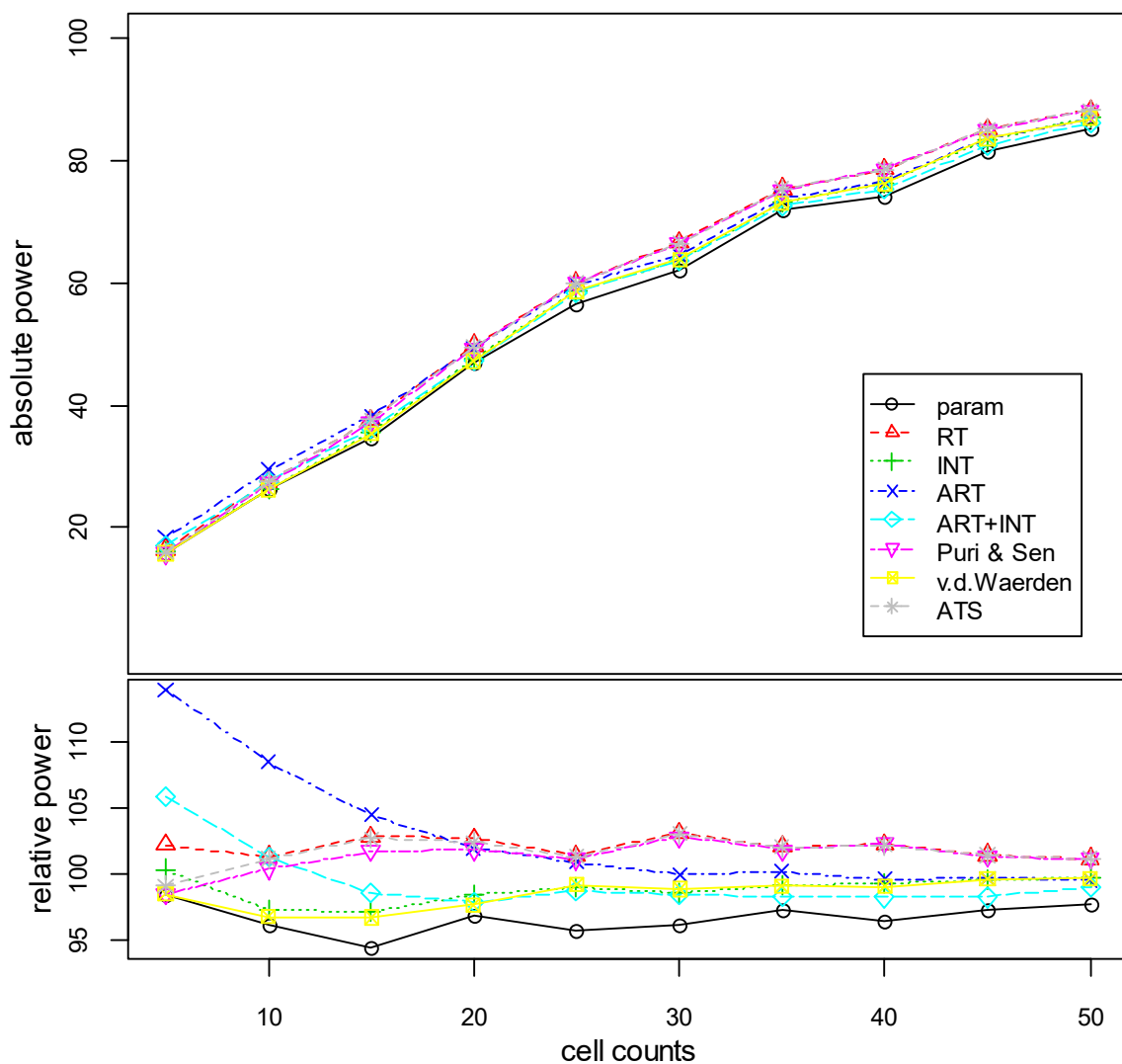
3. 1. 2 normal distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.70	25.95	34.65	46.05	56.40	61.60	71.55	74.70	81.50	85.05
RT	16.75	27.30	37.40	49.85	60.20	66.60	75.10	78.55	85.20	88.50
INT	16.25	27.00	36.00	48.15	58.20	63.55	74.35	77.20	83.45	86.75
ART	17.75	29.45	38.30	49.35	59.95	65.05	73.90	77.35	82.95	86.90
ART+INT	16.90	26.75	36.35	48.05	57.80	62.90	73.20	76.30	82.55	86.15
Puri & Sen	16.40	27.20	37.20	49.50	59.85	66.30	74.95	78.55	85.10	88.35
v.d.Waerden	15.90	26.90	36.00	48.05	58.40	63.70	74.35	76.90	83.40	86.65
ATS	16.00	27.25	37.25	49.80	60.05	66.45	75.05	78.55	85.20	88.50



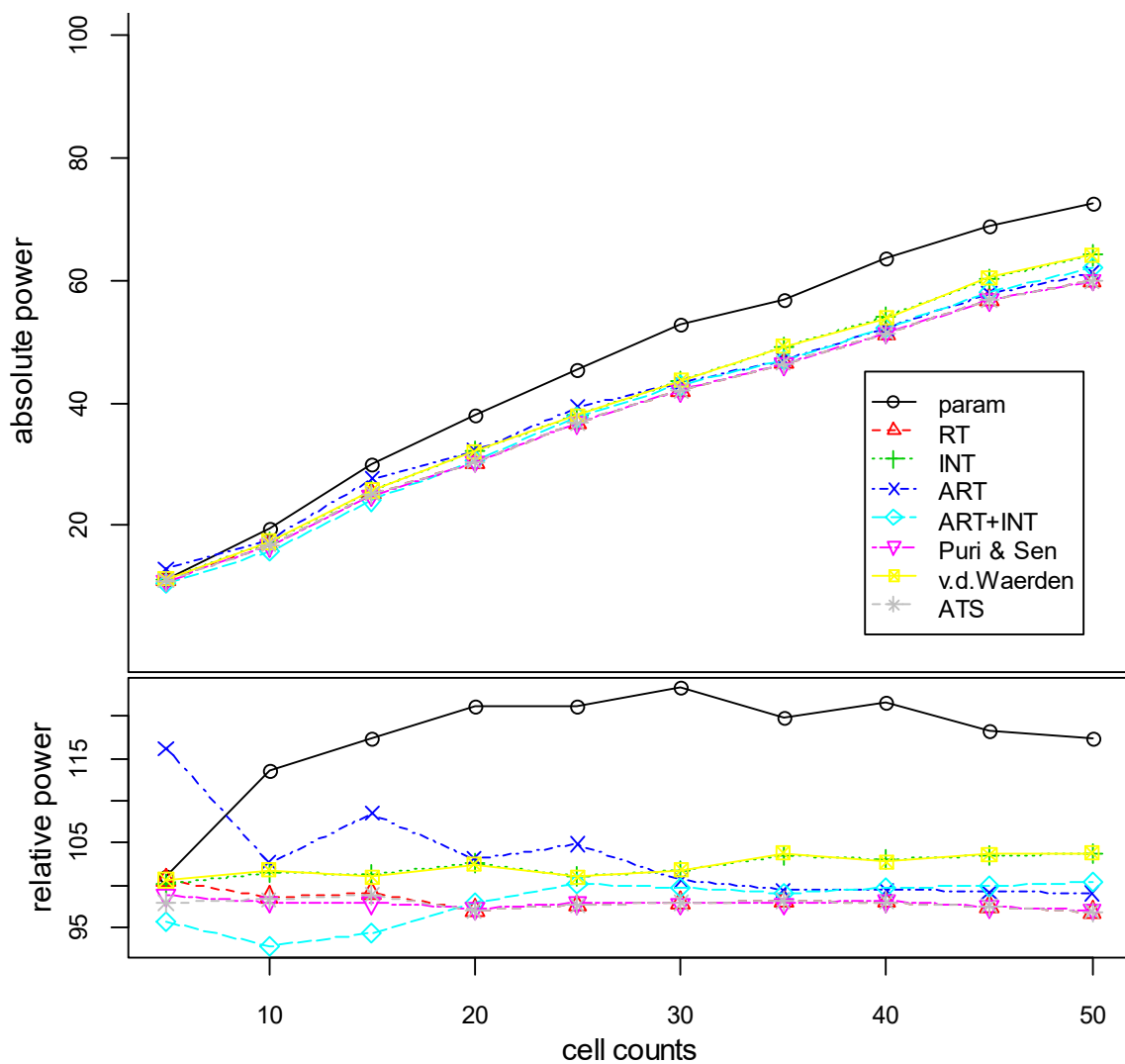
3. 1. 3 normal distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.85	26.15	34.50	46.85	56.60	61.95	71.75	74.00	81.55	85.10
RT	16.45	27.55	37.60	49.70	59.95	66.50	75.25	78.50	85.00	88.10
INT	16.15	26.45	35.50	47.65	58.50	63.55	73.05	76.25	83.40	86.85
ART	18.35	29.50	38.20	49.35	59.65	64.45	73.85	76.45	83.55	86.70
ART+INT	17.05	27.55	36.05	47.35	58.35	63.45	72.45	75.40	82.30	86.20
Puri & Sen	15.85	27.30	37.20	49.30	59.80	66.30	75.05	78.55	84.90	88.10
v.d.Waerden	15.85	26.30	35.35	47.25	58.65	63.75	73.05	76.05	83.50	86.80
ATS	15.95	27.50	37.55	49.55	59.90	66.45	75.25	78.45	85.00	88.10



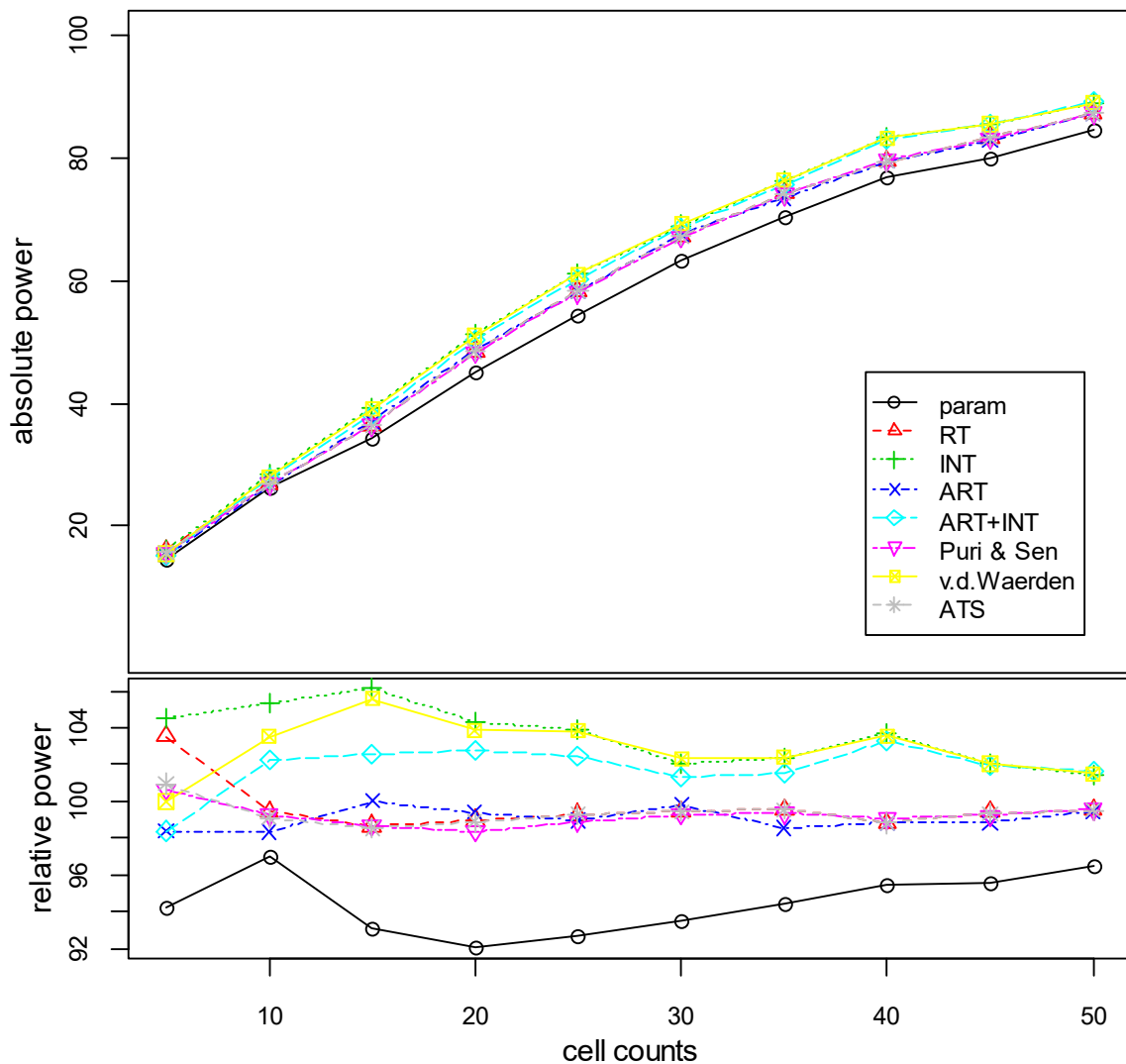
3. 1. 5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	11.30	19.40	29.85	37.90	45.45	52.90	56.75	63.70	68.95	72.45
RT	11.25	16.85	25.20	30.35	36.65	42.00	46.45	51.30	56.80	59.80
INT	11.20	17.35	25.75	32.10	37.95	43.65	49.00	53.90	60.30	64.05
ART	13.00	17.55	27.60	32.25	39.35	43.15	47.05	52.05	57.80	61.15
ART+INT	10.70	15.85	24.00	30.60	37.55	42.80	46.90	52.20	58.15	61.95
Puri & Sen	11.05	16.75	24.90	30.40	36.75	41.95	46.30	51.35	56.75	59.95
v.d.Waerden	11.25	17.40	25.70	32.05	37.90	43.65	49.15	53.80	60.40	64.10
ATS	10.95	16.80	25.15	30.35	36.65	42.00	46.45	51.30	56.80	59.80



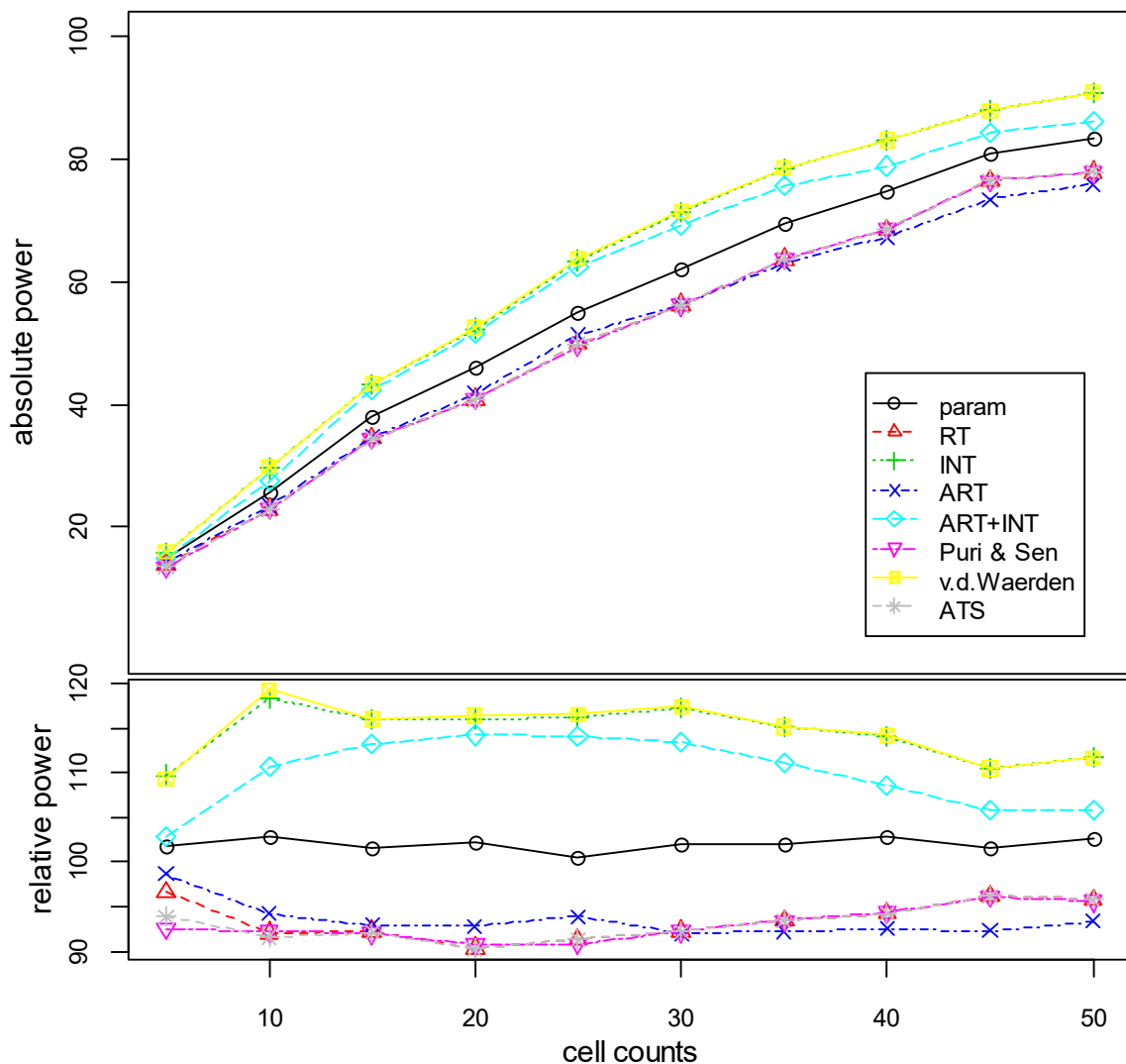
3. 1. 7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.65	26.30	34.40	45.15	54.40	63.20	70.35	76.70	80.00	84.55
RT	16.10	26.95	36.45	48.55	58.30	67.20	74.15	79.40	83.25	87.20
INT	16.25	28.55	39.20	51.15	61.00	68.95	76.25	83.35	85.45	88.85
ART	15.30	26.65	36.95	48.75	58.10	67.45	73.40	79.40	82.75	87.15
ART+INT	15.30	27.70	37.90	50.40	60.15	68.45	75.60	83.00	85.40	89.05
Puri & Sen	15.65	26.90	36.45	48.25	58.05	67.10	74.00	79.60	83.10	87.25
v.d.Waerden	15.55	28.05	39.00	50.95	60.95	69.15	76.25	83.20	85.45	88.95
ATS	15.70	26.85	36.40	48.50	58.30	67.20	74.15	79.40	83.20	87.20



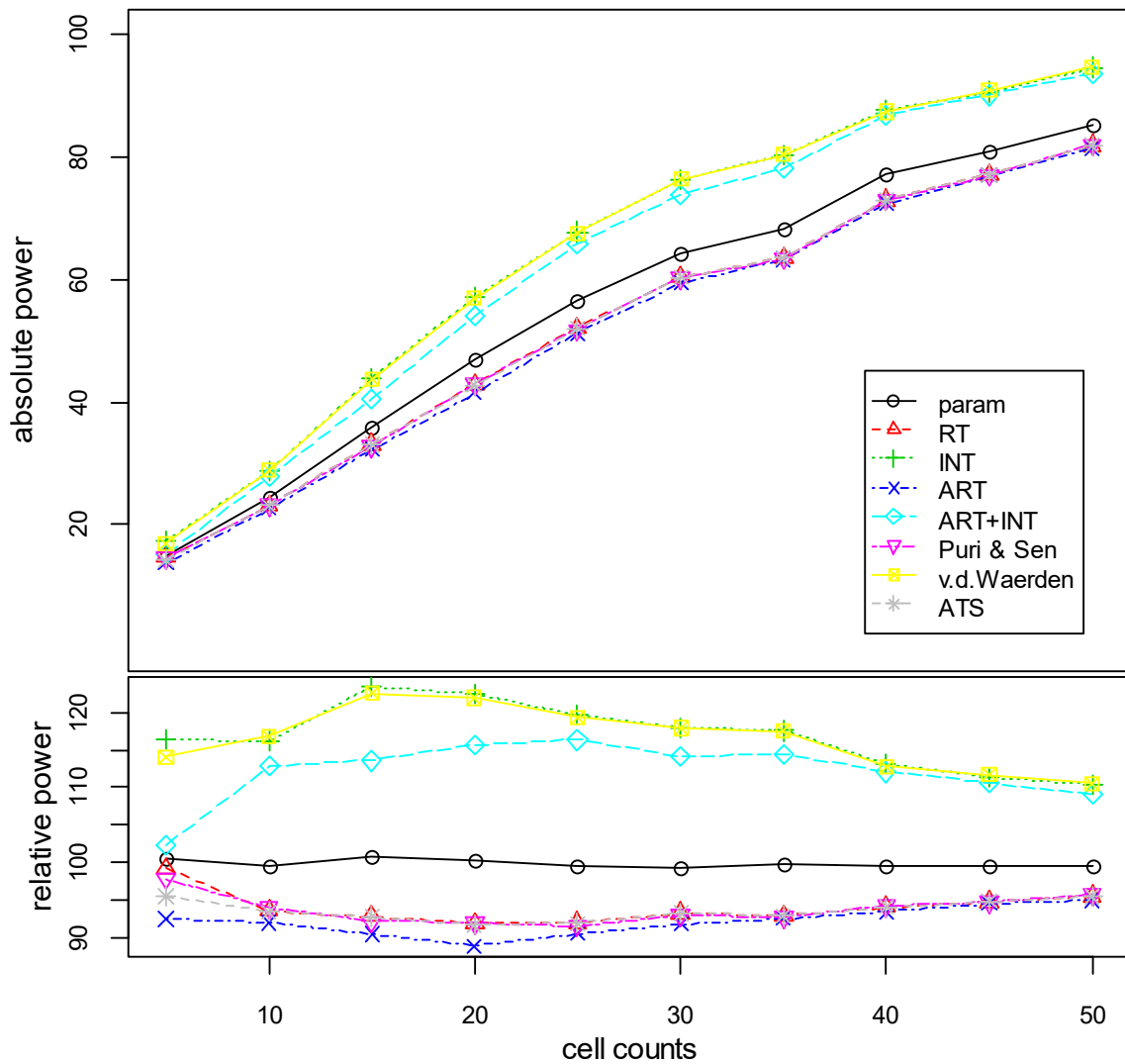
3. 1. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.80	25.70	37.95	46.05	54.90	62.15	69.50	74.65	80.75	83.35
RT	14.05	23.00	34.45	40.75	49.85	56.20	63.65	68.45	76.45	77.80
INT	15.95	29.55	43.30	52.30	63.40	71.35	78.35	82.85	87.75	90.75
ART	14.35	23.55	34.70	41.85	51.25	56.05	62.85	67.20	73.35	75.85
ART+INT	14.95	27.65	42.25	51.45	62.25	69.00	75.60	78.80	84.10	85.95
Puri & Sen	13.45	23.05	34.35	40.90	49.55	56.15	63.65	68.55	76.35	77.70
v.d.Waerden	15.90	29.80	43.30	52.45	63.60	71.45	78.40	82.95	87.75	90.70
ATS	13.65	22.90	34.40	40.70	49.85	56.15	63.65	68.45	76.45	77.80



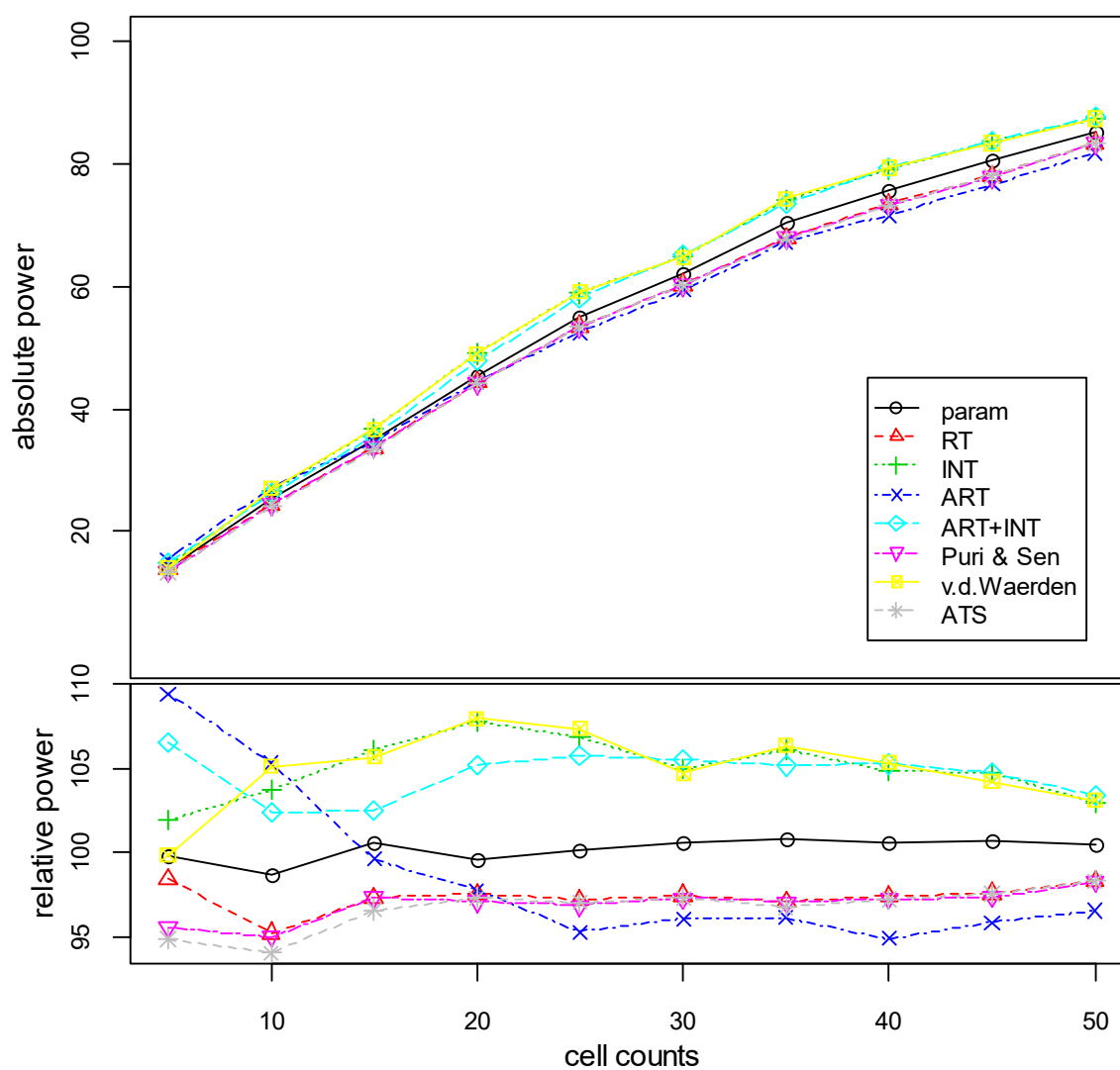
3. 1. 10 left/right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.95	24.60	35.85	46.80	56.35	64.25	68.20	77.10	80.90	85.25
RT	14.75	23.15	33.05	42.85	52.05	60.30	63.45	72.80	77.00	81.75
INT	17.30	28.75	43.90	57.05	67.70	76.25	80.30	87.50	90.50	94.50
ART	13.75	22.75	32.20	41.45	51.20	59.35	63.25	72.25	76.85	81.30
ART+INT	15.20	27.90	40.40	53.95	65.75	73.75	78.15	86.65	89.90	93.35
Puri & Sen	14.55	23.25	32.80	42.85	51.75	60.10	63.35	72.90	76.95	81.90
v.d.Waerden	16.95	28.90	43.60	56.85	67.50	76.25	80.25	87.30	90.70	94.60
ATS	14.20	23.10	33.05	42.75	52.00	60.30	63.45	72.80	77.00	81.75



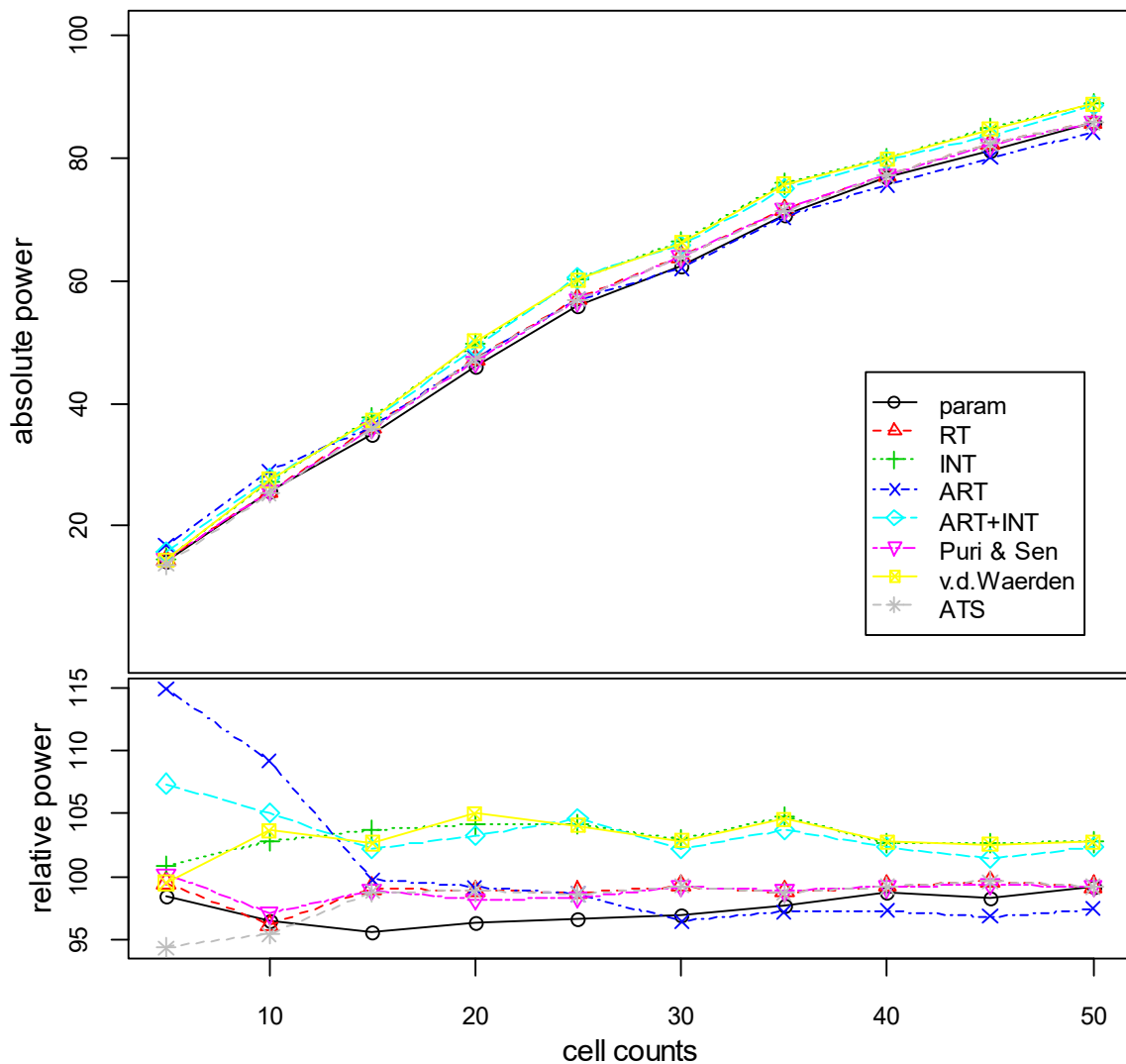
3. 1. 11 left skewed distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.05	25.40	34.90	45.25	55.05	62.15	70.40	75.70	80.45	85.10
RT	13.85	24.50	33.75	44.30	53.45	60.20	67.80	73.35	77.90	83.25
INT	14.35	26.70	36.80	48.95	58.80	64.85	74.15	78.95	83.65	87.20
ART	15.40	27.10	34.55	44.40	52.40	59.35	67.15	71.45	76.55	81.75
ART+INT	15.00	26.35	35.55	47.80	58.15	65.20	73.45	79.25	83.65	87.55
Puri & Sen	13.45	24.45	33.75	44.10	53.25	60.10	67.80	73.20	77.75	83.20
v.d.Waerden	14.05	27.05	36.65	49.05	59.05	64.70	74.30	79.30	83.25	87.30
ATS	13.35	24.20	33.50	44.20	53.35	60.10	67.60	73.20	77.90	83.25



3. 1. 12 left skewed distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.40	25.65	34.80	45.90	55.80	62.35	70.60	76.75	81.10	85.75
RT	14.55	25.55	36.05	47.10	57.00	63.85	71.45	77.10	82.20	85.70
INT	14.75	27.30	37.75	49.60	60.10	66.20	75.75	79.75	84.70	88.75
ART	16.80	29.00	36.30	47.25	56.90	62.05	70.30	75.55	79.95	84.20
ART+INT	15.70	27.90	37.20	49.20	60.35	65.75	74.95	79.50	83.70	88.40
Puri & Sen	14.65	25.80	36.00	46.80	56.75	63.85	71.50	77.05	82.05	85.75
v.d.Waerden	14.55	27.55	37.35	50.05	60.05	66.15	75.60	79.80	84.65	88.75
ATS	13.80	25.35	35.95	47.10	56.90	63.85	71.35	77.05	82.20	85.70

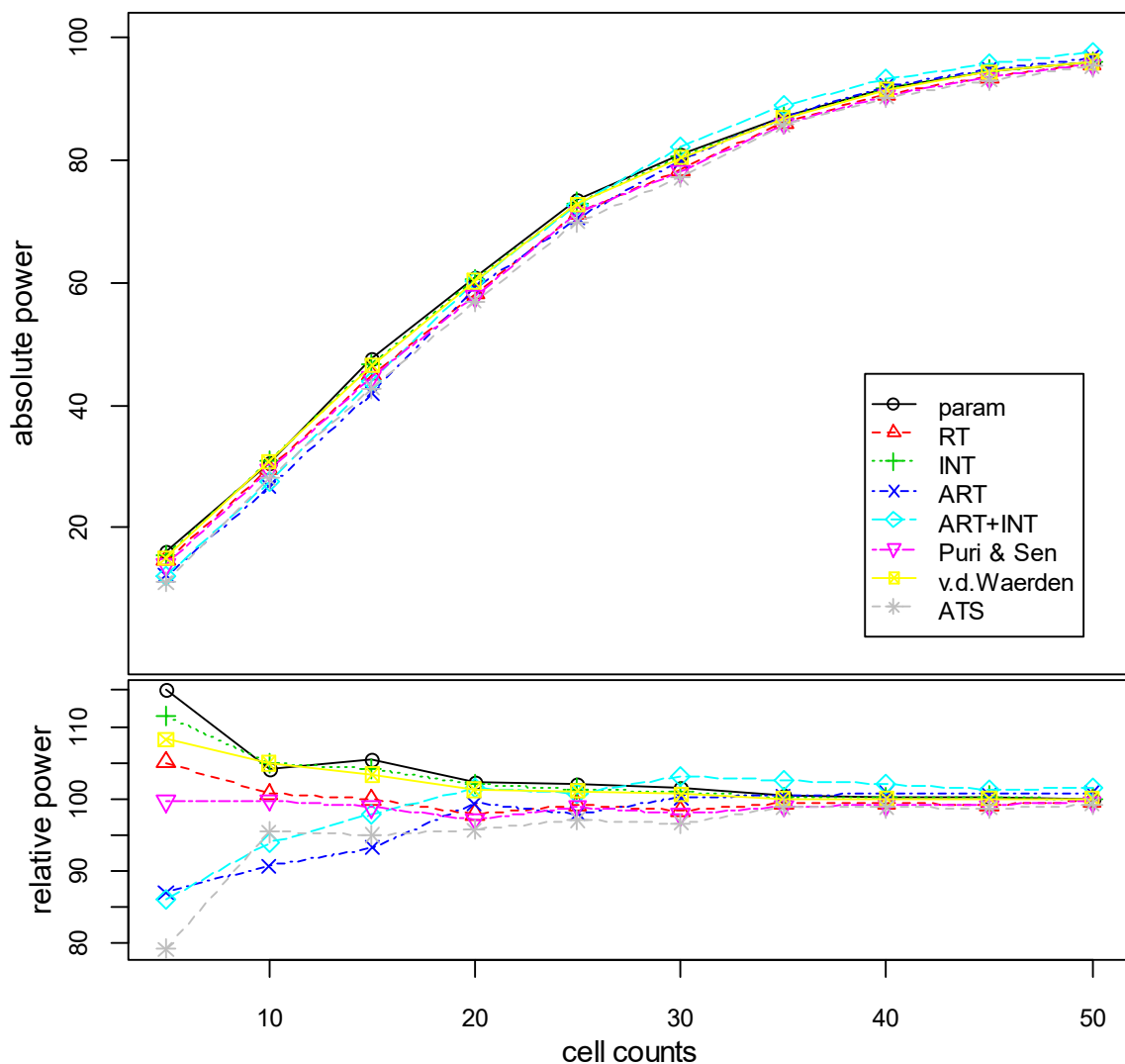


3. 2. Main effect A

(effects $a_i = 0.3*s$ / unequal n_i / # levels = $4*5$)

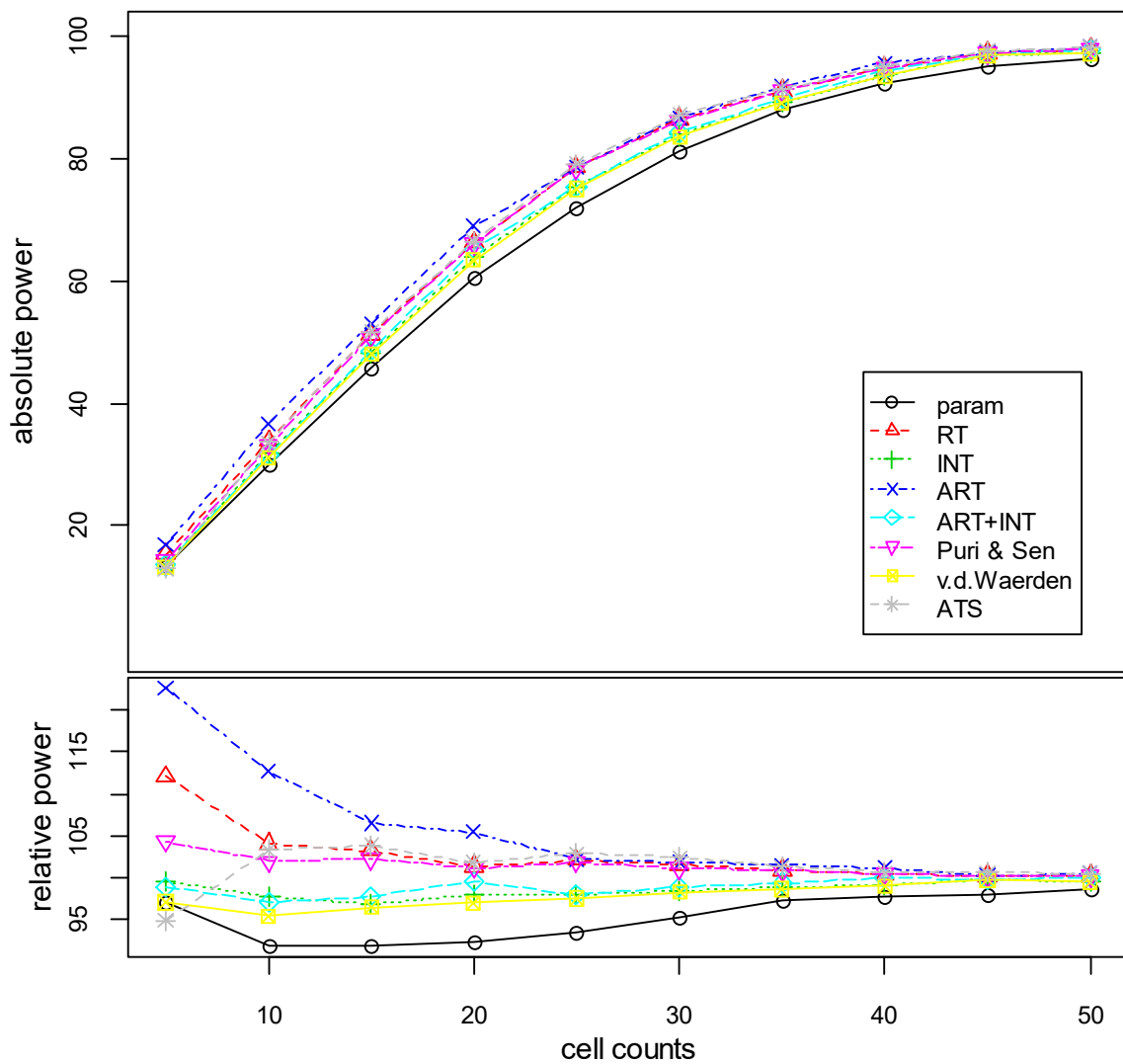
3. 2. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.10	30.55	47.40	60.70	73.45	80.90	87.05	91.60	94.50	95.90
RT	14.70	29.55	44.90	58.15	71.35	78.40	86.10	90.75	93.45	95.55
INT	15.60	30.80	46.75	60.60	72.95	80.45	86.80	91.50	94.50	95.90
ART	12.20	26.65	41.90	59.00	70.45	79.80	87.05	92.00	94.80	96.55
ART+INT	12.05	27.60	43.95	60.30	72.55	82.15	88.85	93.15	95.45	97.35
Puri & Sen	13.95	29.30	44.45	57.70	71.20	78.05	85.85	90.50	93.30	95.45
v.d.Waerden	15.15	30.80	46.45	60.15	72.70	80.25	86.75	91.35	94.25	95.90
ATS	11.10	28.00	42.70	56.85	69.85	77.05	85.65	90.20	92.95	95.15



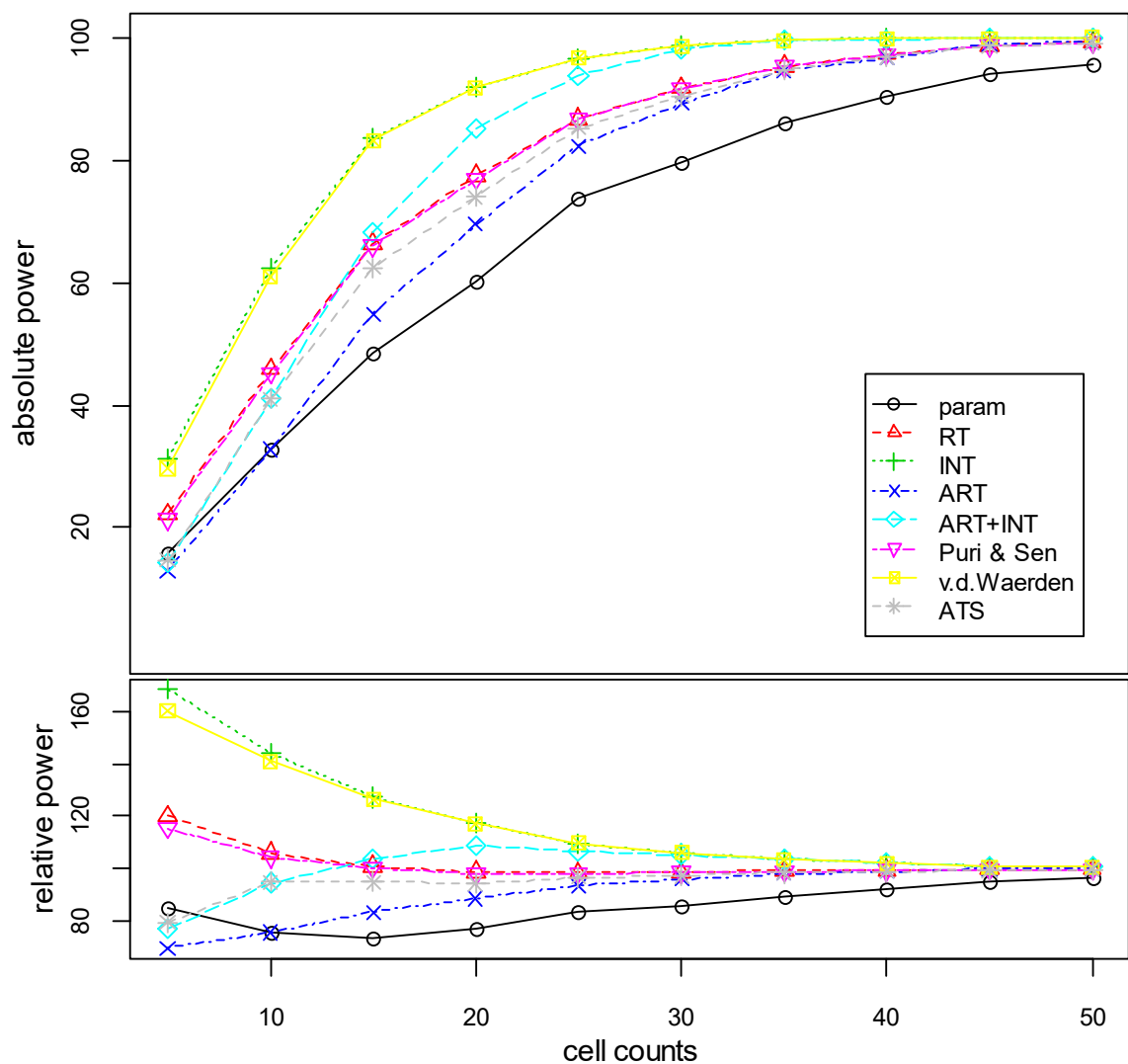
3. 2. 2 normal distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	13.30	29.95	45.65	60.35	71.90	81.10	87.85	92.10	95.05	96.35
RT	15.35	33.90	51.30	66.15	78.45	86.35	91.05	94.70	97.20	97.85
INT	13.65	31.85	48.10	63.90	75.35	83.75	89.20	93.55	96.80	97.20
ART	16.80	36.70	52.95	68.85	78.50	86.55	91.60	95.45	97.15	98.15
ART+INT	13.55	31.60	48.60	65.00	75.30	84.05	89.70	94.25	96.75	97.60
Puri & Sen	14.30	33.20	50.80	66.05	78.25	86.00	90.95	94.70	97.10	97.85
v.d.Waerden	13.30	31.10	47.95	63.35	74.95	83.55	89.00	93.35	96.75	97.10
ATS	13.00	33.65	51.60	66.45	79.05	87.05	91.40	94.85	97.55	98.05



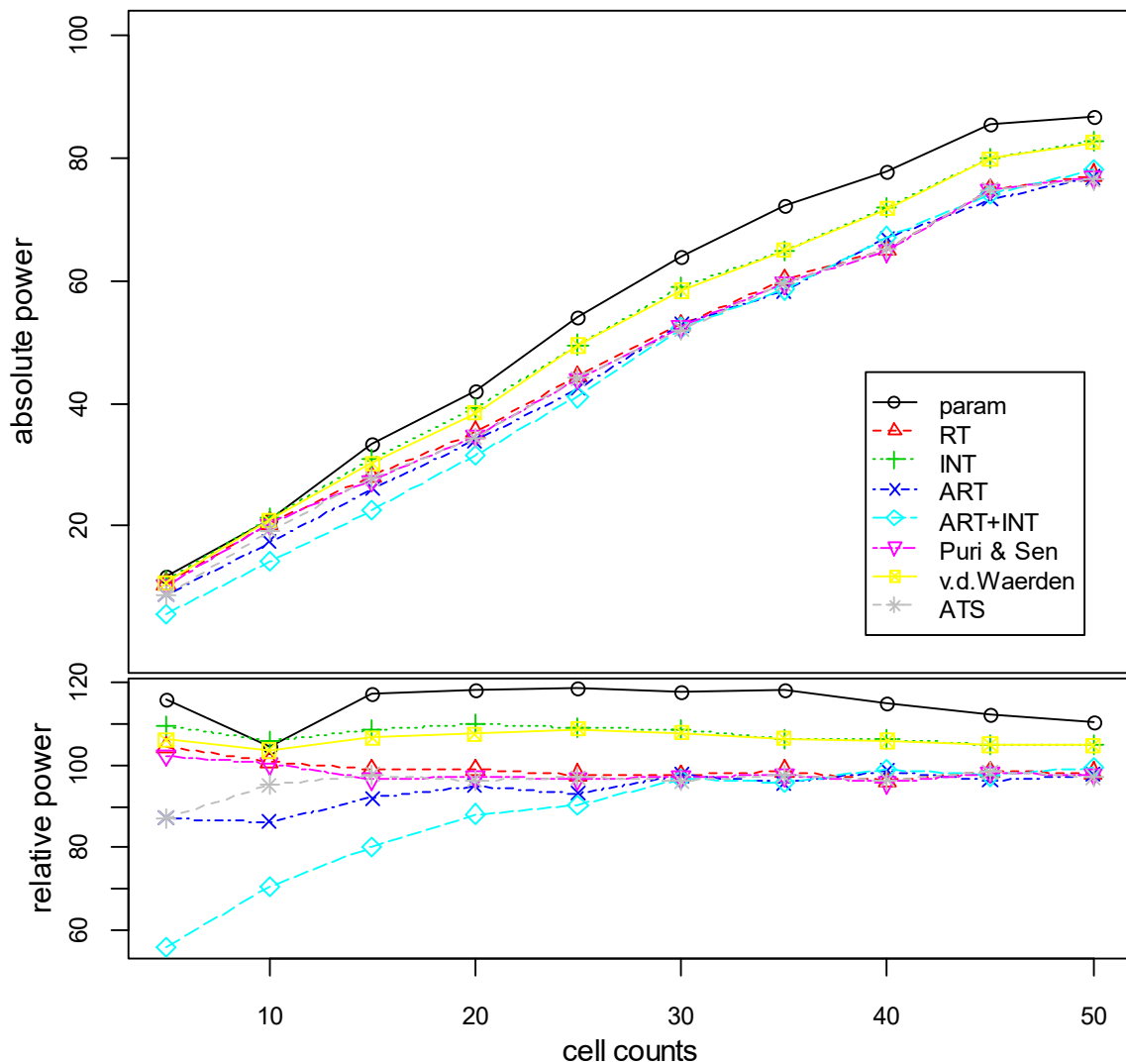
3. 2. 4 right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.80	32.65	48.40	60.20	73.75	79.65	86.10	90.25	94.20	95.70
RT	22.25	45.85	66.35	77.45	86.70	91.70	95.35	97.25	98.75	99.15
INT	31.20	62.25	83.60	91.90	96.60	98.70	99.50	99.90	99.95	100.00
ART	12.95	32.75	54.90	69.50	82.30	89.20	94.60	96.60	99.00	99.25
ART+INT	14.35	41.00	68.20	85.20	93.75	98.10	99.55	99.70	99.95	100.00
Puri & Sen	21.40	45.20	66.00	76.85	86.65	91.65	95.30	97.25	98.70	99.10
v.d.Waerden	29.70	60.95	83.20	91.85	96.60	98.55	99.50	99.85	99.85	100.00
ATS	14.75	41.05	62.45	73.95	85.25	90.40	94.70	96.85	98.60	99.10



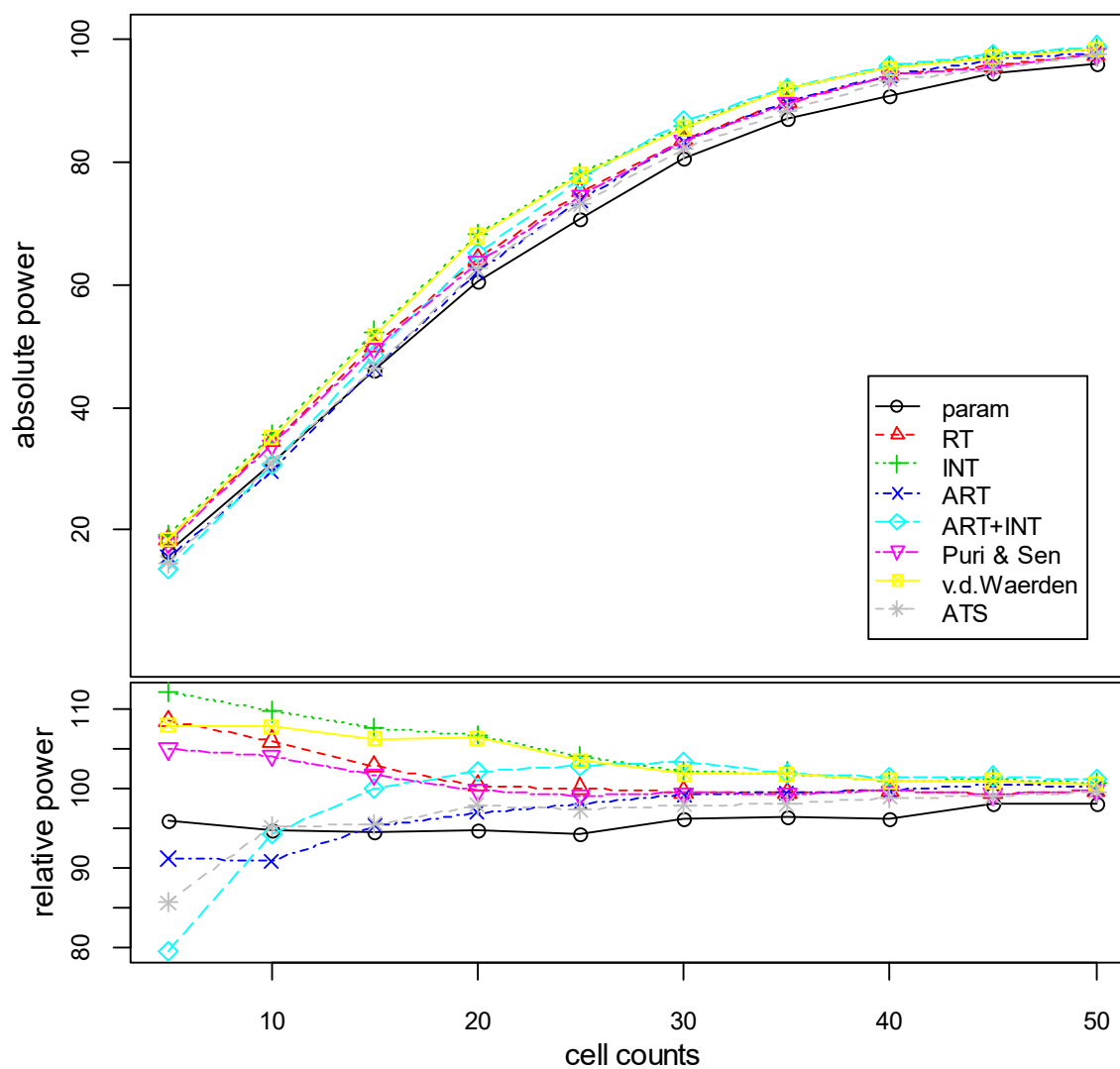
3. 2. 6 exponential distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	11.80	21.15	33.30	42.15	53.90	63.85	72.30	77.85	85.45	86.70
RT	10.60	20.45	28.05	35.30	44.35	52.70	60.10	65.05	74.80	77.10
INT	11.15	21.45	30.85	39.25	49.55	58.85	64.85	72.00	79.95	82.65
ART	8.85	17.50	26.05	33.90	42.35	52.80	58.30	66.85	73.20	76.80
ART+INT	5.65	14.25	22.70	31.45	40.95	52.30	58.50	67.10	74.05	78.10
Puri & Sen	10.40	20.35	27.40	34.65	43.90	52.50	59.55	64.80	74.70	76.80
v.d.Waerden	10.80	21.00	30.25	38.40	49.40	58.30	64.95	71.70	79.80	82.40
ATS	8.85	19.30	27.70	34.35	44.10	52.00	59.45	65.20	74.80	76.35



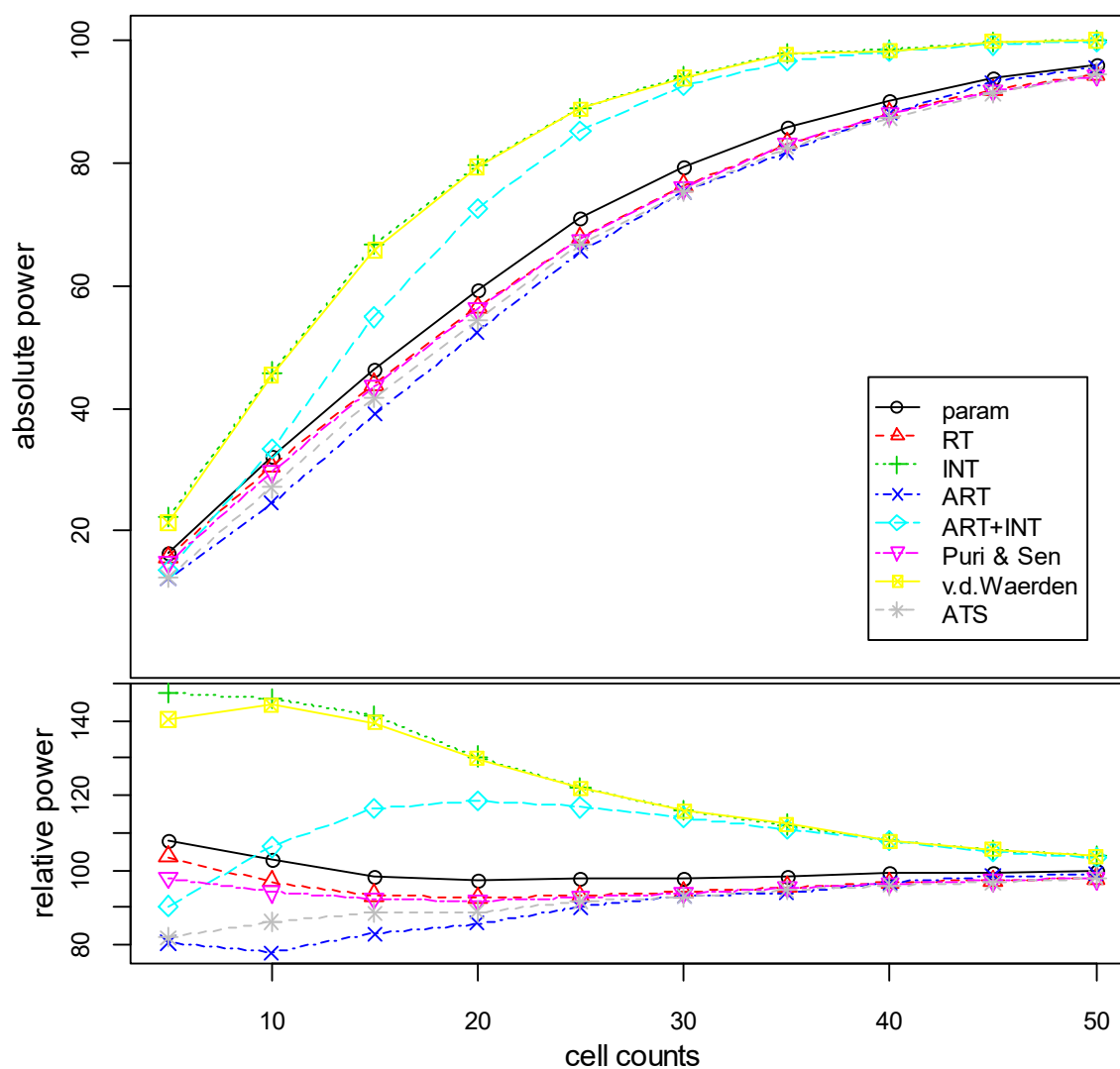
3. 2. 7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.40	30.85	45.95	60.55	70.80	80.60	87.00	90.65	94.25	95.95
RT	18.55	34.45	49.95	64.05	75.10	83.45	89.65	93.95	95.45	97.45
INT	19.15	35.65	52.30	68.05	78.05	85.70	91.95	95.20	97.10	98.35
ART	15.60	29.55	46.35	61.90	73.70	83.20	89.65	94.00	96.45	97.85
ART+INT	13.60	30.65	48.60	65.15	77.20	86.65	91.90	95.60	97.50	98.80
Puri & Sen	17.95	33.85	49.45	63.70	74.45	83.40	89.55	93.95	95.35	97.45
v.d.Waerden	18.45	35.05	51.65	67.90	77.75	85.45	91.80	95.15	96.95	98.25
ATS	14.65	30.95	46.45	62.50	73.10	82.10	88.35	93.20	95.05	97.30



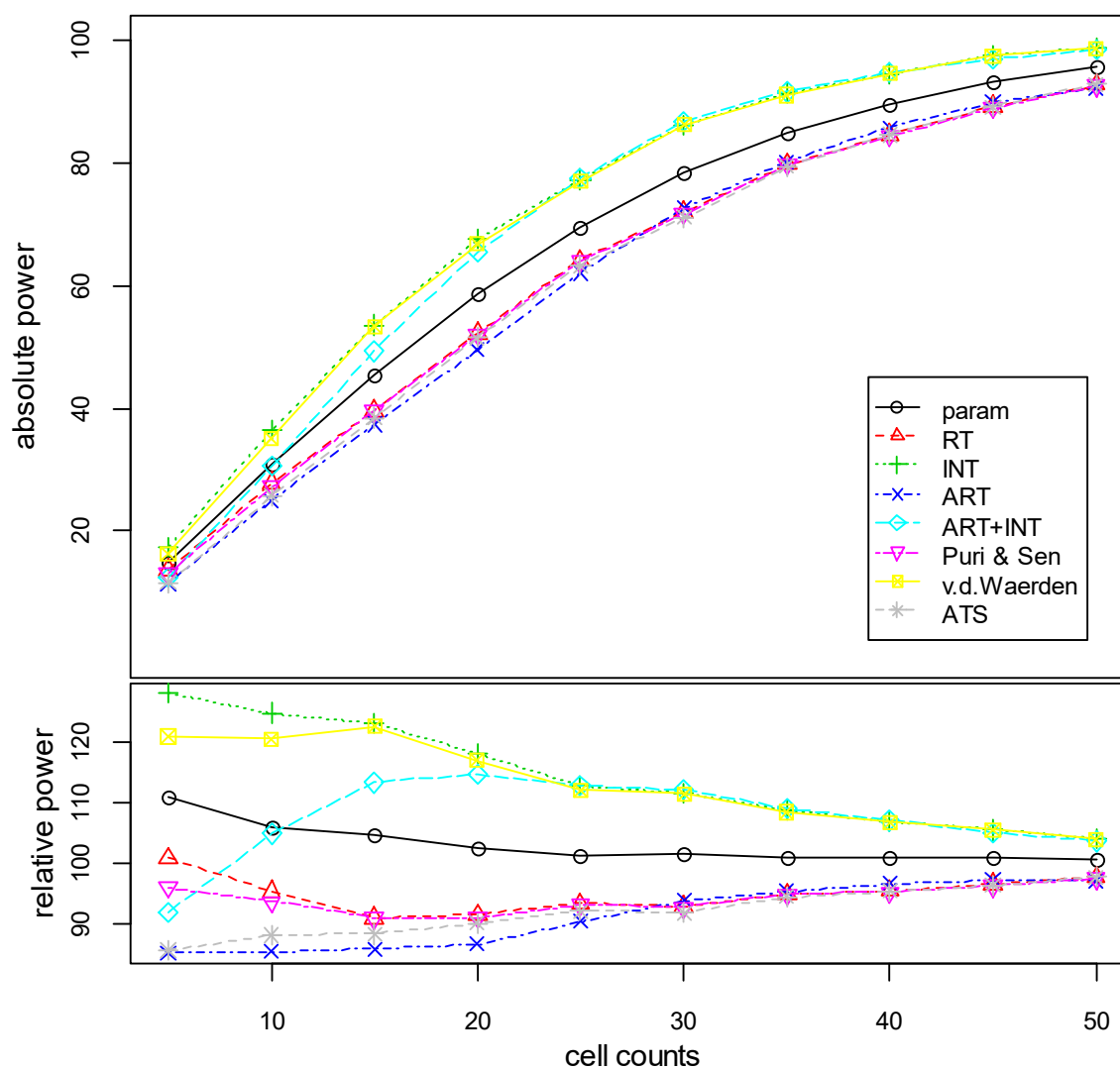
3. 2. 8 uniform distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.45	32.30	46.20	59.25	71.00	79.25	85.70	90.20	93.85	96.05
RT	15.75	30.50	43.90	56.45	67.70	76.20	83.10	88.00	91.75	94.30
INT	22.40	45.85	66.60	79.65	88.80	93.95	97.65	98.35	99.60	99.90
ART	12.25	24.50	39.05	52.40	65.50	75.25	81.75	87.95	93.00	95.45
ART+INT	13.75	33.40	54.80	72.45	85.00	92.45	96.45	98.10	99.15	99.70
Puri & Sen	14.90	29.65	43.50	56.10	67.45	75.90	83.00	87.85	91.70	94.15
v.d.Waerden	21.35	45.40	65.70	79.30	88.75	93.75	97.70	98.15	99.65	99.90
ATS	12.45	27.10	41.65	54.25	66.75	75.15	82.45	87.30	91.30	94.50



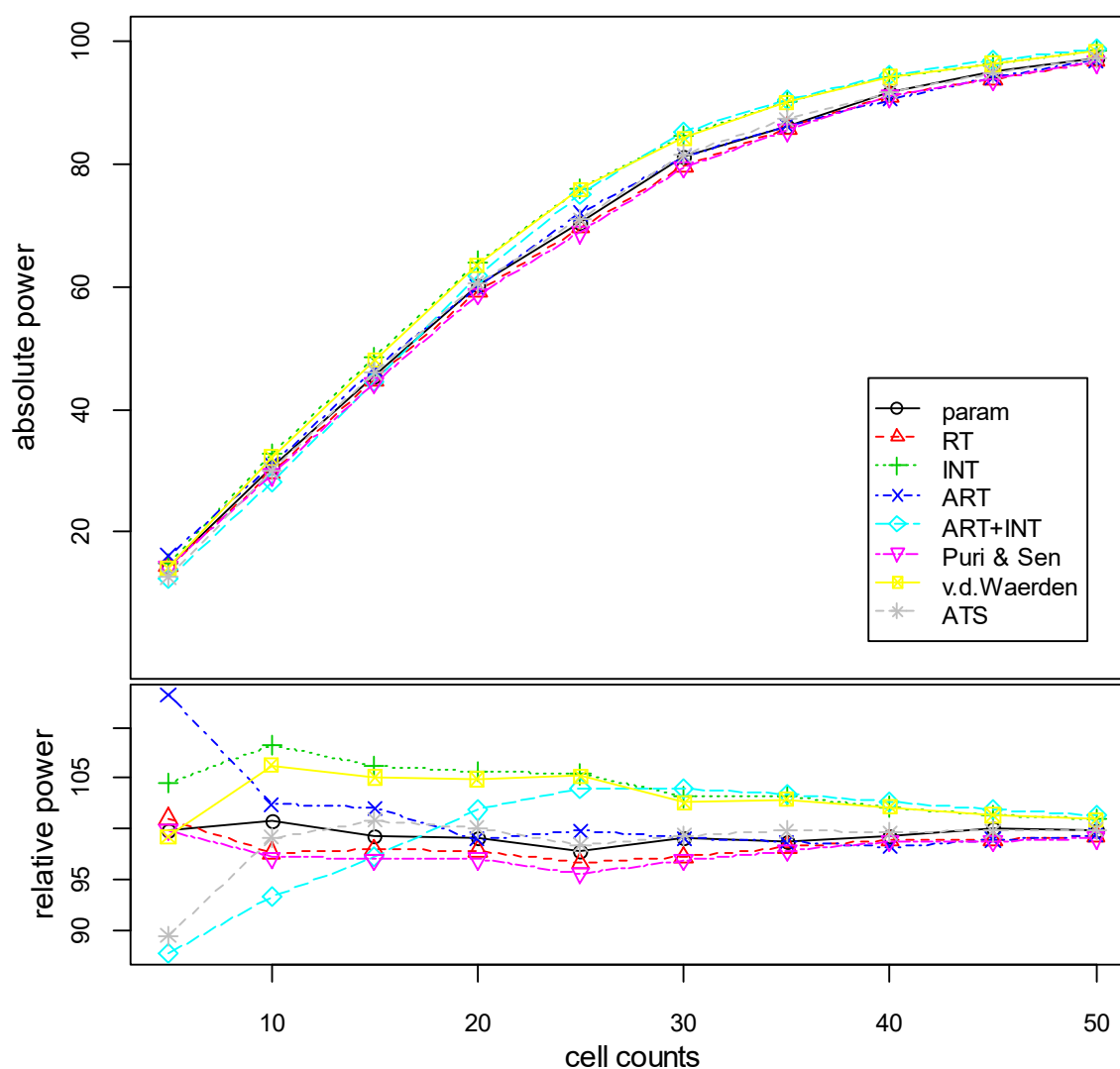
3. 2. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.00	30.90	45.50	58.55	69.35	78.45	84.75	89.35	93.25	95.50
RT	13.65	27.85	39.60	52.25	64.10	71.85	79.70	84.55	89.15	92.65
INT	17.30	36.40	53.55	67.45	77.25	86.10	91.25	94.50	97.35	98.65
ART	11.55	24.95	37.40	49.55	62.05	72.60	80.10	85.60	89.80	92.15
ART+INT	12.45	30.60	49.25	65.45	77.35	86.65	91.45	94.75	96.85	98.25
Puri & Sen	13.00	27.35	39.55	52.00	63.90	71.70	79.65	84.30	88.90	92.50
v.d.Waerden	16.35	35.15	53.25	66.70	76.85	86.10	91.00	94.50	97.40	98.60
ATS	11.60	25.75	38.45	51.50	63.20	71.00	79.35	84.50	89.00	92.70



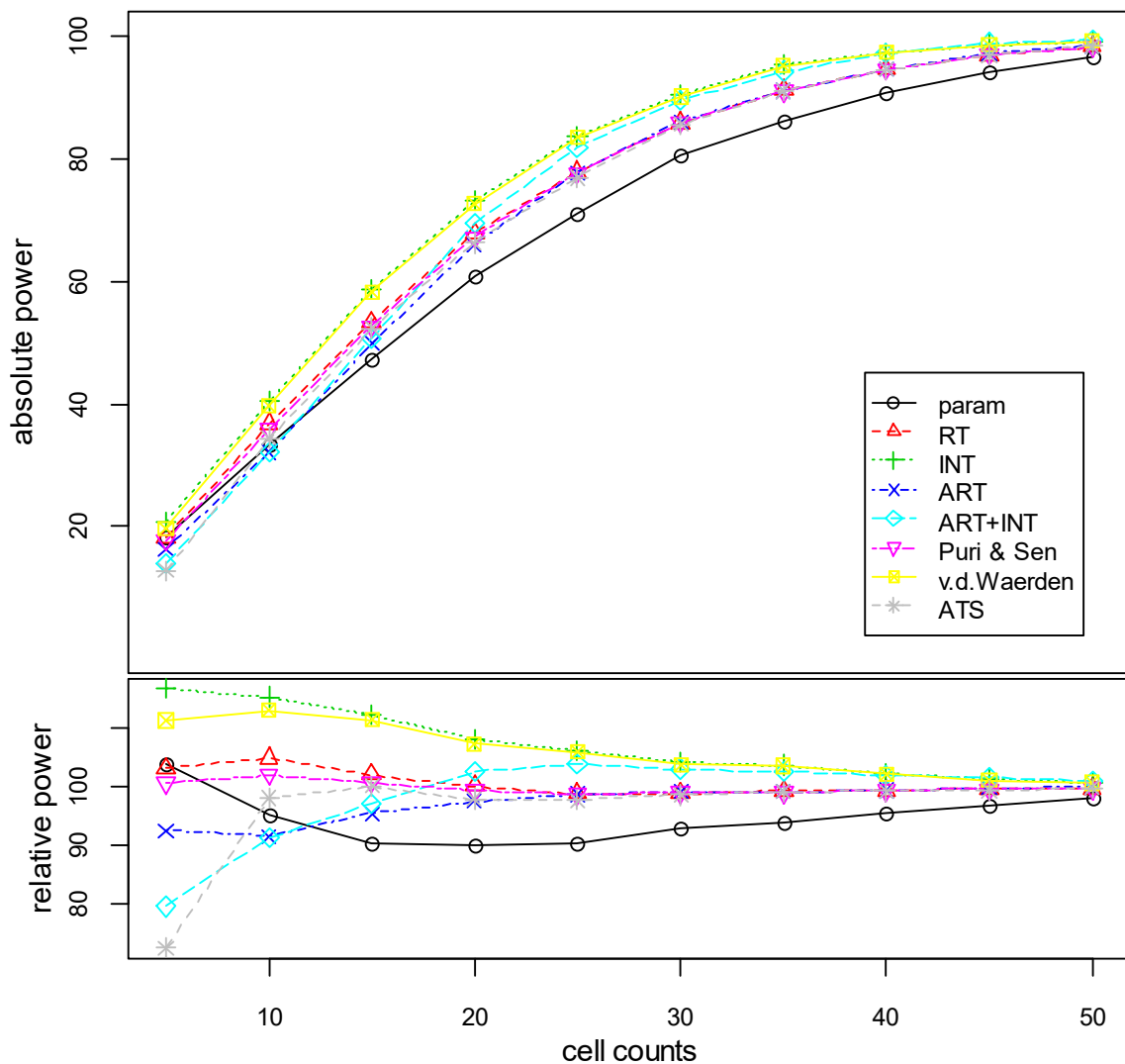
3. 2. 11 left skewed distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.25	30.50	45.30	60.05	70.35	81.10	86.20	91.45	94.90	97.15
RT	14.40	29.55	44.70	59.20	69.55	79.60	85.75	91.00	93.80	96.65
INT	14.90	32.75	48.50	64.00	75.85	84.45	90.15	94.05	96.20	98.30
ART	16.15	31.00	46.55	59.90	71.85	81.10	86.20	90.40	93.90	96.70
ART+INT	12.50	28.25	44.40	61.65	74.90	85.10	90.35	94.45	96.75	98.70
Puri & Sen	14.25	29.40	44.25	58.75	68.80	79.35	85.45	90.95	93.75	96.45
v.d.Waerden	14.15	32.15	47.95	63.50	75.75	84.05	89.90	94.05	96.20	98.25
ATS	12.75	30.00	46.00	60.60	70.85	81.35	87.15	91.70	94.70	97.25



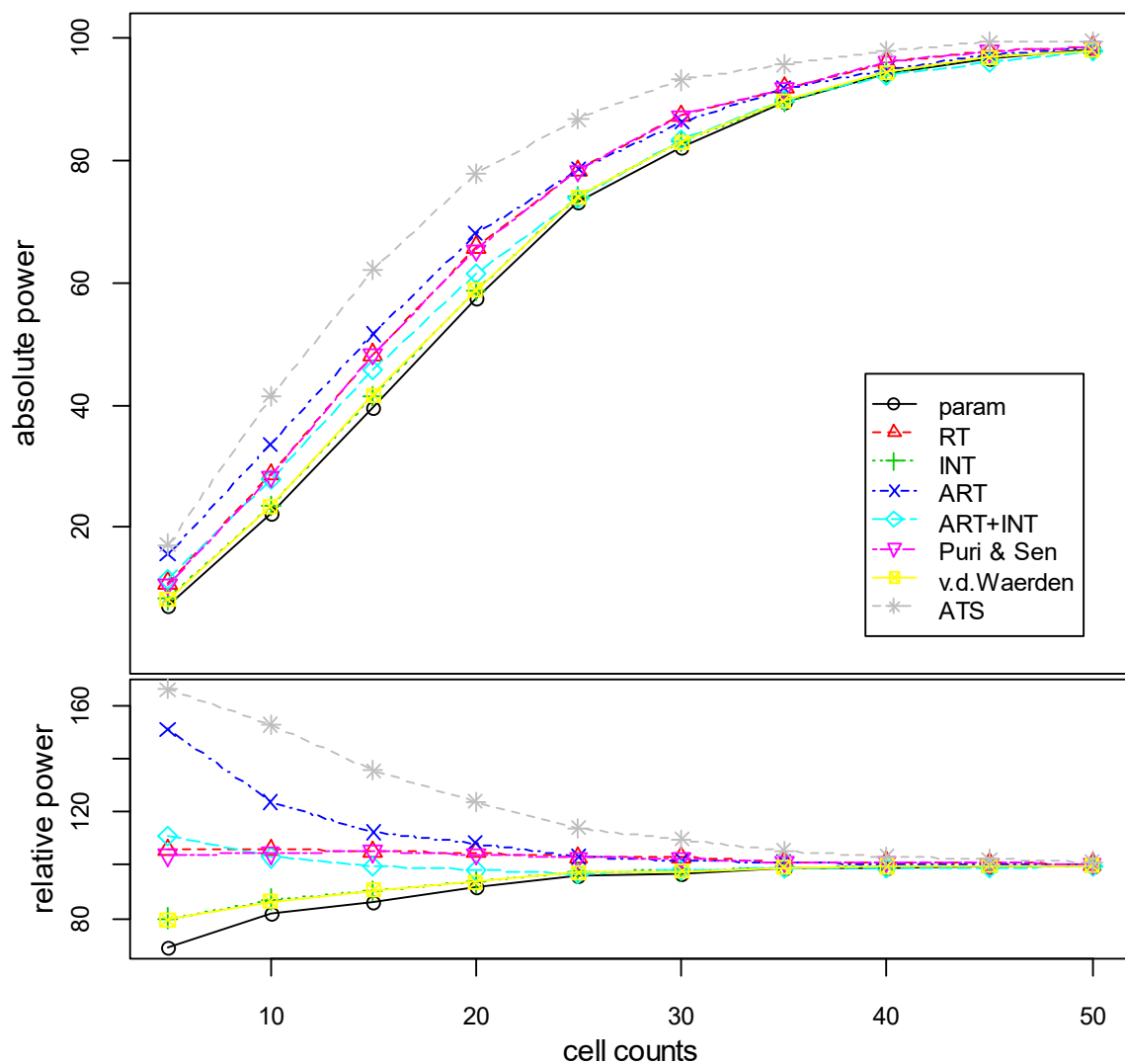
3. 2. 12 left skewed distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	18.35	33.40	47.15	60.85	71.10	80.65	86.20	90.80	94.05	96.60
RT	18.25	36.85	53.35	67.75	77.75	85.75	91.10	94.50	96.90	98.15
INT	20.65	40.55	58.75	73.20	83.60	90.40	95.25	97.25	98.50	99.10
ART	16.35	32.15	49.85	65.95	77.65	85.95	91.00	94.50	97.15	98.30
ART+INT	14.05	32.10	50.75	69.45	81.65	89.40	94.20	97.05	98.80	99.40
Puri & Sen	17.80	35.85	52.65	67.15	77.60	85.85	90.95	94.50	96.90	98.15
v.d.Waerden	19.70	39.75	58.25	72.65	83.35	90.05	95.10	97.25	98.45	99.10
ATS	12.80	34.45	52.30	66.20	76.80	85.50	91.00	94.40	96.70	98.25



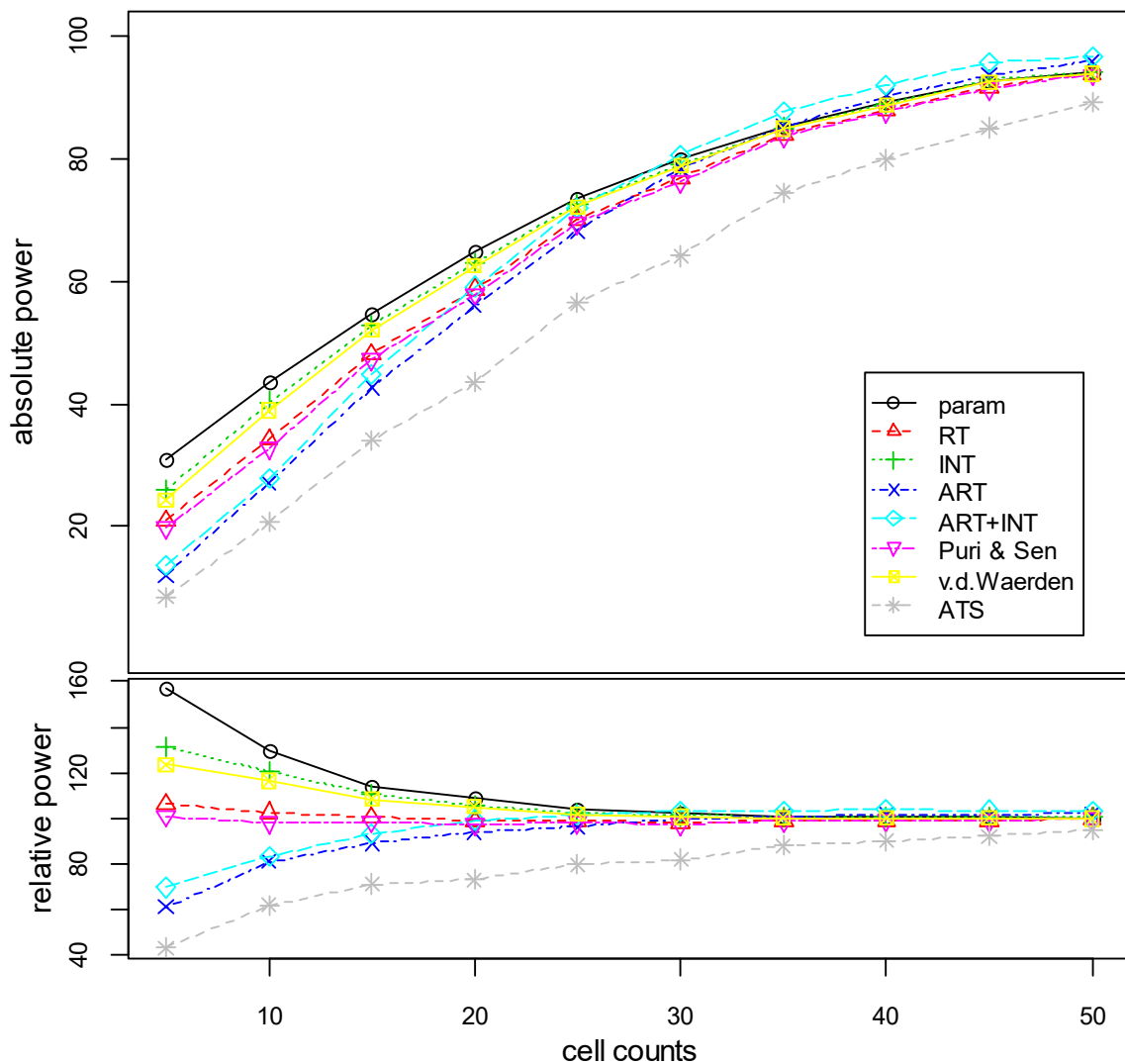
3. 2. 13 normal distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	7.15	22.30	39.50	57.45	73.15	82.05	89.30	93.90	96.60	97.95
RT	10.95	28.70	48.25	65.75	78.25	87.20	91.70	95.90	97.70	98.40
INT	8.30	23.65	41.45	58.75	74.10	82.95	89.55	94.20	96.70	97.90
ART	15.65	33.55	51.55	68.00	78.50	86.20	91.65	94.75	97.05	98.25
ART+INT	11.50	27.90	45.60	61.40	73.75	83.15	89.75	93.75	95.85	97.80
Puri & Sen	10.75	28.35	48.25	65.30	78.25	87.15	91.60	95.85	97.70	98.45
v.d.Waerden	8.25	23.40	41.60	58.75	73.90	82.85	89.70	94.25	96.70	97.90
ATS	17.20	41.45	62.15	77.75	86.60	93.00	95.50	97.80	99.15	99.35



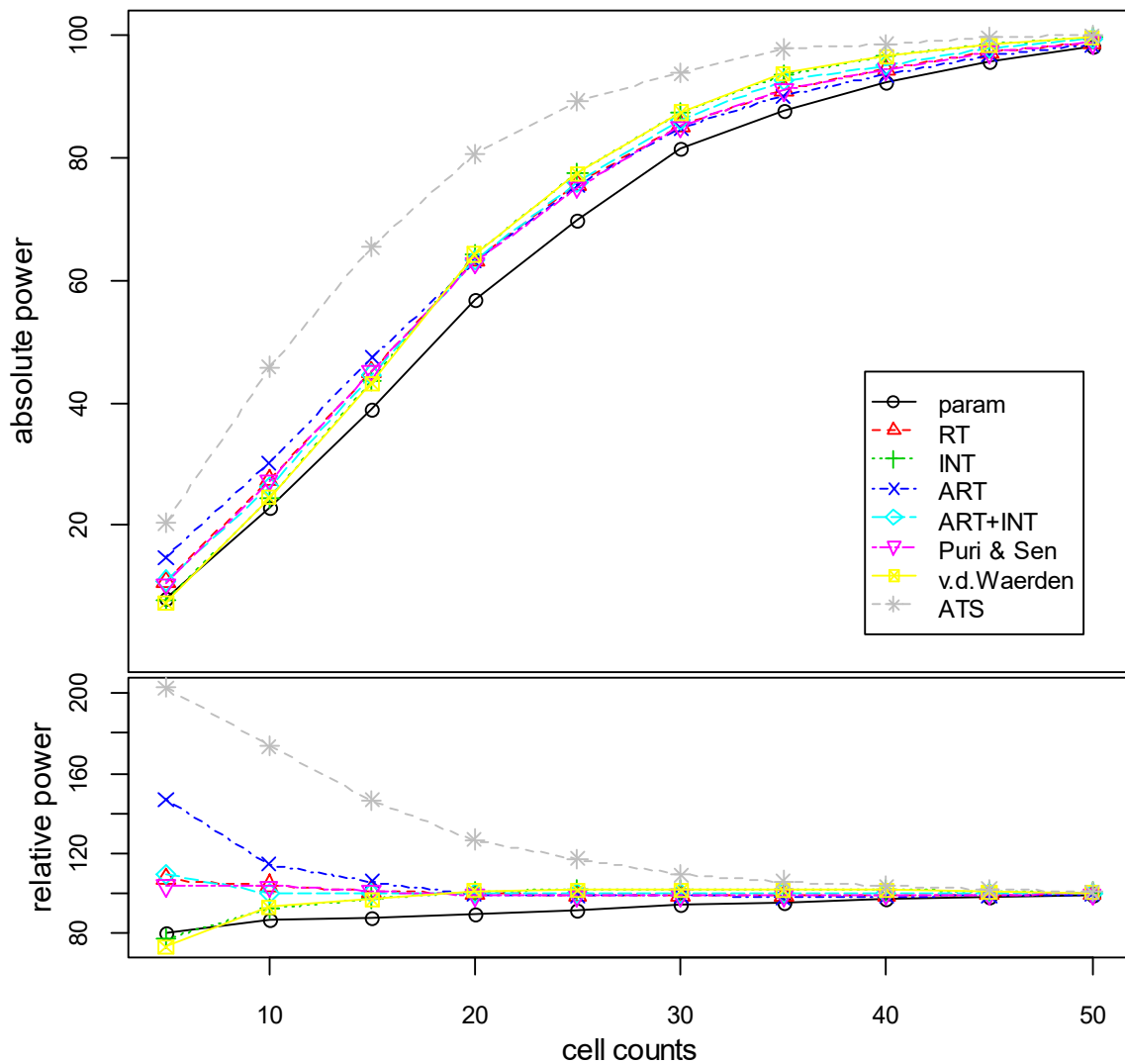
3. 2. 14 normal distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	30.90	43.50	54.55	64.65	73.35	79.75	85.00	89.10	92.65	94.00
RT	20.95	34.25	48.10	58.65	70.05	76.85	83.85	87.85	91.45	93.65
INT	25.95	40.30	52.85	62.90	72.55	79.05	84.95	88.85	92.75	94.15
ART	12.00	27.10	42.65	55.95	68.10	78.25	85.20	90.10	93.55	95.85
ART+INT	13.70	27.95	44.70	59.10	71.85	80.40	87.55	91.85	95.50	96.55
Puri & Sen	19.85	32.80	47.20	57.80	69.40	76.10	83.50	87.60	91.30	93.65
v.d.Waerden	24.35	38.95	51.90	62.45	72.05	78.70	84.80	88.60	92.45	93.75
ATS	8.50	20.65	34.10	43.45	56.40	64.05	74.40	79.75	84.95	89.05



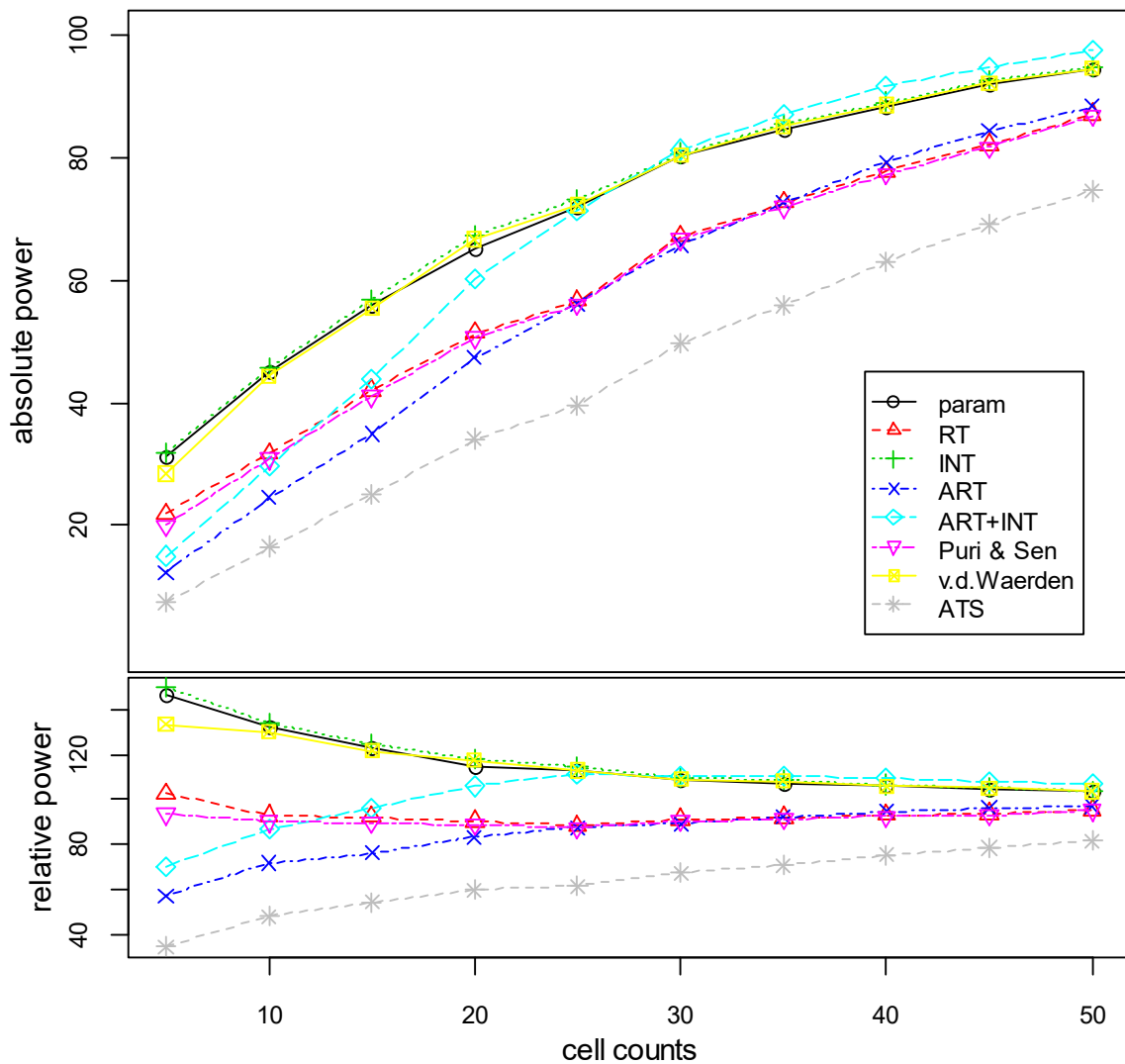
3. 2. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	8.05	22.85	39.00	56.70	69.75	81.45	87.50	92.25	95.65	98.05
RT	10.80	27.45	45.00	63.20	75.55	85.20	91.00	94.30	97.10	98.70
INT	7.80	24.45	43.55	64.15	77.30	87.30	93.50	96.50	98.30	99.45
ART	14.85	30.25	47.30	63.05	75.40	84.75	89.90	93.45	96.55	98.30
ART+INT	11.05	26.35	44.60	63.25	75.95	86.15	92.40	95.10	97.80	99.25
Puri & Sen	10.45	27.35	45.20	62.80	75.10	85.00	90.95	94.30	97.05	98.60
v.d.Waerden	7.40	24.60	43.15	64.20	77.35	87.30	93.60	96.45	98.30	99.45
ATS	20.45	45.85	65.35	80.50	89.15	93.70	97.60	98.35	99.50	99.80



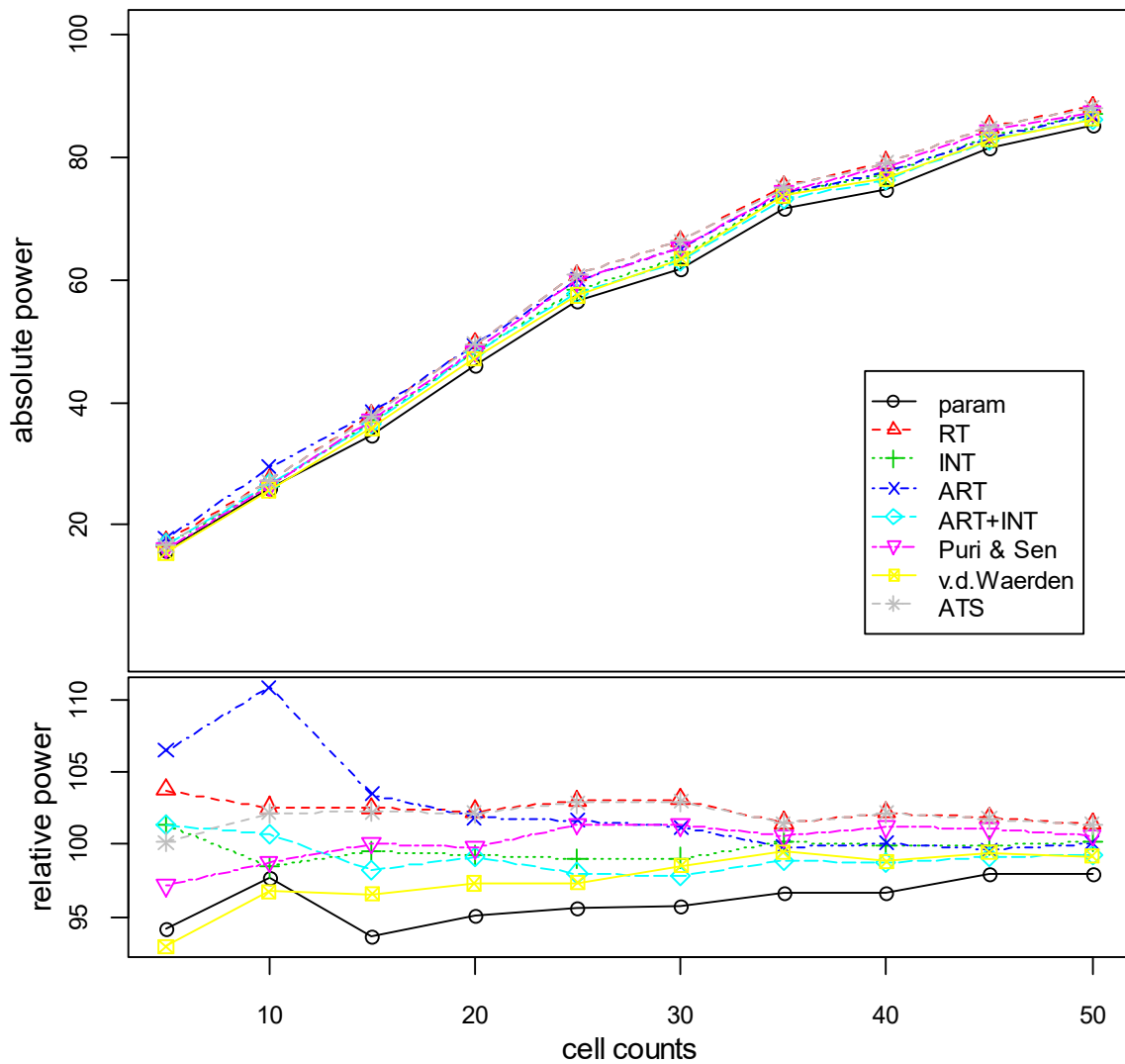
3. 2. 16 left skewed distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	31.20	45.10	56.00	65.20	72.00	80.10	84.50	88.30	91.80	94.35
RT	21.95	31.75	42.10	51.35	56.60	67.10	72.60	77.70	82.10	87.05
INT	31.90	45.80	56.85	67.15	73.20	80.65	85.40	88.95	92.40	94.65
ART	12.30	24.60	34.90	47.35	56.10	65.70	72.65	79.15	84.30	88.30
ART+INT	15.05	29.75	43.85	60.15	71.15	81.25	86.90	91.50	94.75	97.40
Puri & Sen	20.00	30.85	41.00	50.65	56.00	66.65	71.85	77.15	81.60	86.70
v.d.Waerden	28.45	44.40	55.35	66.65	72.20	80.25	85.00	88.50	92.15	94.40
ATS	7.50	16.60	24.95	34.15	39.55	49.70	55.85	63.00	69.00	74.50



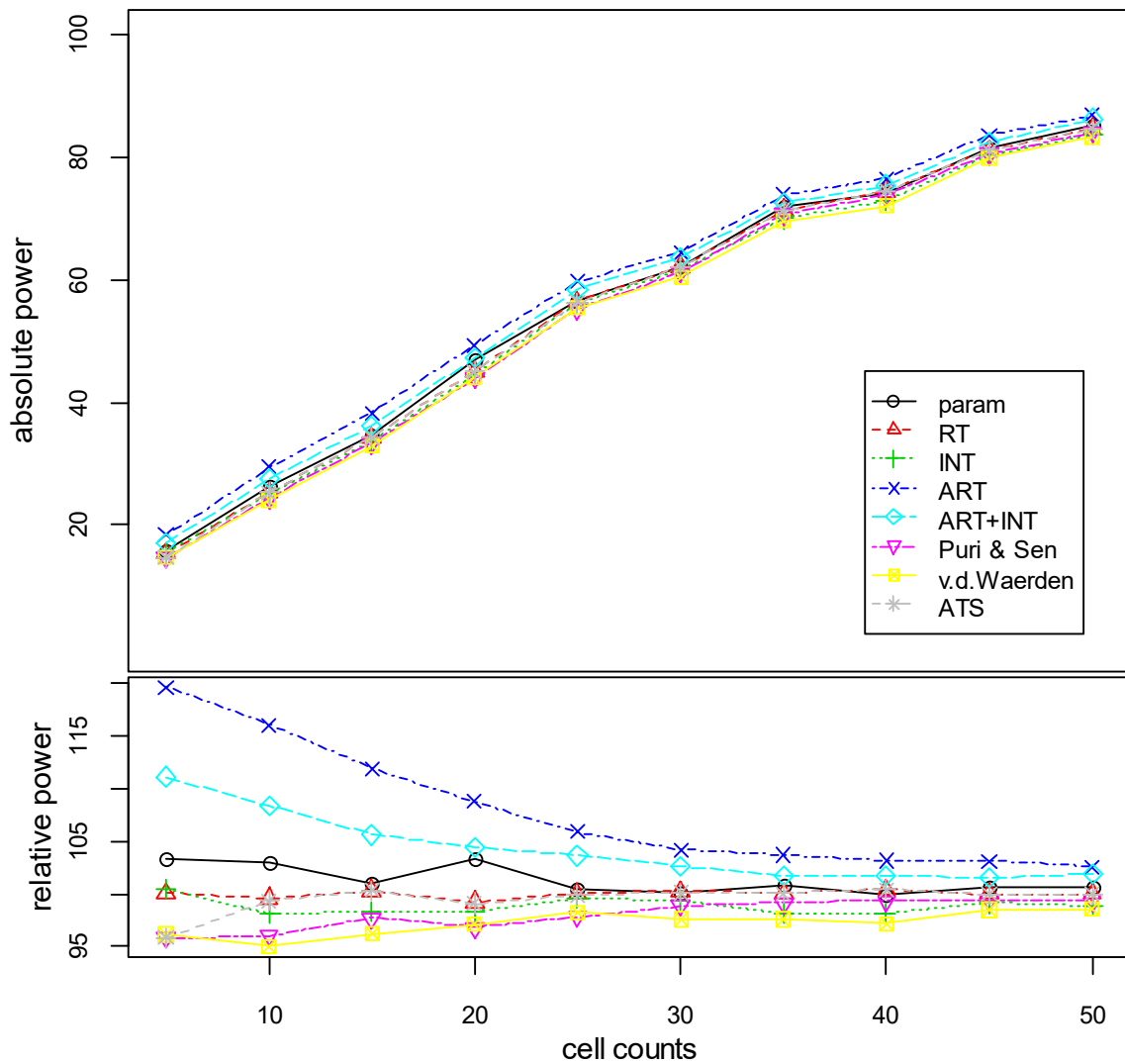
3.3.2 normal distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.70	25.95	34.65	46.05	56.40	61.60	71.55	74.70	81.50	85.05
RT	17.30	27.25	37.95	49.55	60.75	66.30	75.15	79.00	84.80	88.05
INT	16.90	26.15	36.85	48.10	58.35	63.70	74.15	77.25	83.15	86.95
ART	17.75	29.45	38.30	49.35	59.95	65.05	73.90	77.35	82.95	86.90
ART+INT	16.90	26.75	36.35	48.05	57.80	62.90	73.20	76.30	82.55	86.15
Puri & Sen	16.20	26.25	37.05	48.35	59.80	65.15	74.45	78.25	84.15	87.35
v.d.Waerden	15.50	25.70	35.75	47.15	57.40	63.35	73.65	76.40	82.80	86.10
ATS	16.70	27.15	37.85	49.50	60.65	66.20	75.10	79.00	84.75	88.00



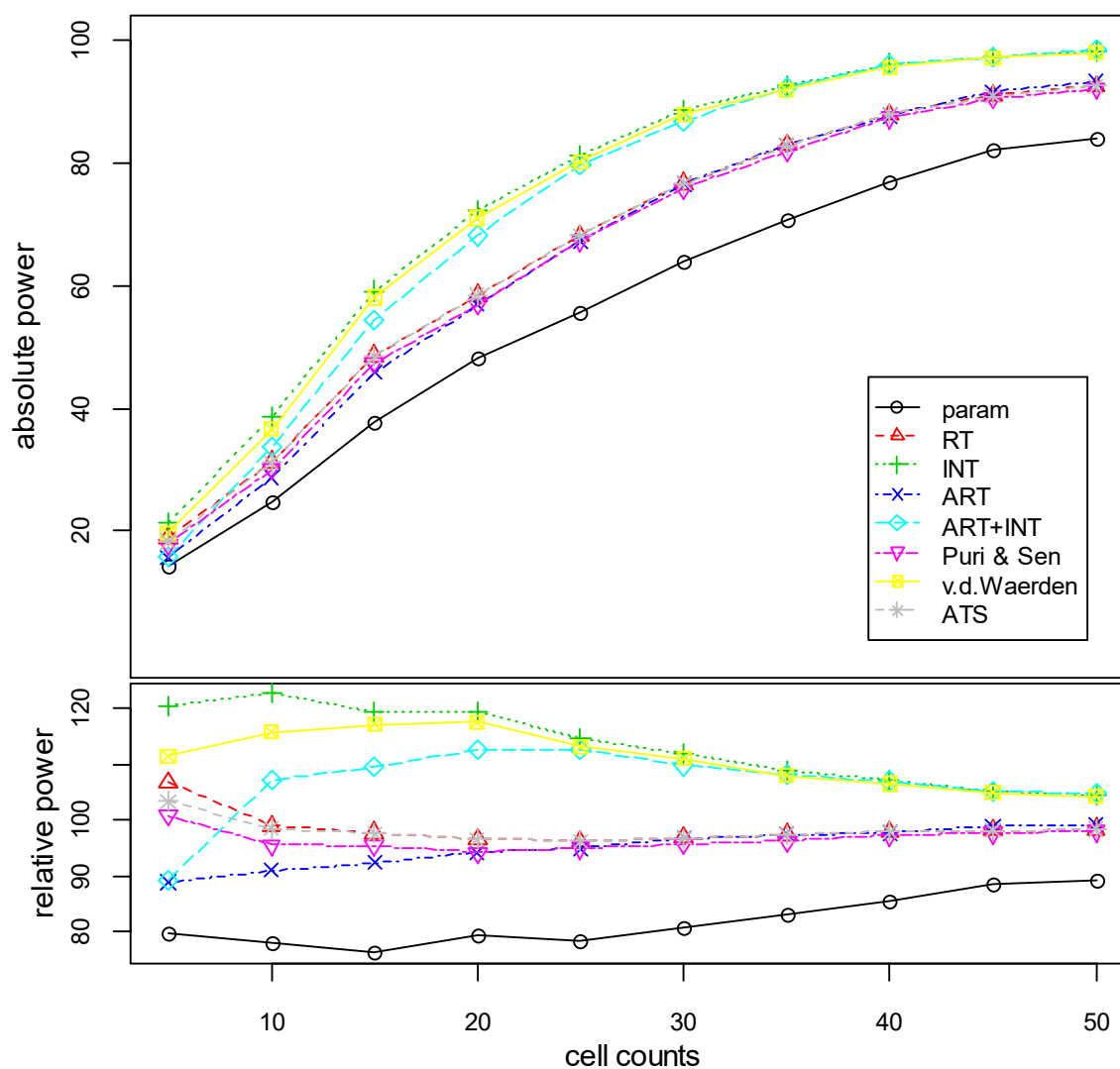
3.3.3 normal distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	15.85	26.15	34.50	46.85	56.60	61.95	71.75	74.00	81.55	85.10
RT	15.35	25.30	34.25	45.00	56.35	62.00	71.25	74.40	81.00	84.55
INT	15.40	24.95	33.55	44.60	56.05	61.50	69.90	72.75	80.30	83.65
ART	18.35	29.50	38.20	49.35	59.65	64.45	73.85	76.45	83.55	86.70
ART+INT	17.05	27.55	36.05	47.35	58.35	63.45	72.45	75.40	82.30	86.20
Puri & Sen	14.70	24.40	33.35	43.90	55.10	61.15	70.60	73.60	80.50	84.00
v.d.Waerden	14.75	24.15	32.85	44.05	55.35	60.35	69.50	72.00	79.80	83.30
ATS	14.70	25.25	34.25	44.95	56.25	61.90	71.25	74.40	81.00	84.55



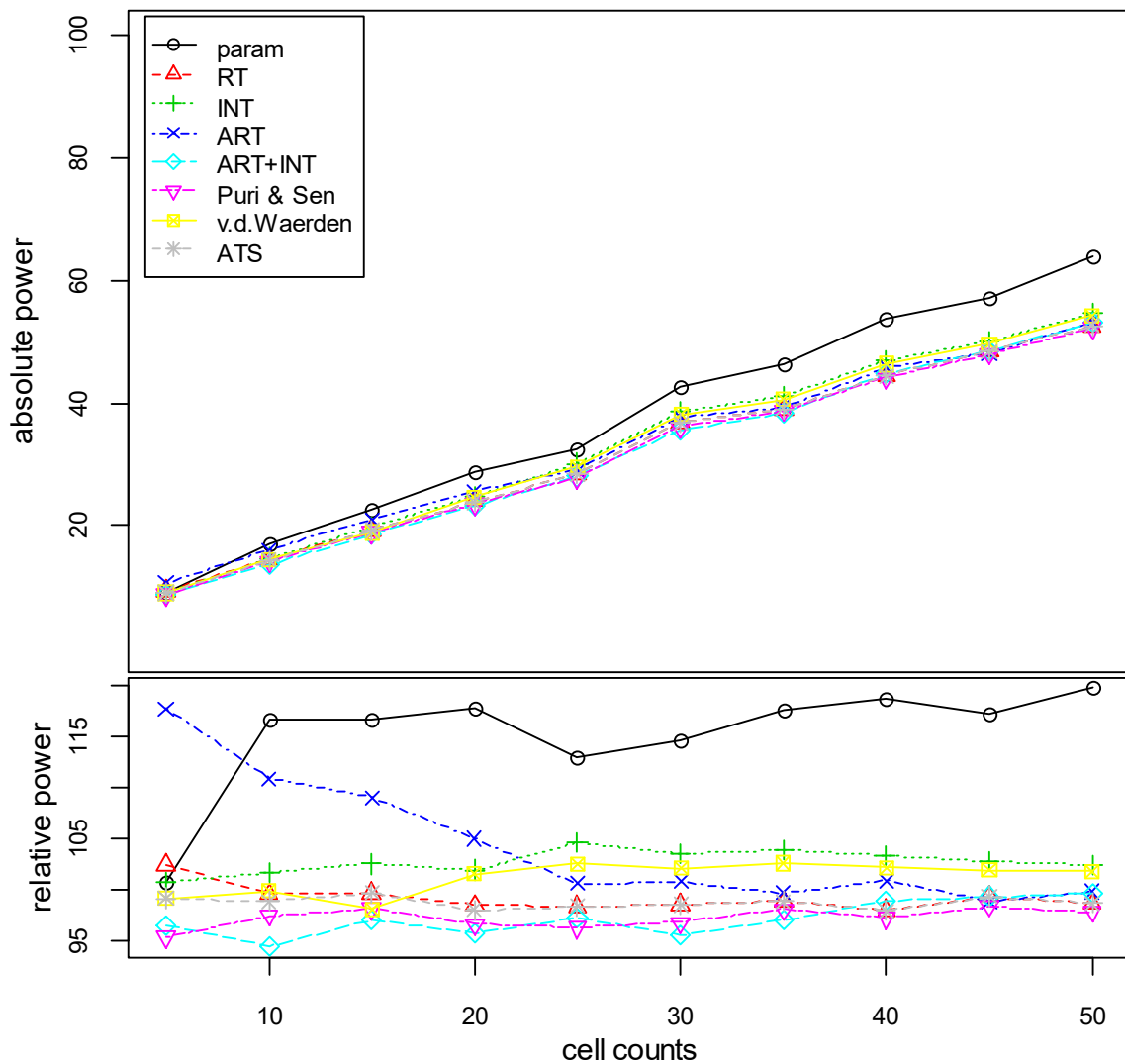
3.3.4 right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.15	24.65	37.85	48.05	55.60	63.85	70.75	76.85	82.00	83.90
RT	18.90	31.25	48.45	58.30	68.10	76.55	82.80	87.85	90.85	92.40
INT	21.30	38.70	59.10	72.10	81.00	88.40	92.55	96.05	97.25	98.10
ART	15.75	28.75	45.80	56.90	67.20	76.50	82.90	87.60	91.50	93.10
ART+INT	15.80	33.80	54.25	68.05	79.70	86.75	92.10	95.95	97.25	98.40
Puri & Sen	17.85	30.15	47.30	56.85	67.25	75.75	81.85	87.20	90.40	92.05
v.d.Waerden	19.75	36.55	58.05	70.95	80.10	87.75	91.75	95.50	97.00	97.85
ATS	18.30	31.10	48.40	58.30	68.10	76.55	82.80	87.85	90.80	92.40



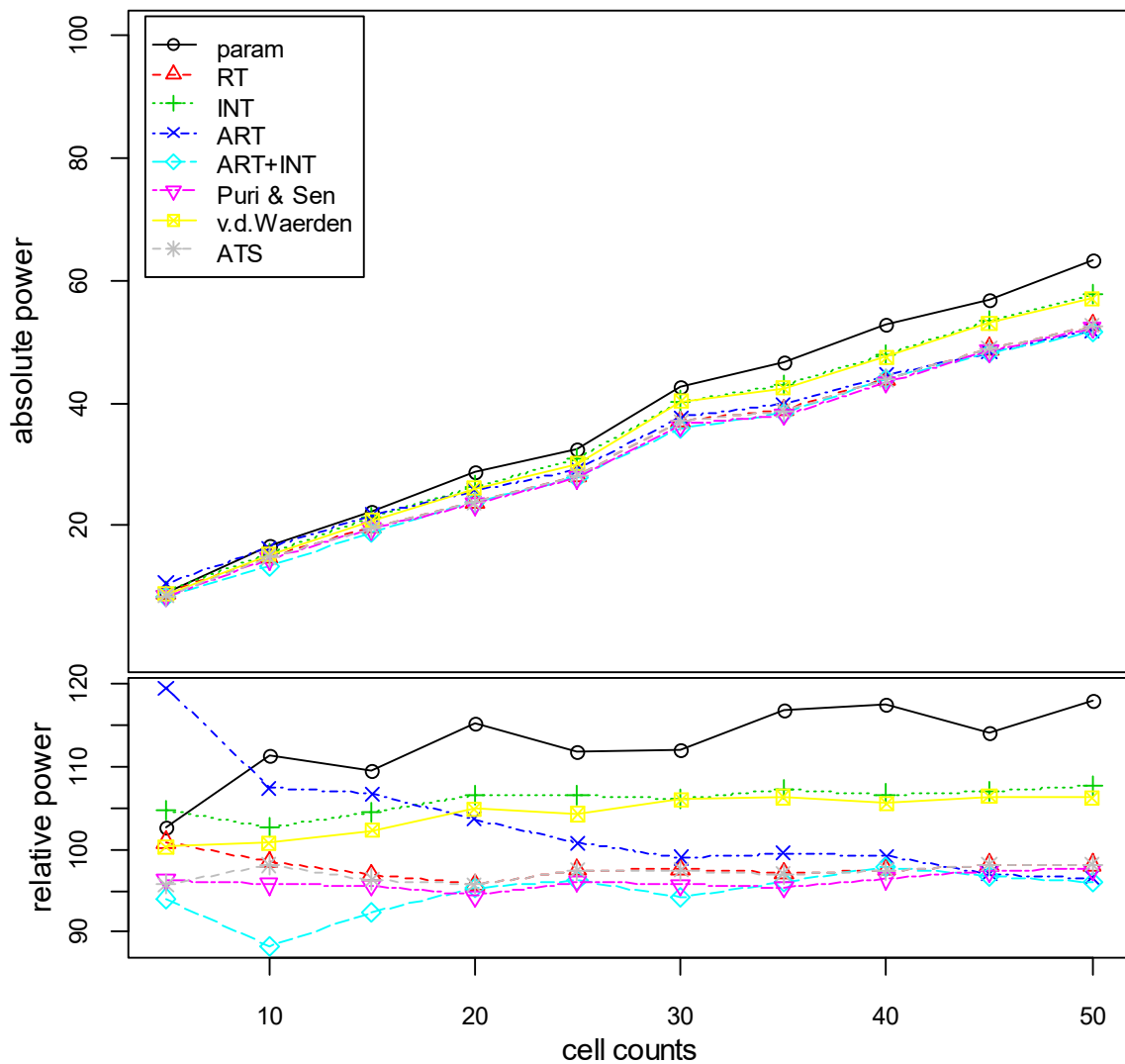
3.3.5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	9.20	16.95	22.50	28.65	32.55	42.70	46.45	53.80	57.05	63.80
RT	9.35	14.45	19.20	23.95	28.35	36.70	39.00	44.40	48.35	52.55
INT	9.20	14.75	19.75	24.80	30.15	38.55	41.00	46.80	50.00	54.55
ART	10.75	16.10	21.00	25.55	29.00	37.55	39.35	45.70	48.10	53.15
ART+INT	8.80	13.70	18.70	23.30	28.00	35.60	38.30	44.80	48.35	53.10
Puri & Sen	8.70	14.15	18.90	23.50	27.75	36.05	38.70	44.05	47.90	52.10
v.d.Waerden	9.05	14.50	18.90	24.70	29.55	38.05	40.50	46.30	49.60	54.20
ATS	9.05	14.35	19.20	23.85	28.35	36.70	39.00	44.35	48.35	52.55



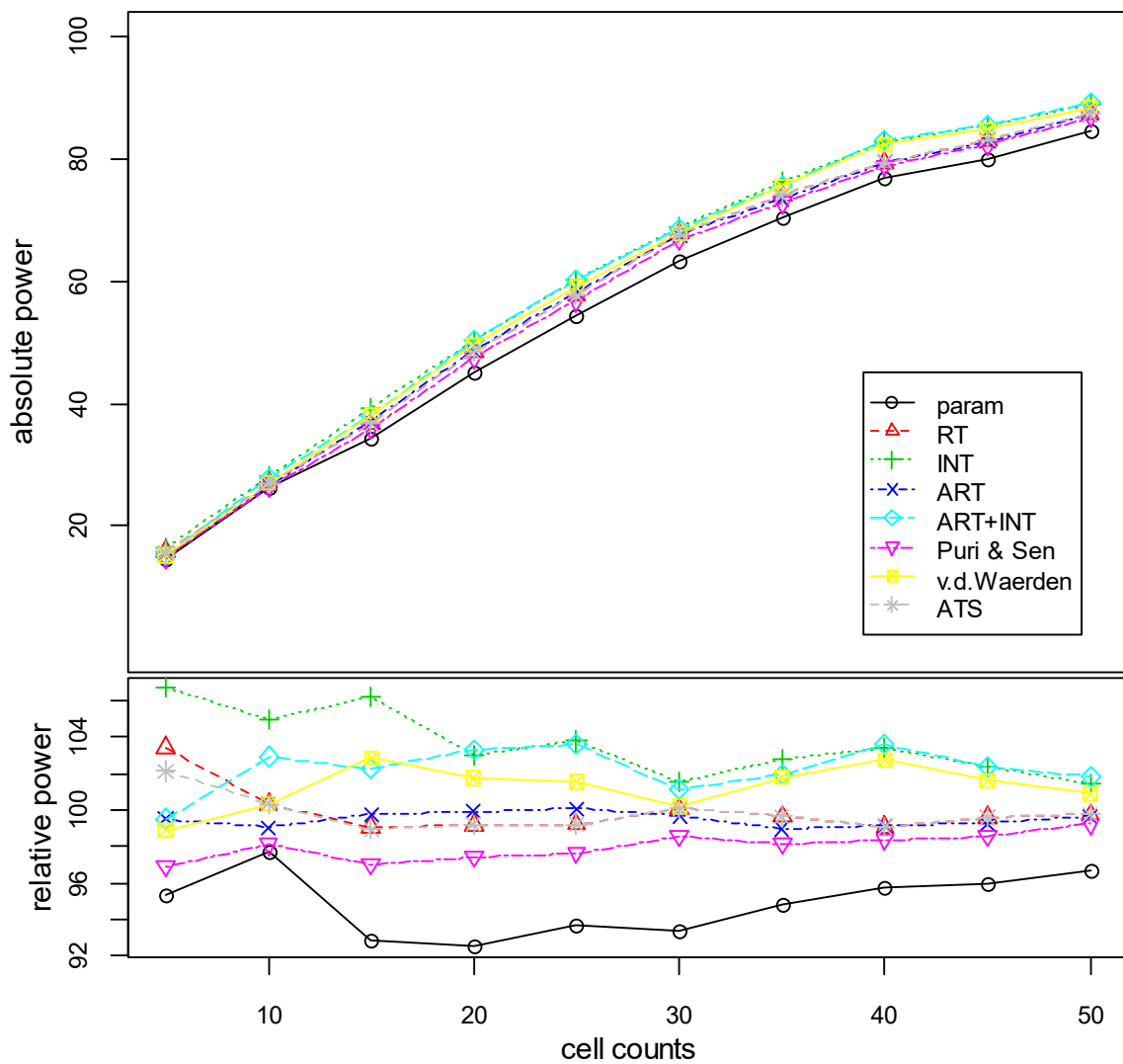
3.3.6 exponential distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	9.10	16.90	22.25	28.65	32.35	42.50	46.60	52.75	56.75	63.20
RT	8.95	14.95	19.70	23.80	28.20	37.05	38.80	43.80	48.85	52.60
INT	9.30	15.60	21.25	26.45	30.80	40.30	42.85	47.90	53.30	57.75
ART	10.60	16.30	21.70	25.75	29.15	37.60	39.75	44.55	48.30	51.75
ART+INT	8.35	13.40	18.80	23.70	27.85	35.75	38.35	43.95	48.15	51.45
Puri & Sen	8.55	14.55	19.45	23.45	27.80	36.35	38.10	43.35	48.50	52.30
v.d.Waerden	8.90	15.30	20.80	26.05	30.15	40.25	42.45	47.40	52.95	56.95
ATS	8.50	14.90	19.60	23.80	28.20	37.00	38.75	43.80	48.85	52.60



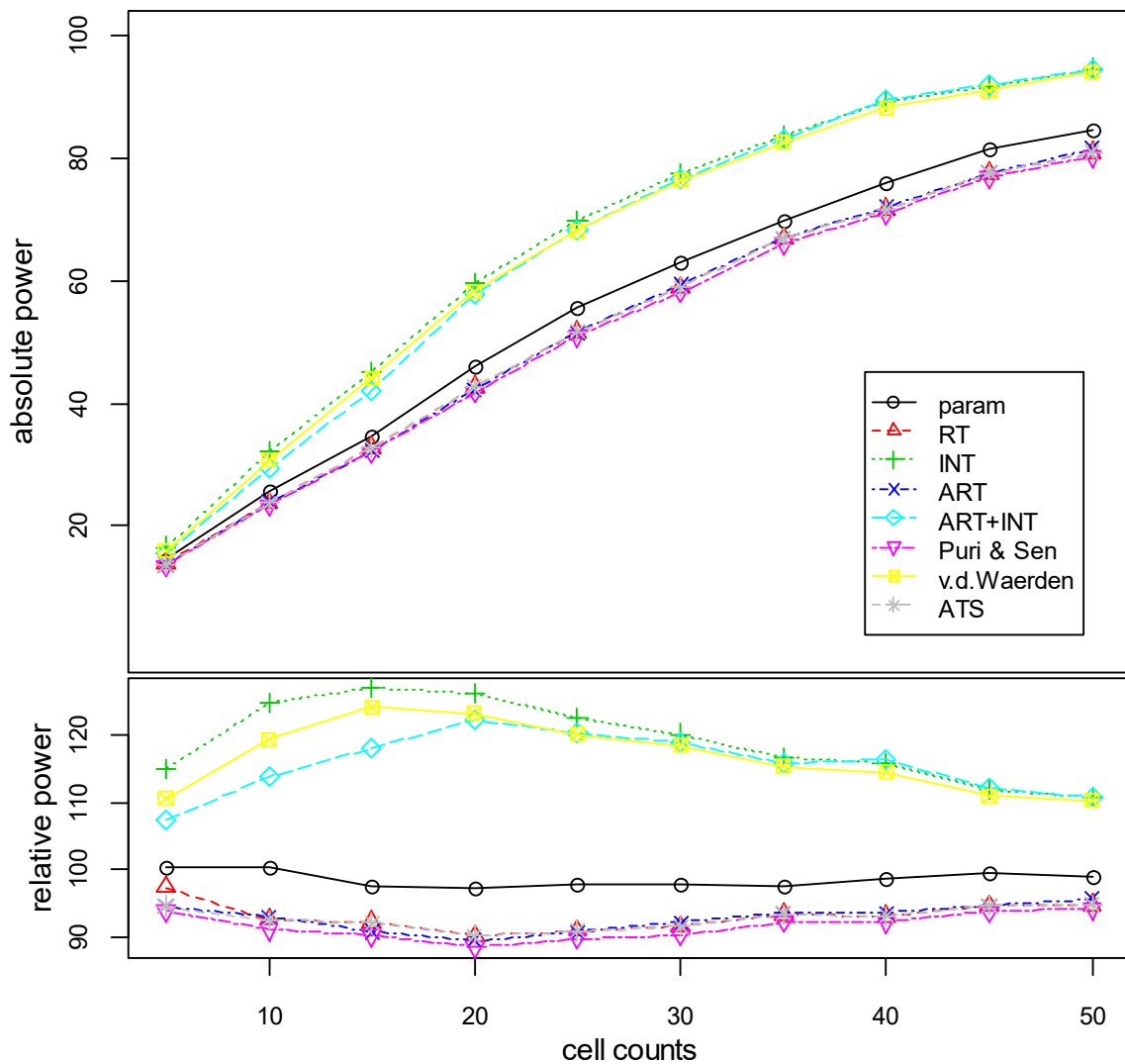
3.3.7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.65	26.30	34.40	45.15	54.40	63.20	70.35	76.70	80.00	84.55
RT	15.90	27.00	36.70	48.40	57.60	67.70	73.90	79.35	83.05	87.25
INT	16.40	28.25	39.35	50.25	60.25	68.70	76.20	82.80	85.40	88.70
ART	15.30	26.65	36.95	48.75	58.10	67.45	73.40	79.40	82.75	87.15
ART+INT	15.30	27.70	37.90	50.40	60.15	68.45	75.60	83.00	85.40	89.05
Puri & Sen	14.90	26.40	35.95	47.55	56.70	66.70	72.80	78.80	82.20	86.80
v.d.Waerden	15.20	27.00	38.10	49.65	58.95	67.80	75.50	82.30	84.75	88.25
ATS	15.70	27.00	36.65	48.40	57.60	67.70	73.90	79.35	83.05	87.25



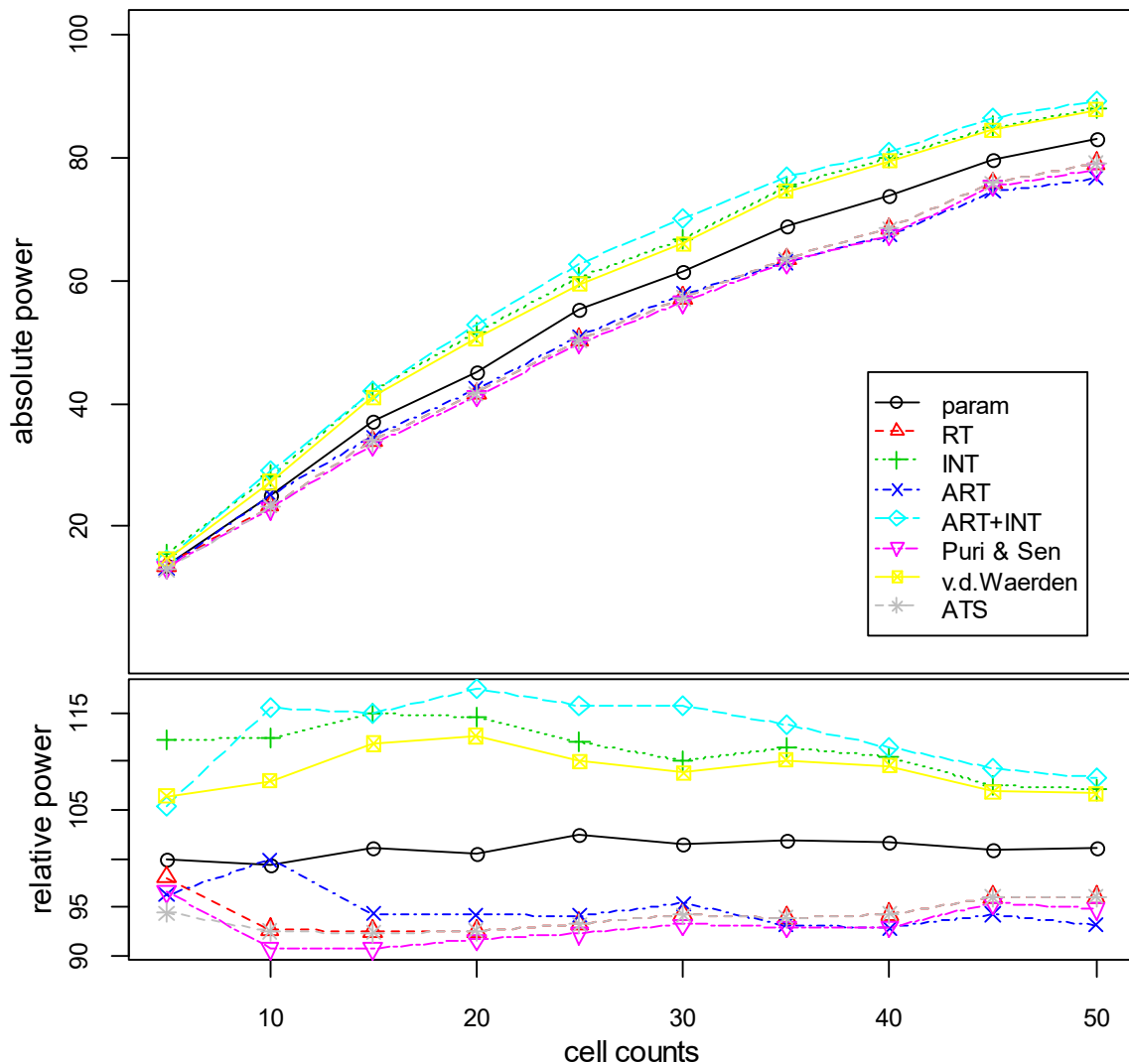
3.3.8 uniform distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.50	25.8	34.60	45.95	55.55	62.90	69.85	75.90	81.45	84.45
RT	14.05	23.8	32.75	42.60	51.60	58.90	66.80	71.55	77.50	80.80
INT	16.60	32.1	45.10	59.65	69.60	77.35	83.45	89.05	91.60	94.50
ART	13.65	23.9	32.25	42.25	51.50	59.25	66.90	71.85	77.50	81.50
ART+INT	15.50	29.3	41.95	57.75	68.25	76.50	82.95	89.40	91.75	94.45
Puri & Sen	13.55	23.4	32.05	41.80	50.90	58.15	66.00	70.85	76.75	80.20
v.d.Waerden	15.95	30.7	44.10	58.20	68.15	76.25	82.50	88.05	90.85	94.00
ATS	13.65	23.8	32.70	42.60	51.60	58.90	66.80	71.55	77.50	80.80



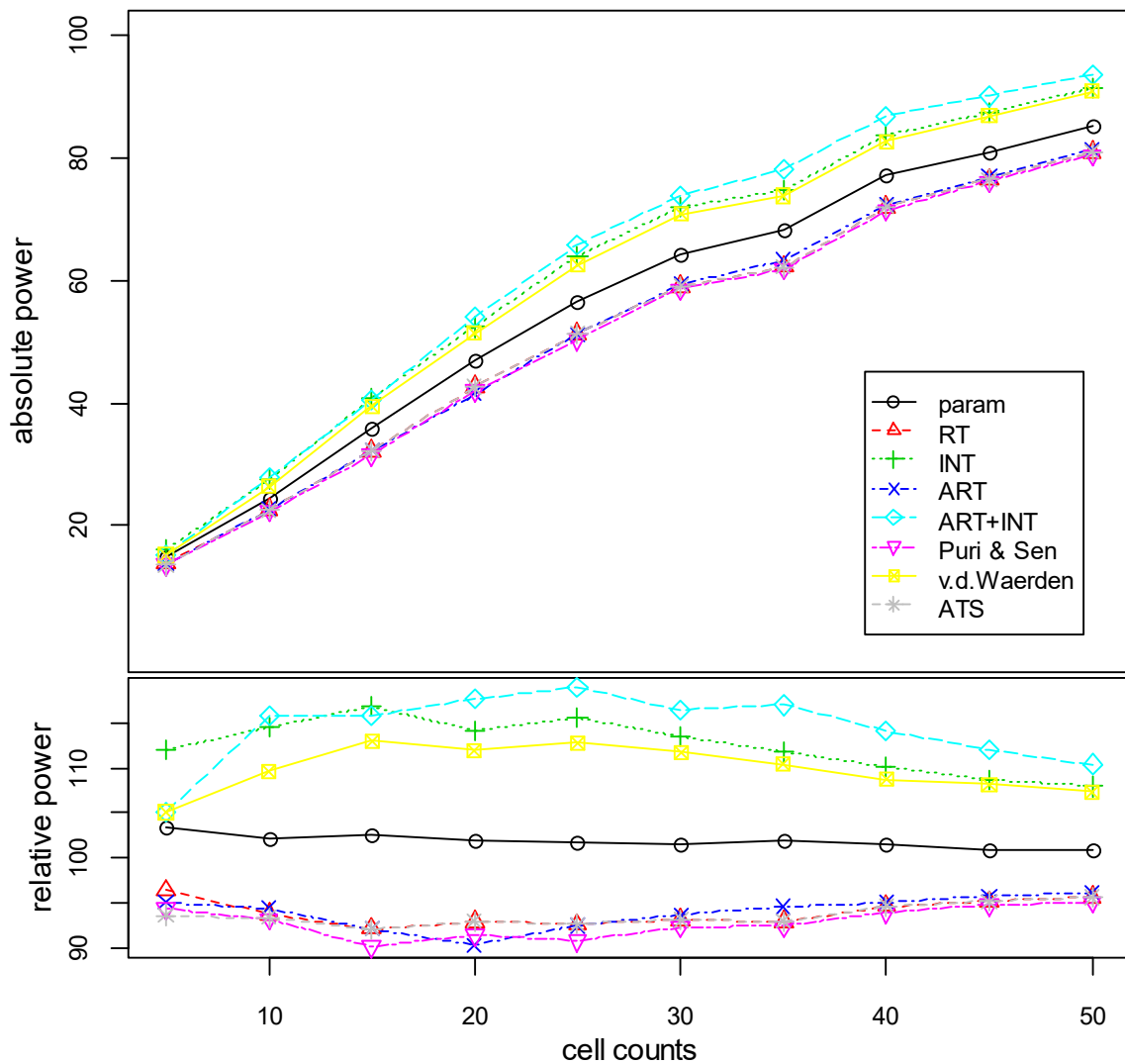
3.3.9 uniform distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	13.80	25.00	37.05	45.15	55.30	61.45	68.80	73.70	79.70	83.00
RT	13.55	23.35	33.90	41.60	50.40	57.15	63.45	68.35	75.85	78.95
INT	15.50	28.30	42.10	51.50	60.50	66.70	75.25	80.00	84.95	87.95
ART	13.30	25.15	34.55	42.35	50.85	57.80	62.95	67.30	74.45	76.55
ART+INT	14.55	29.10	42.10	52.75	62.50	70.15	76.85	80.70	86.35	89.00
Puri & Sen	13.35	22.85	33.25	41.20	49.85	56.50	62.80	67.40	75.35	77.95
v.d.Waerden	14.70	27.20	40.95	50.60	59.40	65.95	74.40	79.40	84.40	87.65
ATS	13.05	23.30	33.85	41.60	50.35	57.10	63.45	68.35	75.85	78.95



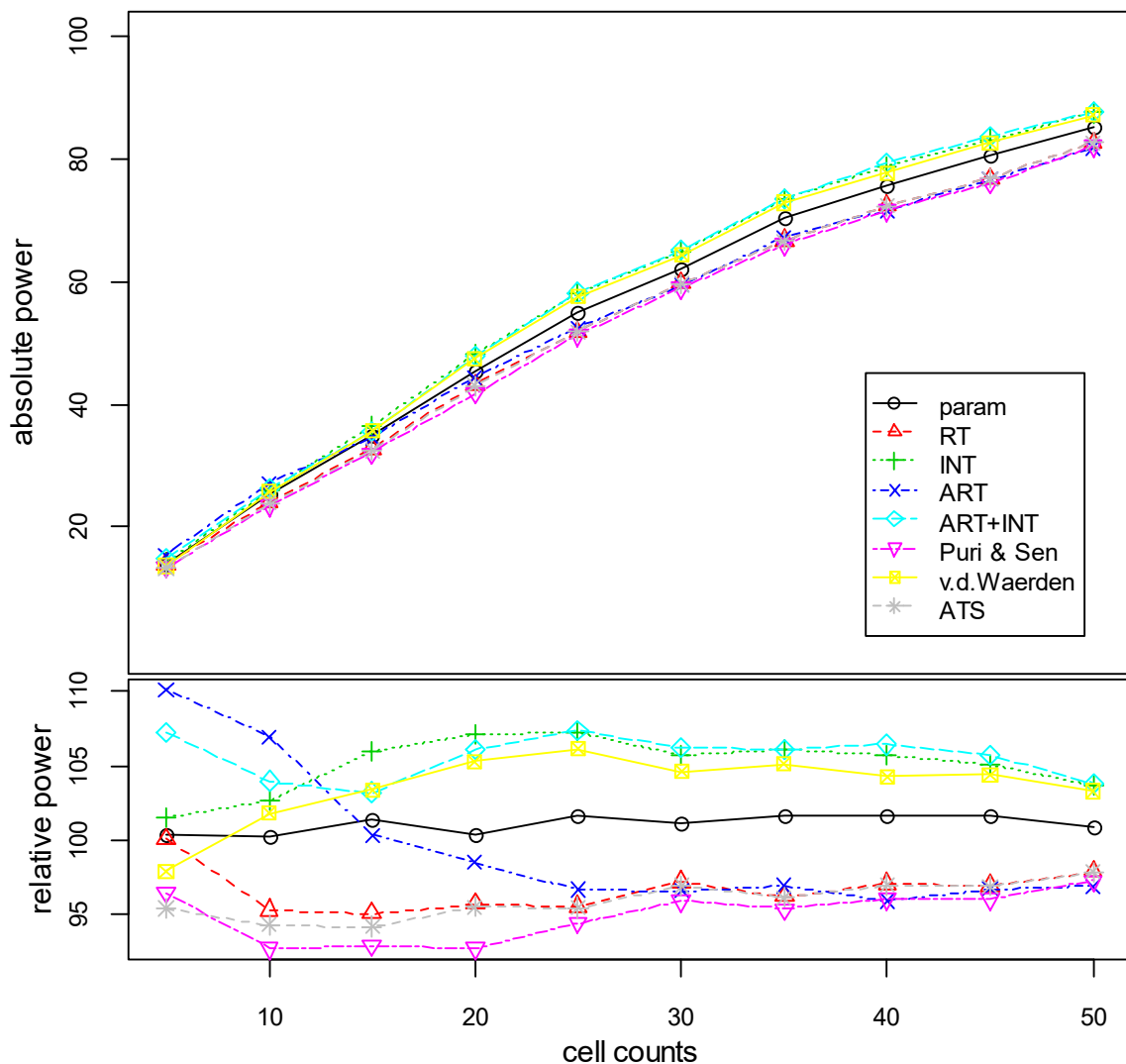
3.3.10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.95	24.60	35.85	46.80	56.35	64.25	68.20	77.10	80.90	85.25
RT	13.95	22.60	32.20	42.65	51.30	59.00	62.15	71.95	76.35	80.90
INT	16.20	27.60	40.80	52.35	63.95	71.85	74.65	83.60	87.20	91.25
ART	13.75	22.75	32.20	41.45	51.20	59.35	63.25	72.25	76.85	81.30
ART+INT	15.20	27.90	40.40	53.95	65.75	73.75	78.15	86.65	89.90	93.35
Puri & Sen	13.65	22.45	31.50	41.95	50.25	58.50	61.80	71.40	76.05	80.40
v.d.Waerden	15.20	26.40	39.45	51.35	62.40	70.75	73.75	82.60	86.75	90.75
ATS	13.55	22.50	32.20	42.65	51.30	59.00	62.15	71.95	76.35	80.90



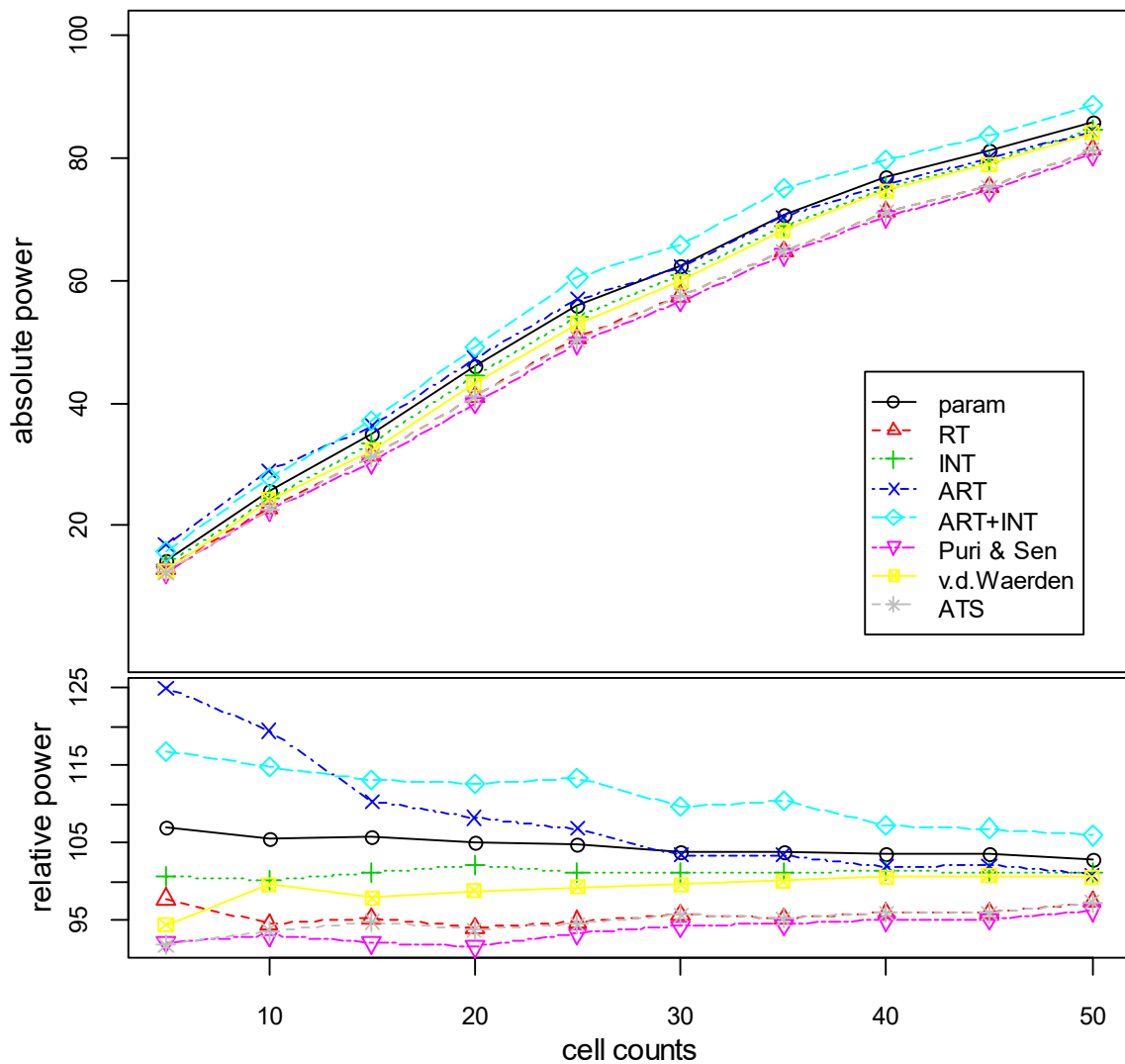
3.3.11 left skewed distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.05	25.40	34.90	45.25	55.05	62.15	70.40	75.70	80.45	85.10
RT	14.00	24.15	32.75	43.15	51.80	59.70	66.65	72.30	76.75	82.55
INT	14.20	26.00	36.50	48.25	58.10	64.95	73.50	78.70	83.10	87.45
ART	15.40	27.10	34.55	44.40	52.40	59.35	67.15	71.45	76.55	81.75
ART+INT	15.00	26.35	35.55	47.80	58.15	65.20	73.45	79.25	83.65	87.55
Puri & Sen	13.50	23.50	32.00	41.80	51.20	58.90	66.05	71.55	76.00	82.05
v.d.Waerden	13.70	25.80	35.60	47.45	57.50	64.25	72.80	77.65	82.60	87.10
ATS	13.35	23.90	32.45	43.05	51.75	59.55	66.60	72.25	76.70	82.55



3. 3. 12 left skewed distribution - unequal variances (on A and B)

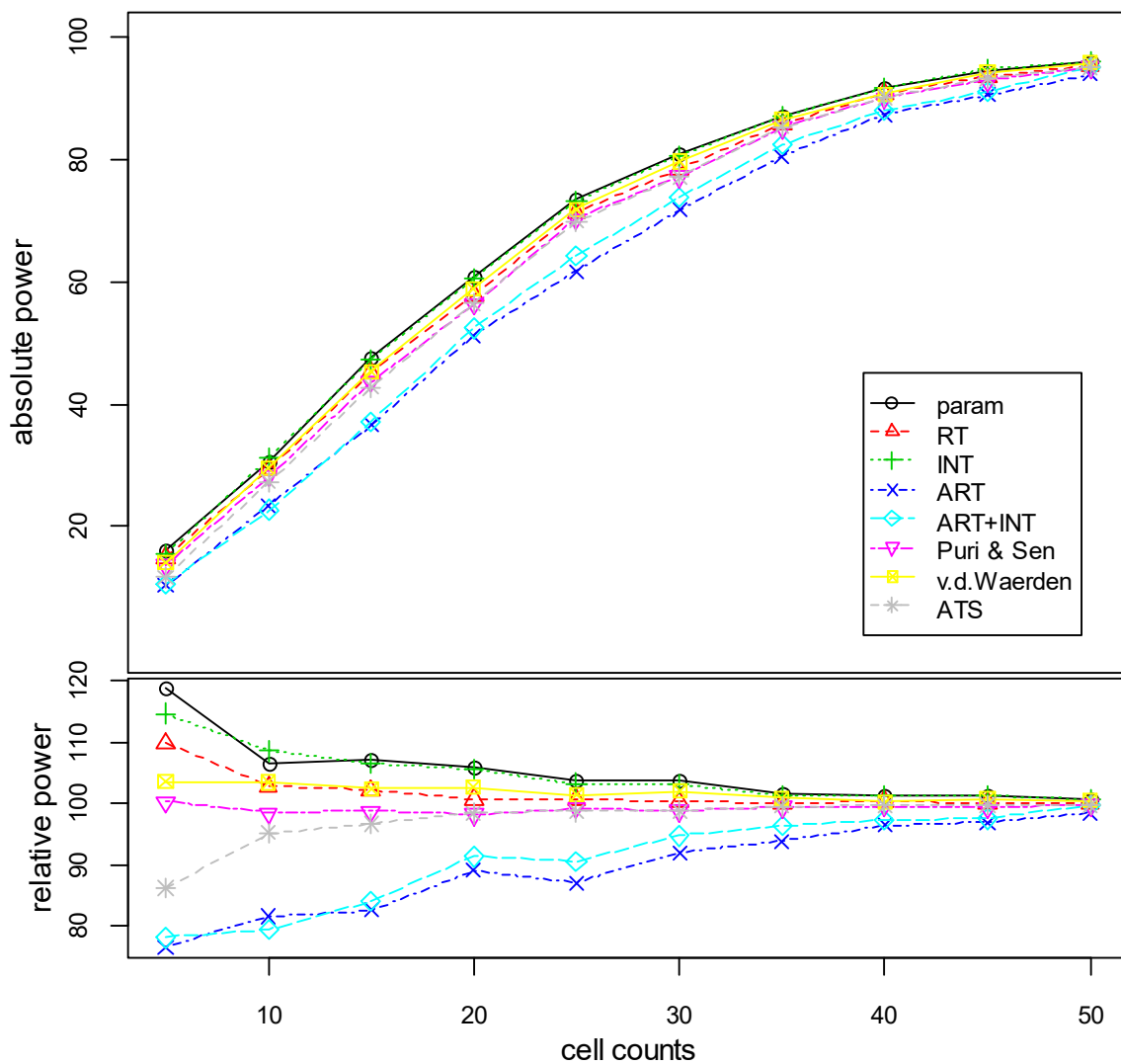
	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.40	25.65	34.80	45.90	55.80	62.35	70.60	76.75	81.10	85.75
RT	13.15	22.95	31.35	41.05	50.55	57.45	64.75	71.10	75.15	81.25
INT	13.55	24.35	33.25	44.55	53.90	60.70	68.70	75.10	79.30	84.40
ART	16.80	29.00	36.30	47.25	56.90	62.05	70.30	75.55	79.95	84.20
ART+INT	15.70	27.90	37.20	49.20	60.35	65.75	74.95	79.50	83.70	88.40
Puri & Sen	12.40	22.60	30.30	40.00	49.70	56.55	64.20	70.35	74.50	80.35
v.d.Waerden	12.70	24.20	32.20	43.15	52.90	59.75	68.05	74.55	78.90	84.00
ATS	12.35	22.75	31.20	40.95	50.35	57.45	64.70	71.10	75.15	81.20



3. 4. Main effect A - B significant (effects $a_i = 0.3*s$ $b_j = 0.3*s$ / unequal n_i / # levels = 4*5)

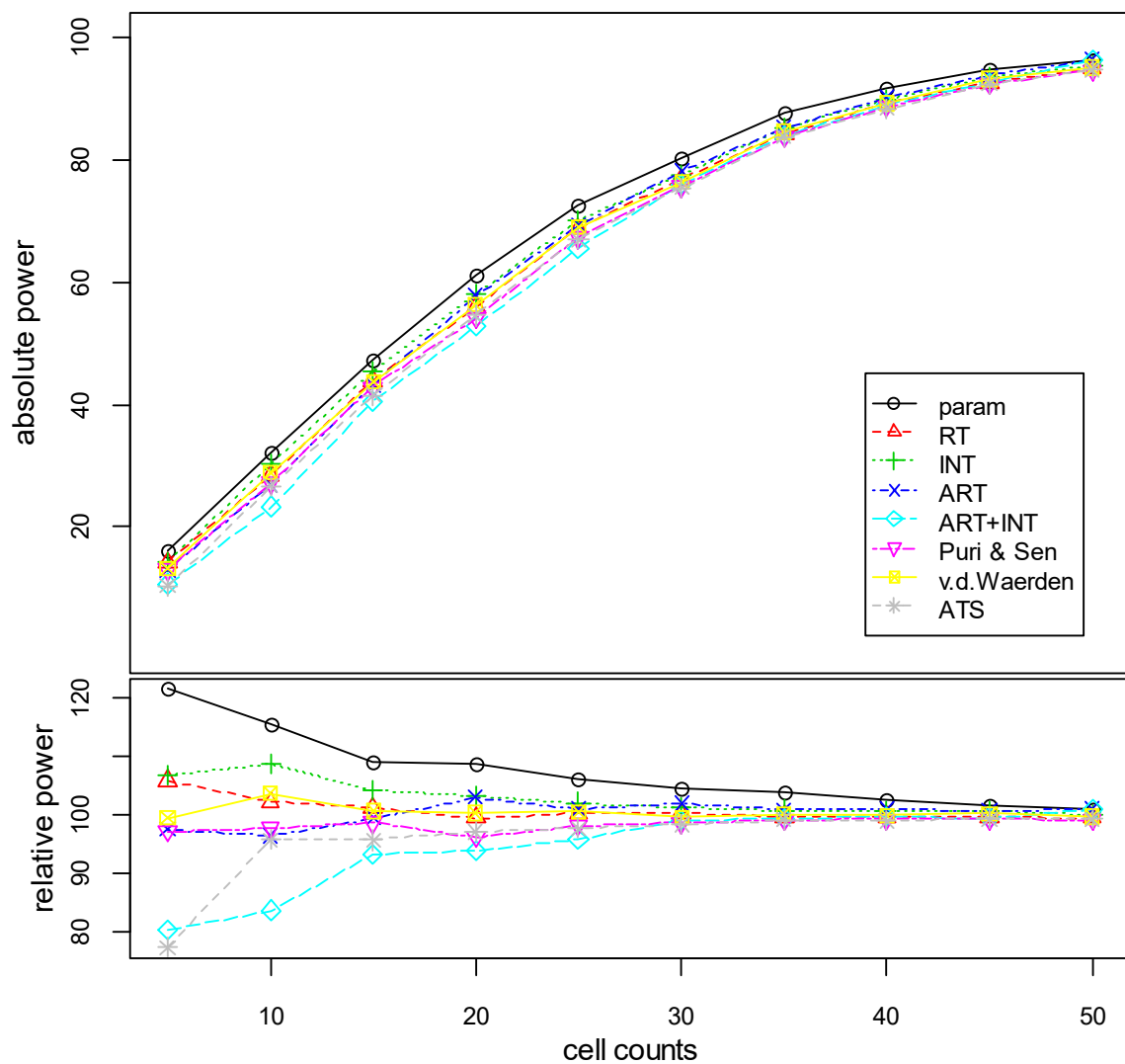
3. 4. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.10	30.55	47.40	60.70	73.45	80.90	87.05	91.60	94.50	95.90
RT	14.90	29.45	45.15	57.75	71.25	78.25	85.65	90.65	93.40	95.25
INT	15.55	31.10	47.10	60.50	73.10	80.35	86.85	91.50	94.55	95.90
ART	10.40	23.40	36.55	51.10	61.60	71.70	80.40	87.15	90.45	93.80
ART+INT	10.60	22.75	37.20	52.35	64.15	73.85	82.45	87.80	91.00	95.05
Puri & Sen	13.60	28.20	43.65	56.30	70.20	77.05	85.15	89.90	92.70	95.00
v.d.Waerden	14.05	29.65	45.30	58.80	71.75	79.55	86.45	90.60	94.10	95.65
ATS	11.70	27.30	42.75	56.40	69.85	77.00	85.25	90.05	93.10	95.00



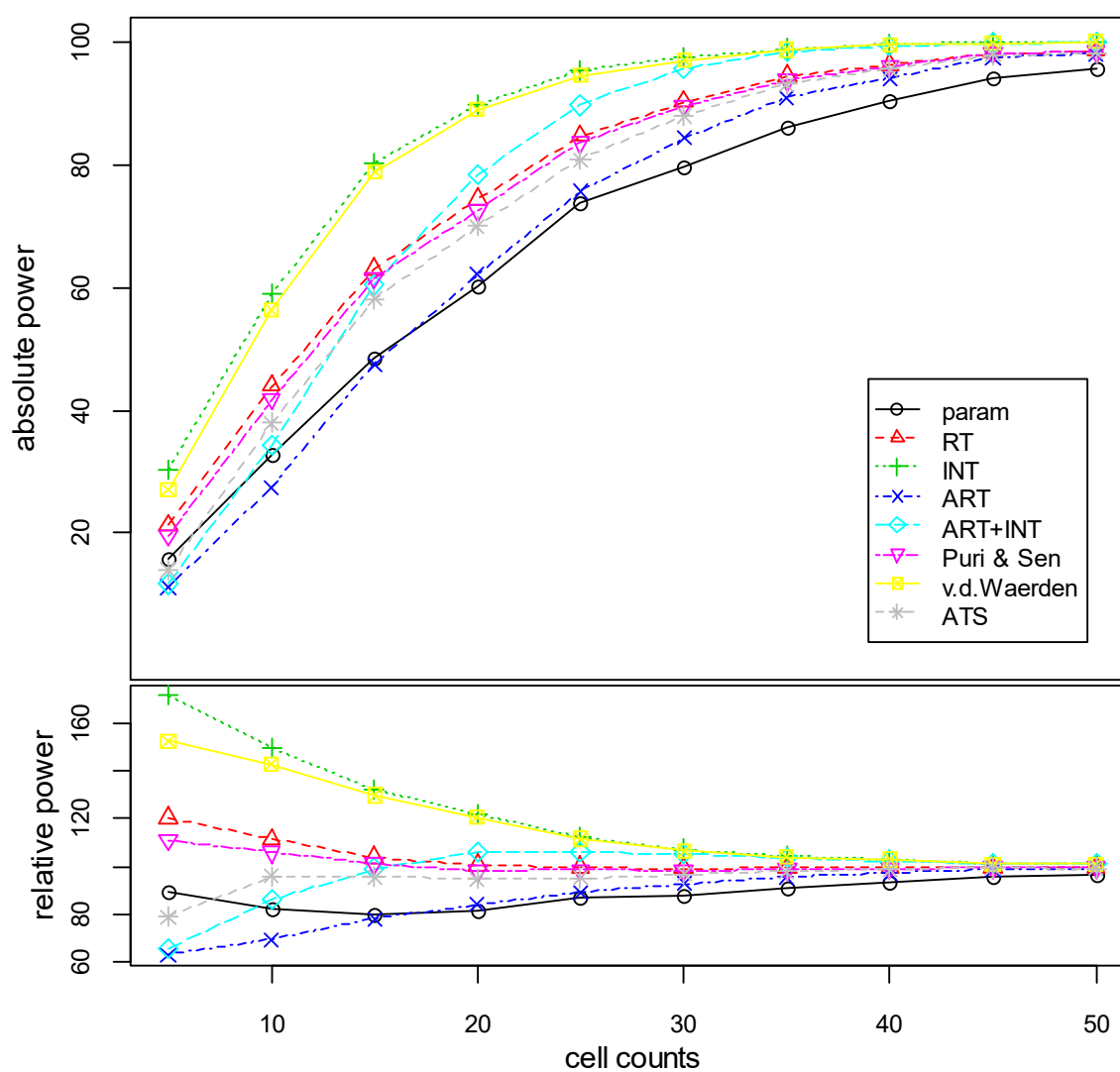
3. 4. 3 normal distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	16.25	32.25	47.25	61.10	72.60	80.10	87.60	91.55	94.55	96.35
RT	14.15	28.50	43.90	55.85	68.65	76.75	84.20	89.05	92.55	94.80
INT	14.30	30.35	45.25	58.00	69.90	77.45	85.10	89.80	93.50	95.30
ART	13.05	26.90	43.15	57.85	69.15	78.05	85.20	90.10	93.60	96.25
ART+INT	10.75	23.35	40.40	52.70	65.55	75.80	83.85	88.95	92.45	96.10
Puri & Sen	13.00	27.25	42.80	54.05	67.20	75.55	83.65	88.55	92.30	94.55
v.d.Waerden	13.30	28.90	43.65	56.30	68.85	76.25	84.50	89.15	93.10	95.00
ATS	10.35	26.70	41.50	54.50	66.85	75.35	83.65	88.30	92.25	94.60



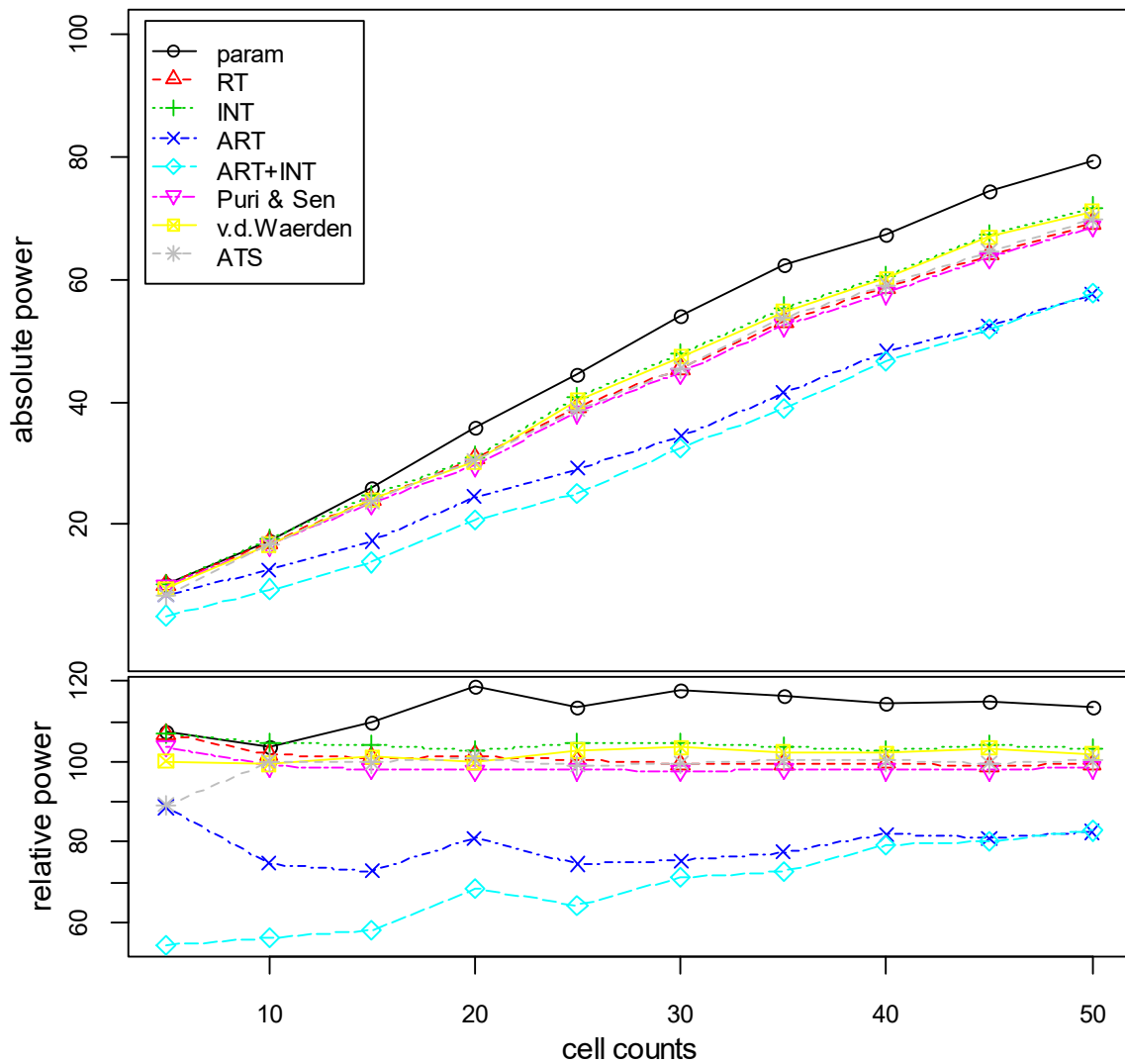
3. 4. 4 right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	15.80	32.65	48.4	60.20	73.75	79.65	86.10	90.25	94.20	95.70
RT	21.30	43.95	63.0	74.35	84.60	90.20	94.40	96.20	98.15	98.50
INT	30.30	58.95	80.2	89.80	95.15	97.35	98.80	99.60	99.80	99.95
ART	11.20	27.45	47.5	62.10	75.60	84.25	90.85	94.00	97.30	97.95
ART+INT	11.70	34.20	60.35	78.45	89.60	95.55	98.25	99.20	99.75	99.90
Puri & Sen	19.65	41.80	61.5	72.45	83.55	89.50	93.75	96.05	98.10	98.30
v.d.Waerden	26.95	56.35	78.8	88.90	94.50	96.95	98.70	99.55	99.75	99.95
ATS	14.00	37.95	58.1	69.95	80.75	87.90	93.00	95.55	97.90	98.10



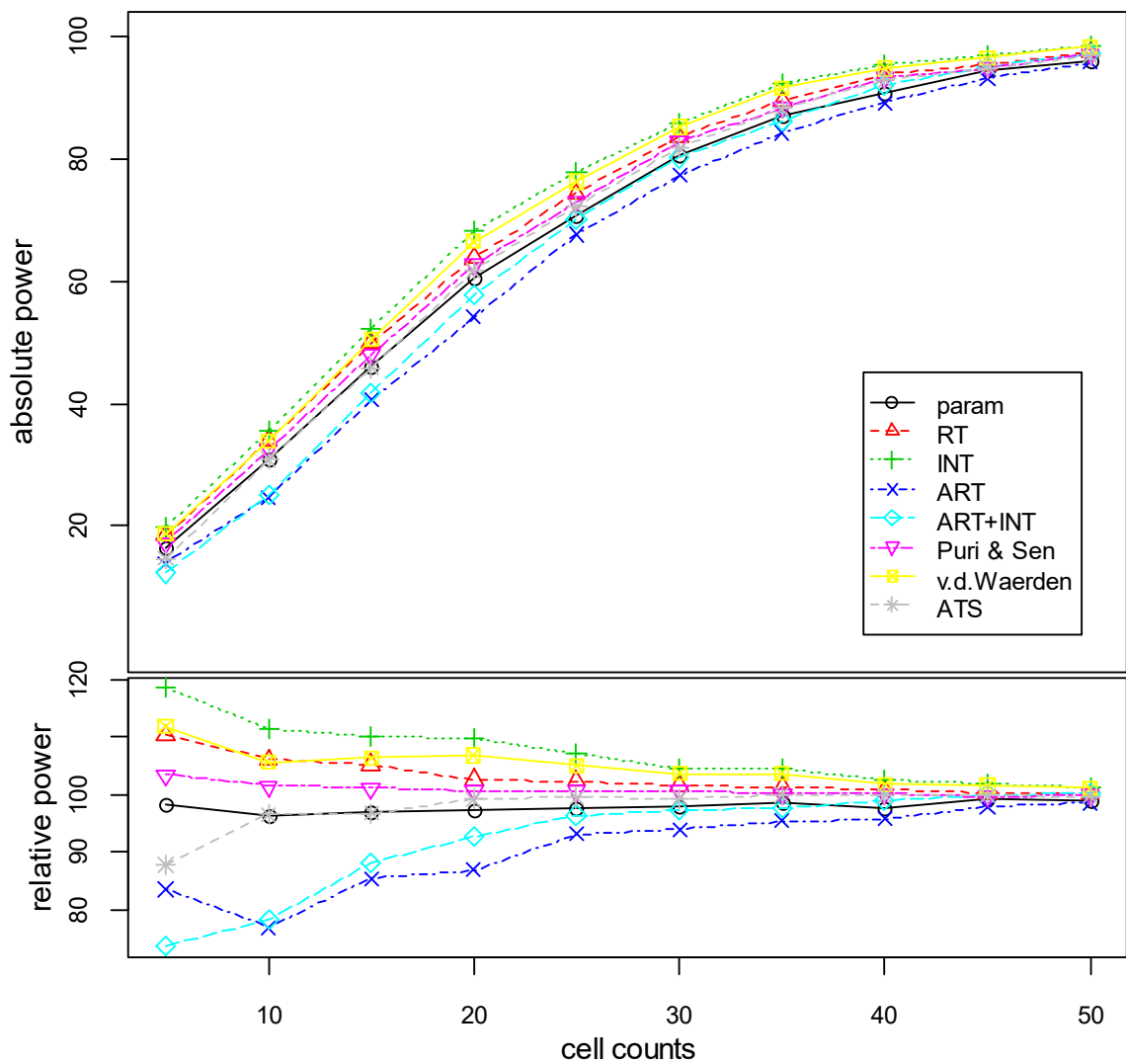
3. 4. 5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	10.30	17.45	26.10	35.90	44.35	53.90	62.20	67.30	74.40	79.15
RT	10.25	17.15	24.05	30.75	39.15	45.40	53.15	58.60	64.00	69.10
INT	10.25	17.60	24.85	31.05	40.85	47.90	55.40	60.55	67.35	71.70
ART	8.50	12.60	17.35	24.50	29.15	34.45	41.45	48.15	52.40	57.45
ART+INT	5.20	9.50	13.85	20.75	25.10	32.55	38.95	46.55	51.95	57.60
Puri & Sen	9.95	16.65	23.40	29.65	38.30	44.65	52.45	57.70	63.45	68.55
v.d.Waerden	9.60	16.75	24.10	30.20	40.15	47.30	54.65	60.10	66.90	71.00
ATS	8.55	16.85	23.75	30.55	38.75	45.50	53.60	58.95	64.50	69.70



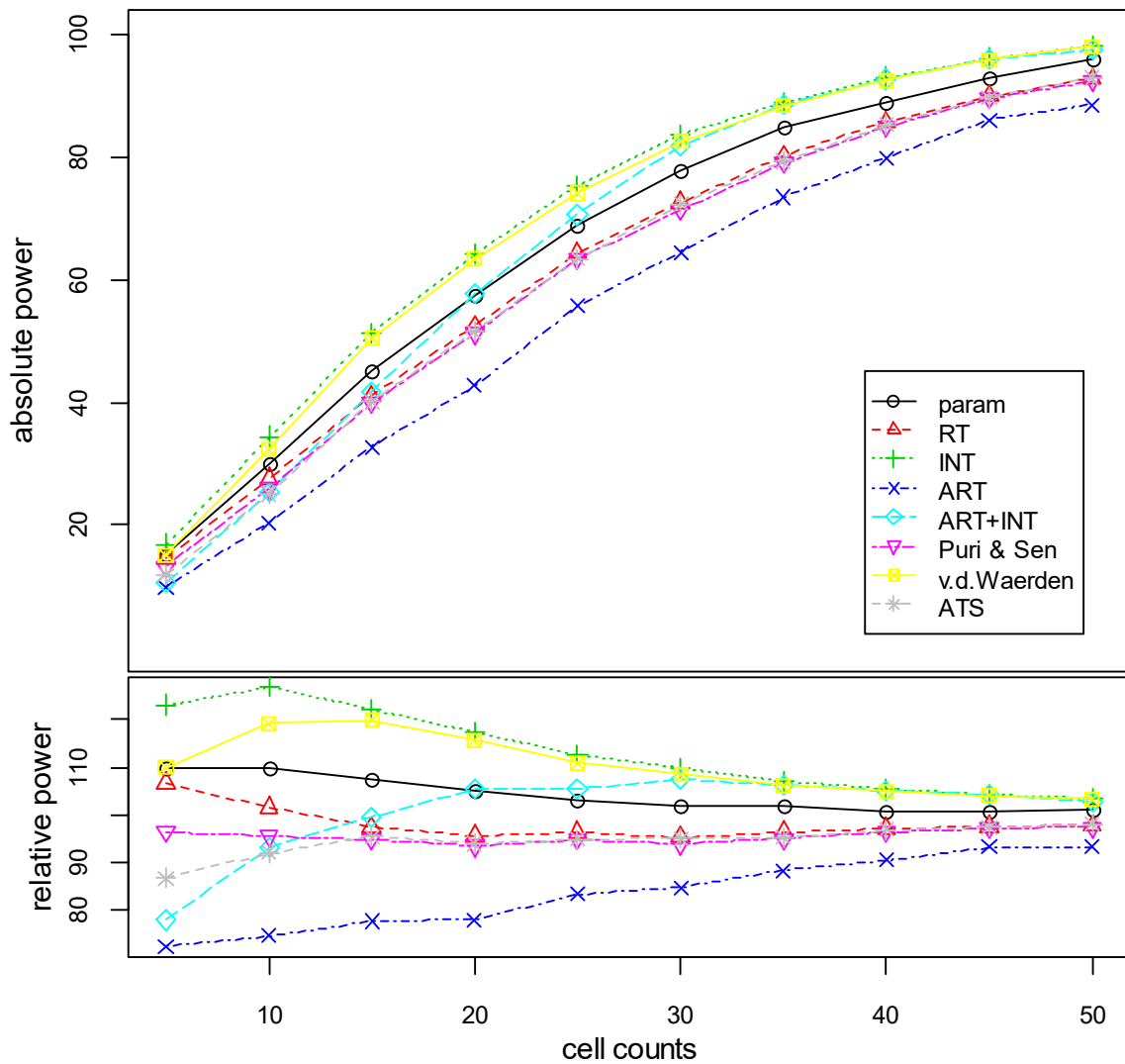
3.4.7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.40	30.85	45.95	60.55	70.80	80.60	87.00	90.65	94.25	95.95
RT	18.40	34.00	49.85	63.80	74.25	83.50	89.35	93.75	95.25	97.30
INT	19.75	35.65	52.15	68.15	77.75	85.85	92.10	95.30	96.85	98.35
ART	13.95	24.65	40.50	54.10	67.55	77.15	84.20	89.05	93.00	95.65
ART+INT	12.30	25.15	41.75	57.65	70.00	80.05	86.10	92.05	95.05	97.20
Puri & Sen	17.25	32.50	47.95	62.60	72.90	82.75	88.35	93.05	94.75	97.00
v.d.Waerden	18.65	33.85	50.45	66.40	76.20	85.10	91.45	94.65	96.45	98.25
ATS	14.65	30.95	45.85	61.70	72.15	81.65	88.15	92.85	94.80	96.75



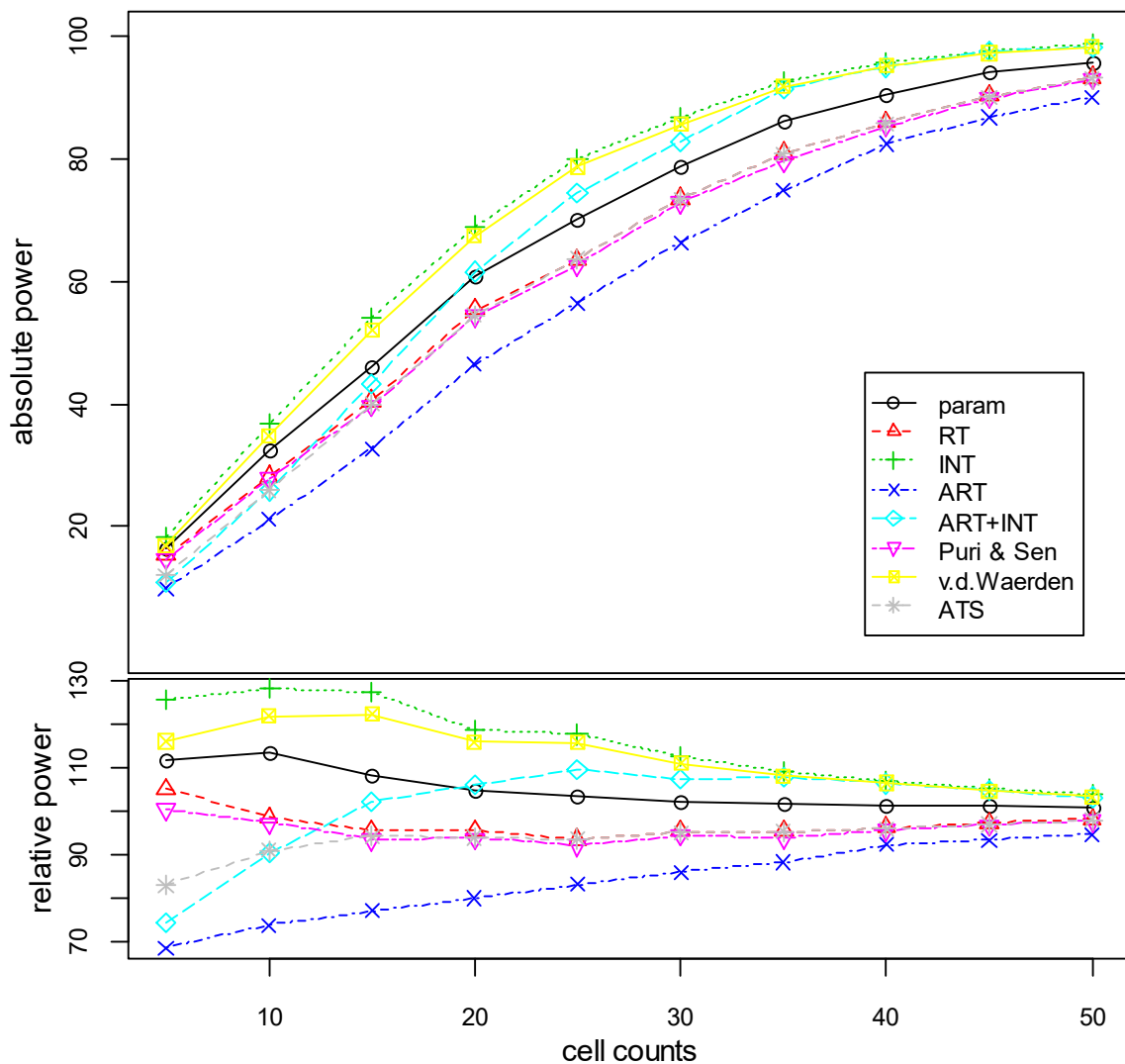
3. 4. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.10	29.85	45.20	57.50	68.75	77.60	84.85	88.85	92.70	95.85
RT	14.65	27.60	40.95	52.35	64.30	72.50	80.15	85.60	89.85	92.75
INT	16.90	34.45	51.30	64.20	75.20	83.45	88.90	92.95	96.05	98.10
ART	9.95	20.30	32.65	42.70	55.70	64.45	73.45	79.75	85.90	88.45
ART+INT	10.70	25.30	41.80	57.70	70.50	81.75	88.40	92.65	95.90	97.40
Puri & Sen	13.25	25.95	39.90	51.25	63.35	71.40	79.00	84.90	89.50	92.30
v.d.Waerden	15.10	32.40	50.40	63.35	74.05	82.50	88.25	92.40	95.75	98.00
ATS	11.90	25.05	40.10	51.45	63.35	72.25	79.25	85.25	89.60	92.85



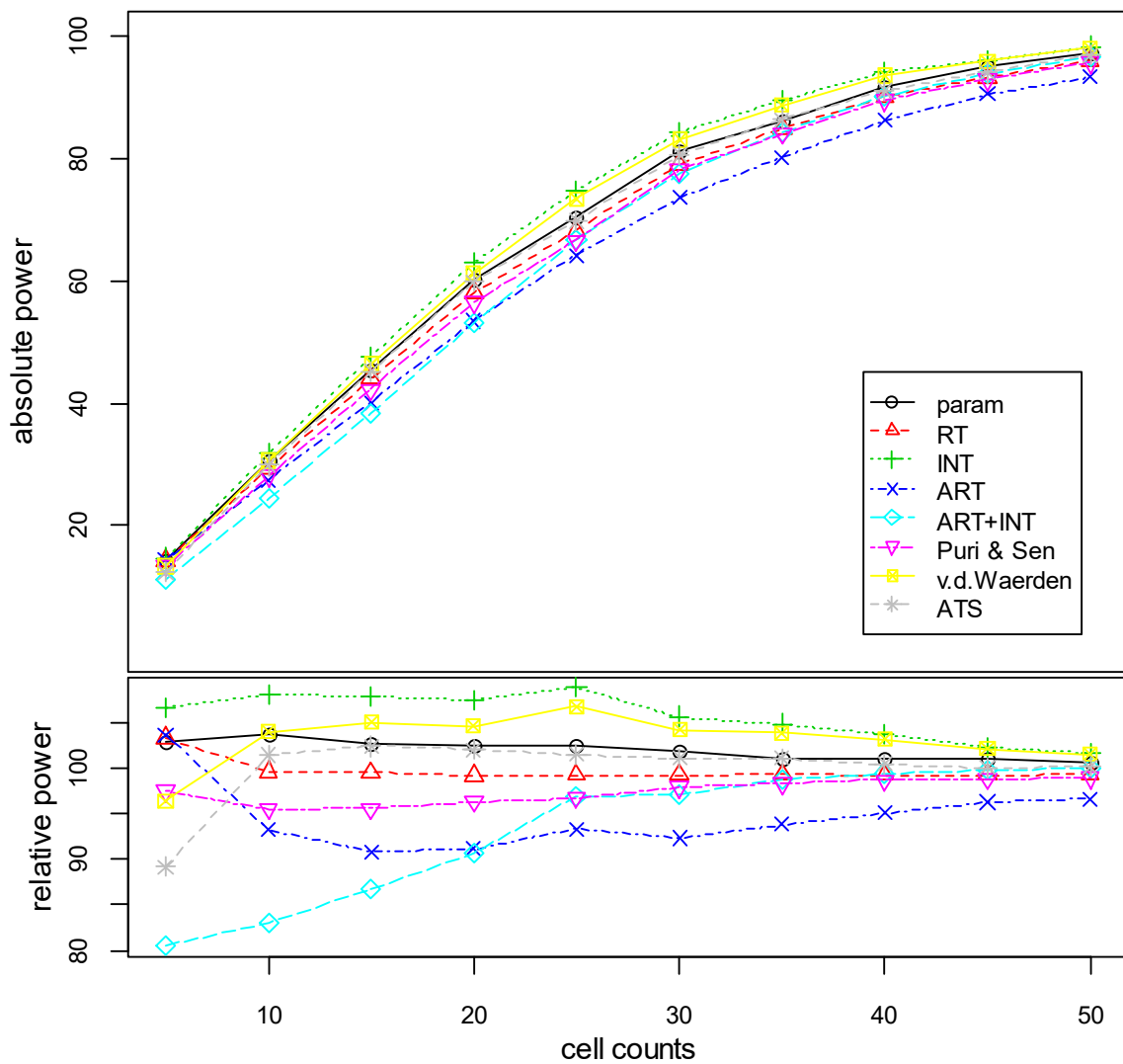
3. 4. 10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	16.30	32.40	45.90	60.70	70.15	78.70	86.10	90.50	93.90	95.70
RT	15.35	28.20	40.55	55.40	63.45	73.50	80.80	85.85	90.20	93.20
INT	18.35	36.65	54.05	68.95	79.90	86.70	92.45	95.45	97.45	98.55
ART	10.00	21.10	32.65	46.40	56.40	66.20	74.75	82.35	86.65	89.90
ART+INT	10.85	25.85	43.35	61.55	74.45	82.70	91.30	94.85	97.35	98.05
Puri & Sen	14.65	27.80	39.60	54.35	62.50	72.80	79.45	85.25	89.80	92.90
v.d.Waerden	16.95	34.85	51.90	67.30	78.65	85.55	91.65	95.05	97.15	98.15
ATS	12.10	26.00	39.95	54.45	63.60	73.30	80.75	85.60	90.00	93.00



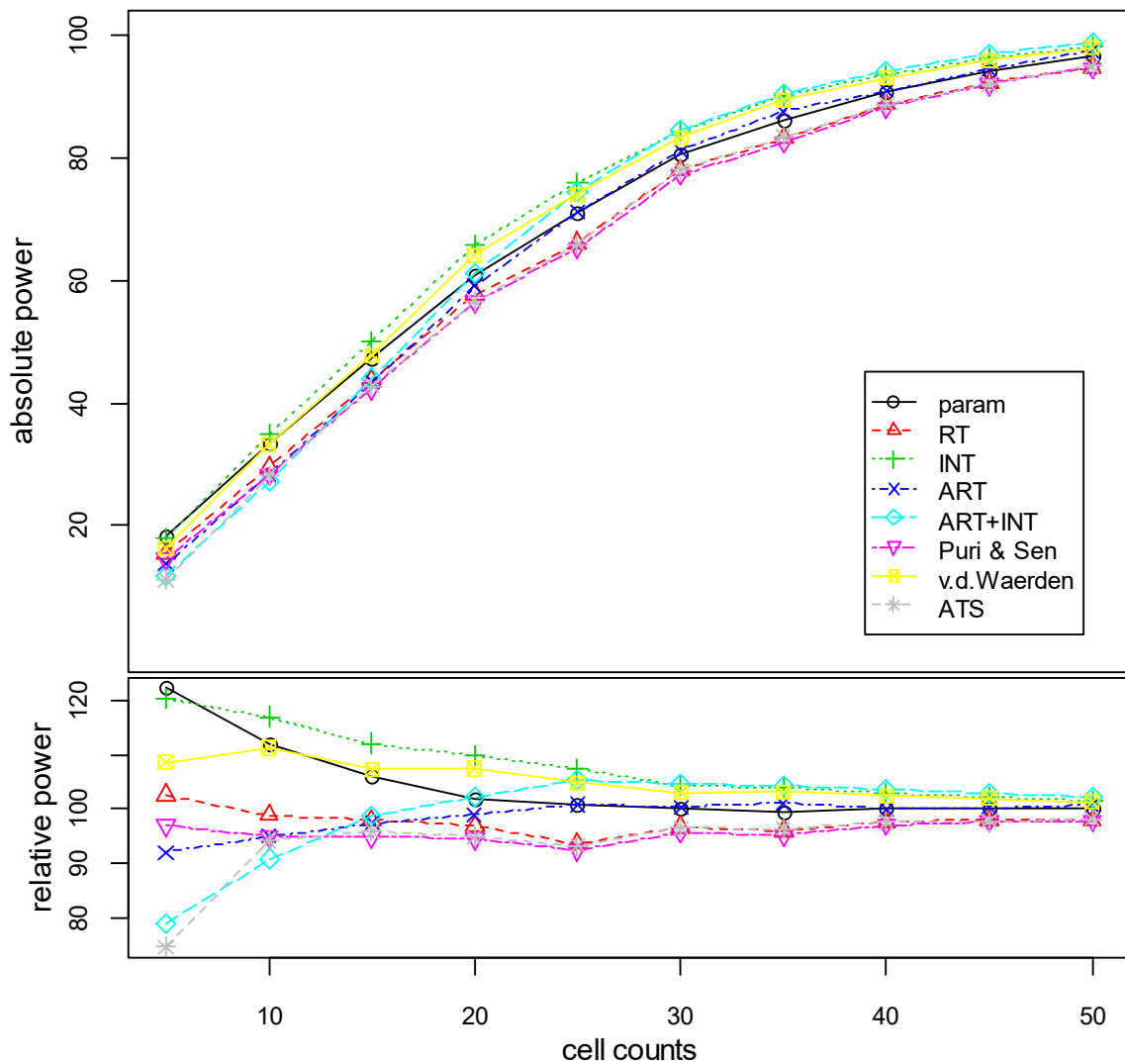
3. 4. 11 left skewed distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.25	30.50	45.30	60.05	70.35	81.10	86.20	91.45	94.90	97.15
RT	14.30	29.30	43.95	58.10	68.20	79.05	84.80	89.90	93.20	95.90
INT	14.75	31.80	47.60	62.90	74.75	84.15	89.50	93.95	95.95	98.20
ART	14.35	27.45	40.10	53.40	64.10	73.55	80.10	86.15	90.40	93.25
ART+INT	11.15	24.45	38.30	53.10	66.60	77.30	84.25	90.10	93.65	96.50
Puri & Sen	13.50	28.10	42.20	56.40	66.50	78.00	83.95	89.40	92.80	95.55
v.d.Waerden	13.35	30.60	46.35	61.25	73.35	82.95	88.65	93.45	95.85	98.00
ATS	12.35	29.85	45.20	59.75	69.75	80.50	86.30	91.00	93.90	96.70



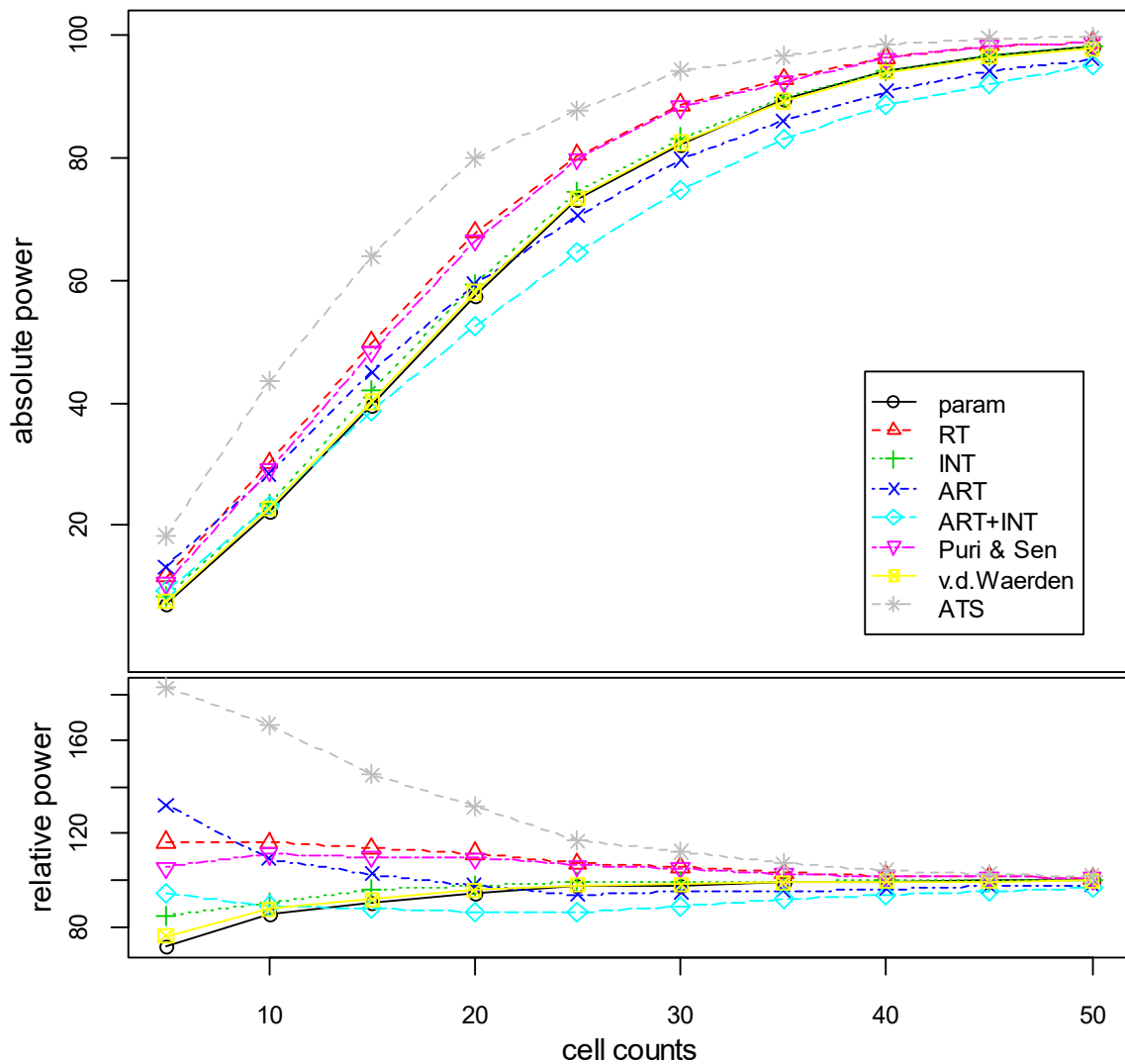
3. 4. 12 left skewed distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	18.35	33.40	47.15	60.85	71.10	80.65	86.20	90.80	94.05	96.60
RT	15.40	29.55	43.60	57.80	66.05	78.00	83.10	88.65	92.15	94.70
INT	18.05	34.95	49.90	65.60	75.75	84.25	89.90	93.45	96.20	98.00
ART	13.80	28.40	43.35	59.05	71.10	81.00	87.45	90.70	94.25	97.35
ART+INT	11.85	27.15	44.00	61.05	74.35	84.50	90.40	94.10	96.80	98.65
Puri & Sen	14.55	28.35	42.25	56.40	65.15	77.20	82.45	88.10	91.90	94.55
v.d.Waerden	16.30	33.25	47.80	64.10	74.00	83.15	89.35	92.95	95.85	97.90
ATS	11.20	28.15	42.70	56.55	65.80	77.90	83.40	88.65	91.90	94.85



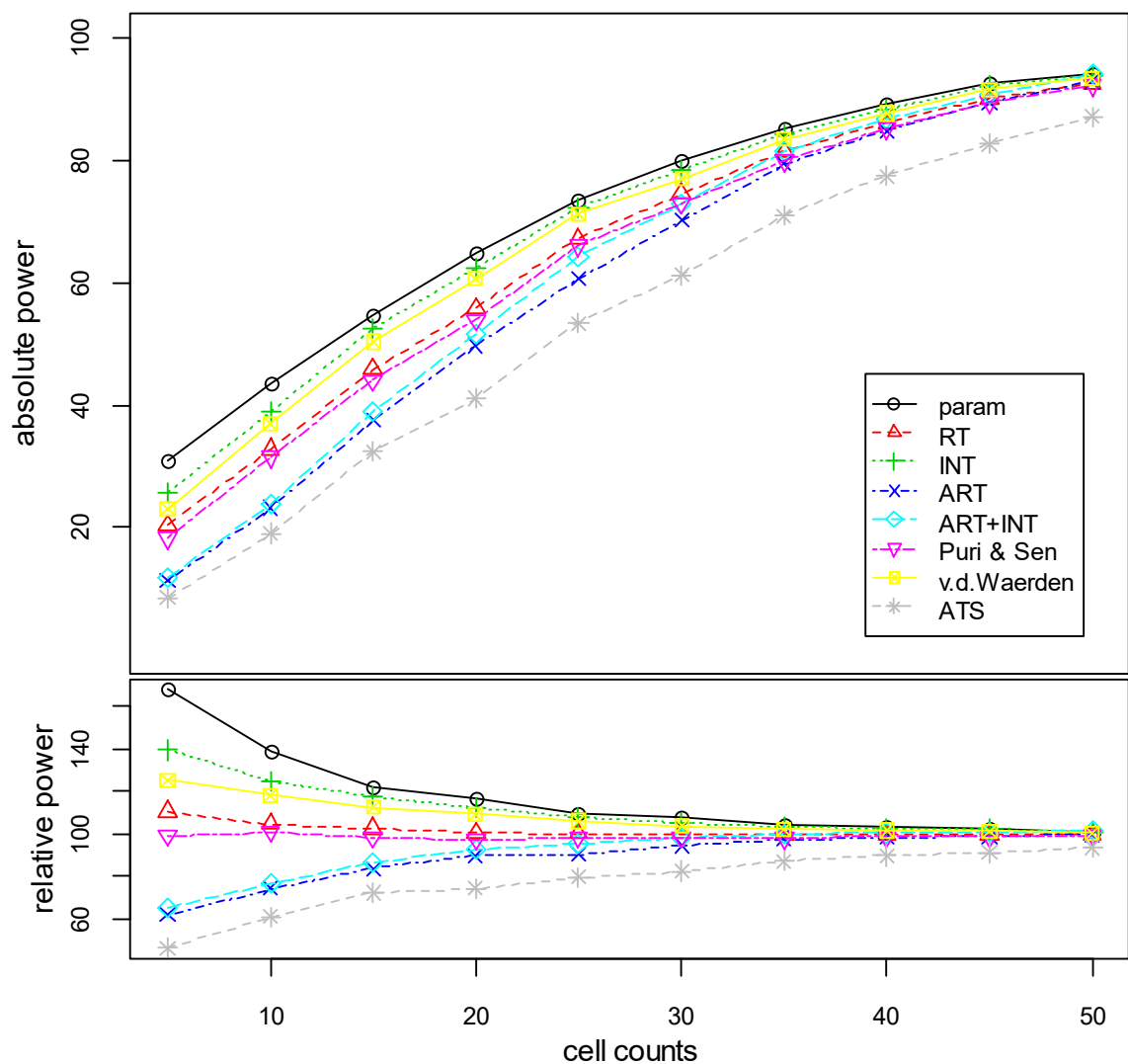
3. 4. 13 normal distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	7.15	22.30	39.50	57.45	73.15	82.05	89.30	93.90	96.60	97.95
RT	11.65	30.20	49.85	67.70	80.30	88.55	92.75	96.30	98.15	98.70
INT	8.45	23.60	42.10	59.25	74.35	83.10	89.65	94.15	96.45	98.00
ART	13.25	28.45	45.00	59.25	70.40	79.55	85.95	90.70	94.05	96.00
ART+INT	9.45	23.20	38.50	52.40	64.60	74.55	83.05	88.50	91.80	95.10
Puri & Sen	10.55	29.05	48.25	66.40	79.70	88.15	92.30	96.10	98.05	98.65
v.d.Waerden	7.60	22.80	40.15	58.00	73.35	82.35	89.15	93.80	96.30	97.70
ATS	18.30	43.50	63.75	79.85	87.70	94.10	96.45	98.25	99.40	99.55



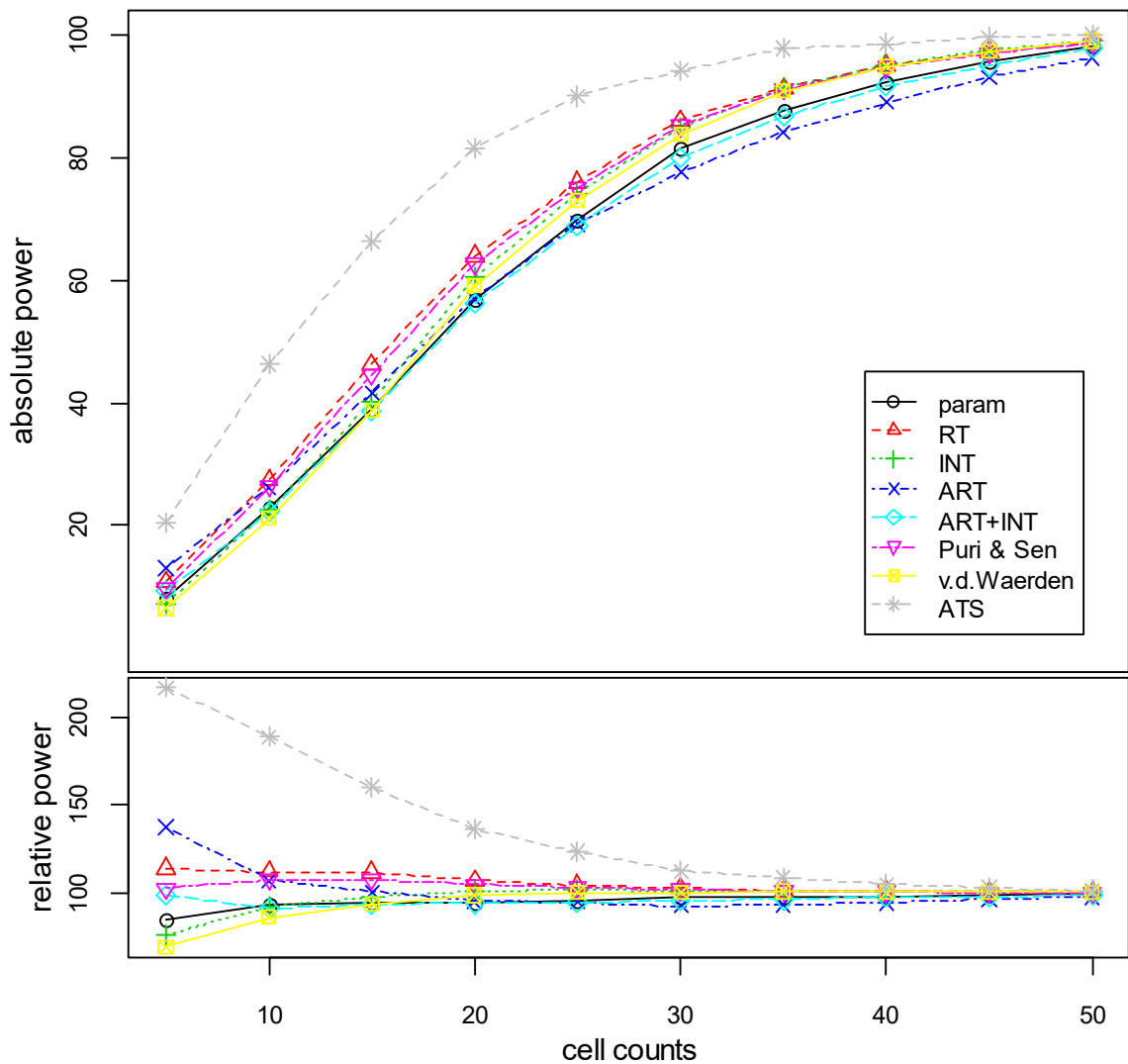
3. 4. 14 normal distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	30.90	43.50	54.55	64.65	73.35	79.75	85.00	89.10	92.65	94.00
RT	20.35	32.75	45.85	55.75	67.20	74.45	81.30	86.00	90.00	92.55
INT	25.65	39.05	52.50	62.30	72.10	78.20	84.10	88.30	92.25	93.65
ART	11.35	23.20	37.45	49.70	60.55	70.15	79.40	84.70	89.30	92.80
ART+INT	11.95	23.90	38.85	51.55	64.20	72.85	81.50	86.55	90.80	94.15
Puri & Sen	18.25	31.55	44.05	53.90	66.05	72.95	79.80	85.10	89.40	92.15
v.d.Waerden	23.05	37.00	50.35	60.55	71.20	76.95	83.35	87.60	91.50	93.35
ATS	8.50	19.05	32.35	41.10	53.35	61.20	70.90	77.35	82.55	87.05



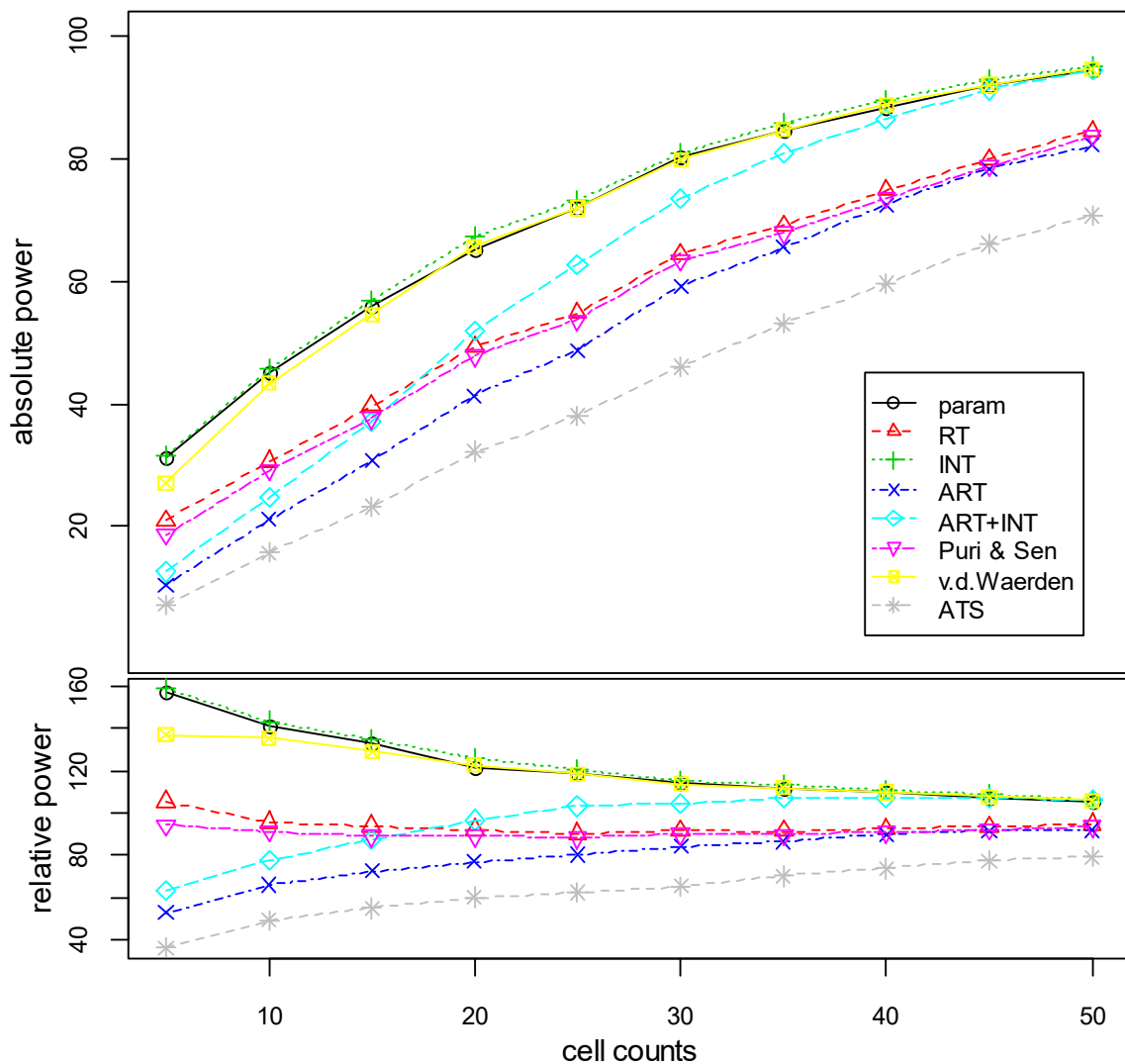
3. 4. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	8.05	22.85	39.00	56.70	69.75	81.45	87.50	92.25	95.65	98.05
RT	10.80	27.50	46.25	63.90	75.90	86.00	91.15	95.00	97.15	98.70
INT	7.20	22.60	40.30	60.60	74.15	84.70	91.35	95.05	97.40	99.00
ART	13.05	26.25	41.60	56.95	69.10	77.50	84.15	88.95	93.00	96.20
ART+INT	9.40	22.40	38.60	56.15	68.90	79.80	86.55	91.60	94.85	97.75
Puri & Sen	9.75	26.45	44.60	62.55	74.90	85.05	91.05	94.65	96.90	98.55
v.d.Waerden	6.60	21.10	38.70	59.05	72.85	83.65	90.80	94.75	97.20	98.95
ATS	20.55	46.30	66.30	81.50	89.90	94.10	97.75	98.50	99.55	99.90



3. 4. 16 left skewed distribution - unequal variances (small n_i - large s_j)

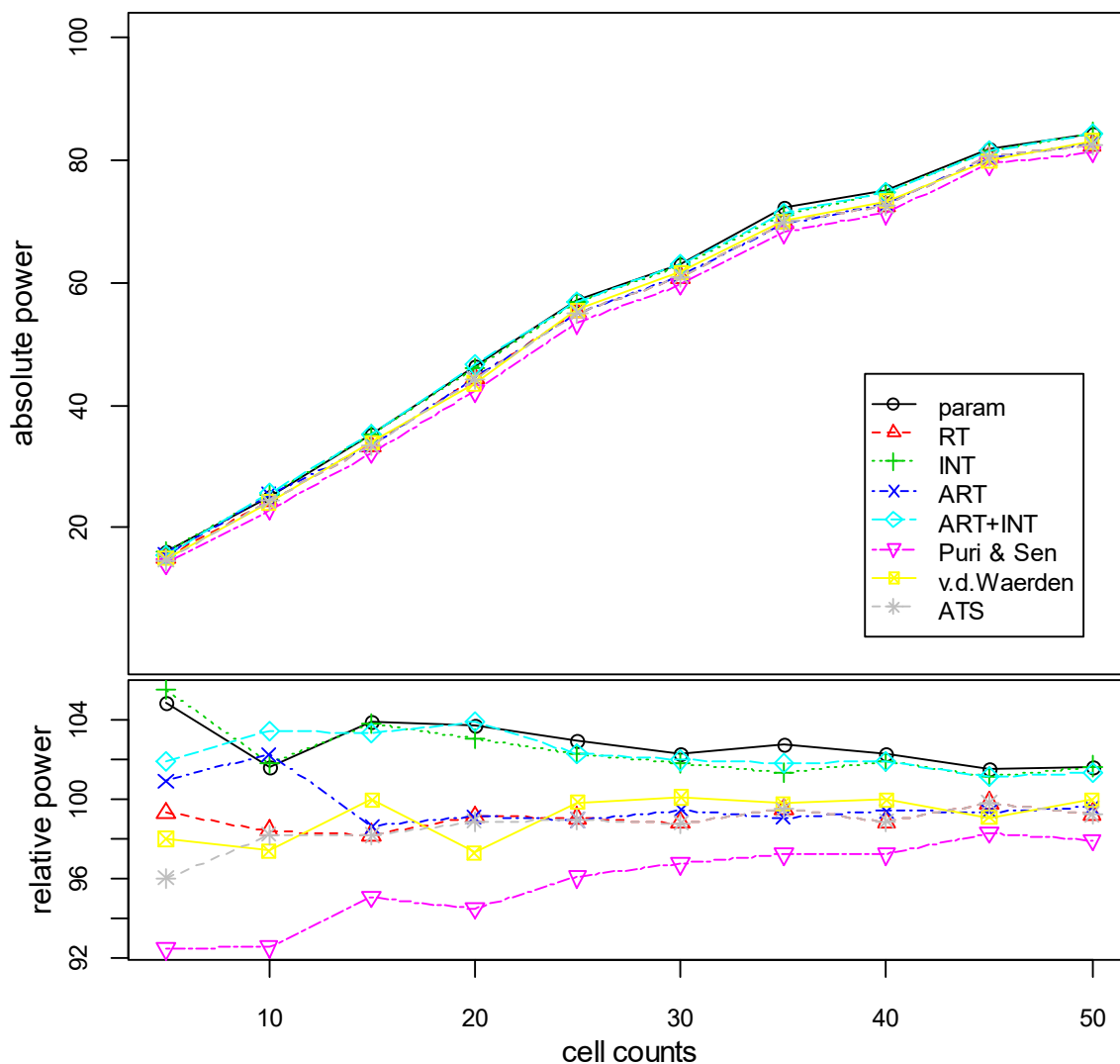
method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	31.20	45.10	56.00	65.20	72.00	80.10	84.50	88.30	91.80	94.35
RT	20.95	30.65	39.65	49.30	54.75	64.40	69.05	74.80	79.80	84.40
INT	31.45	45.80	56.85	67.20	73.10	80.85	85.75	89.30	92.80	94.85
ART	10.50	21.15	30.75	41.30	48.75	59.15	65.45	72.45	78.30	82.10
ART+INT	12.60	24.85	37.05	51.85	62.60	73.50	80.90	86.30	91.15	94.45
Puri & Sen	18.70	29.20	37.65	47.80	53.60	63.35	67.90	73.55	78.80	83.70
v.d.Waerden	27.15	43.30	54.60	65.65	71.85	79.85	84.55	88.70	91.90	94.60
ATS	7.25	15.80	23.25	32.30	38.00	46.00	53.05	59.55	66.05	70.65



5. 5. Main effect A - interaction significant (effects $a_i = 0.3*s$ $ab_{ij} = 0.4*s$ / equal n_i / # levels = $2*4$)

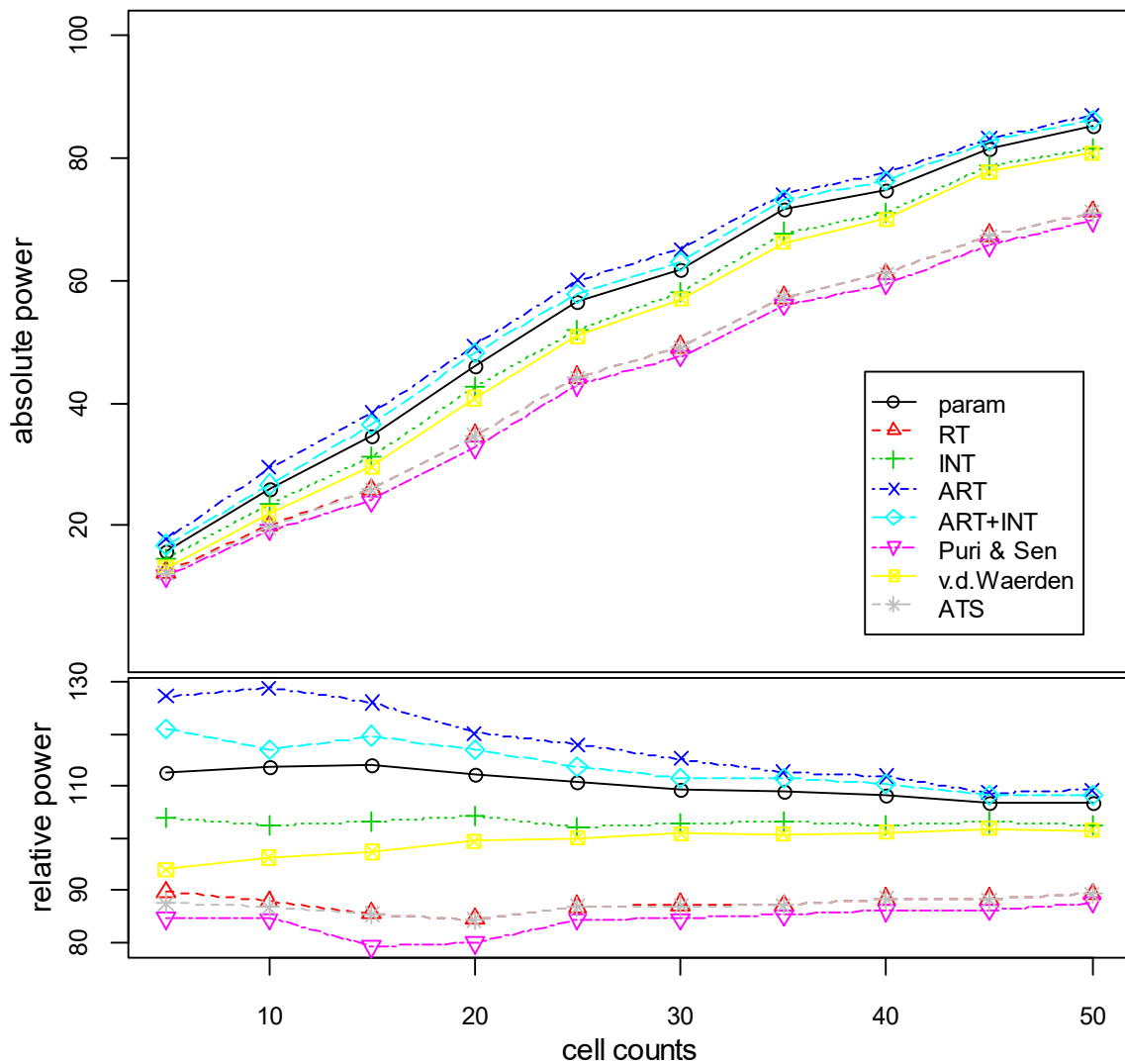
3. 5. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.10	25.20	35.30	46.40	57.20	63.00	72.05	74.90	81.80	84.35
RT	15.25	24.40	33.35	44.35	55.05	60.85	69.75	72.40	80.45	82.35
INT	16.20	25.25	35.25	46.10	56.85	62.70	71.00	74.60	81.50	84.35
ART	15.50	25.35	33.50	44.35	55.00	61.25	69.45	72.80	80.10	82.65
ART+INT	15.65	25.65	35.10	46.50	56.85	62.80	71.35	74.65	81.50	84.05
Puri & Sen	14.20	22.95	32.30	42.30	53.40	59.60	68.15	71.20	79.25	81.25
v.d.Waerden	15.05	24.15	33.95	43.55	55.50	61.65	69.95	73.20	79.85	82.95
ATS	14.75	24.35	33.35	44.25	55.00	60.85	69.75	72.40	80.45	82.35



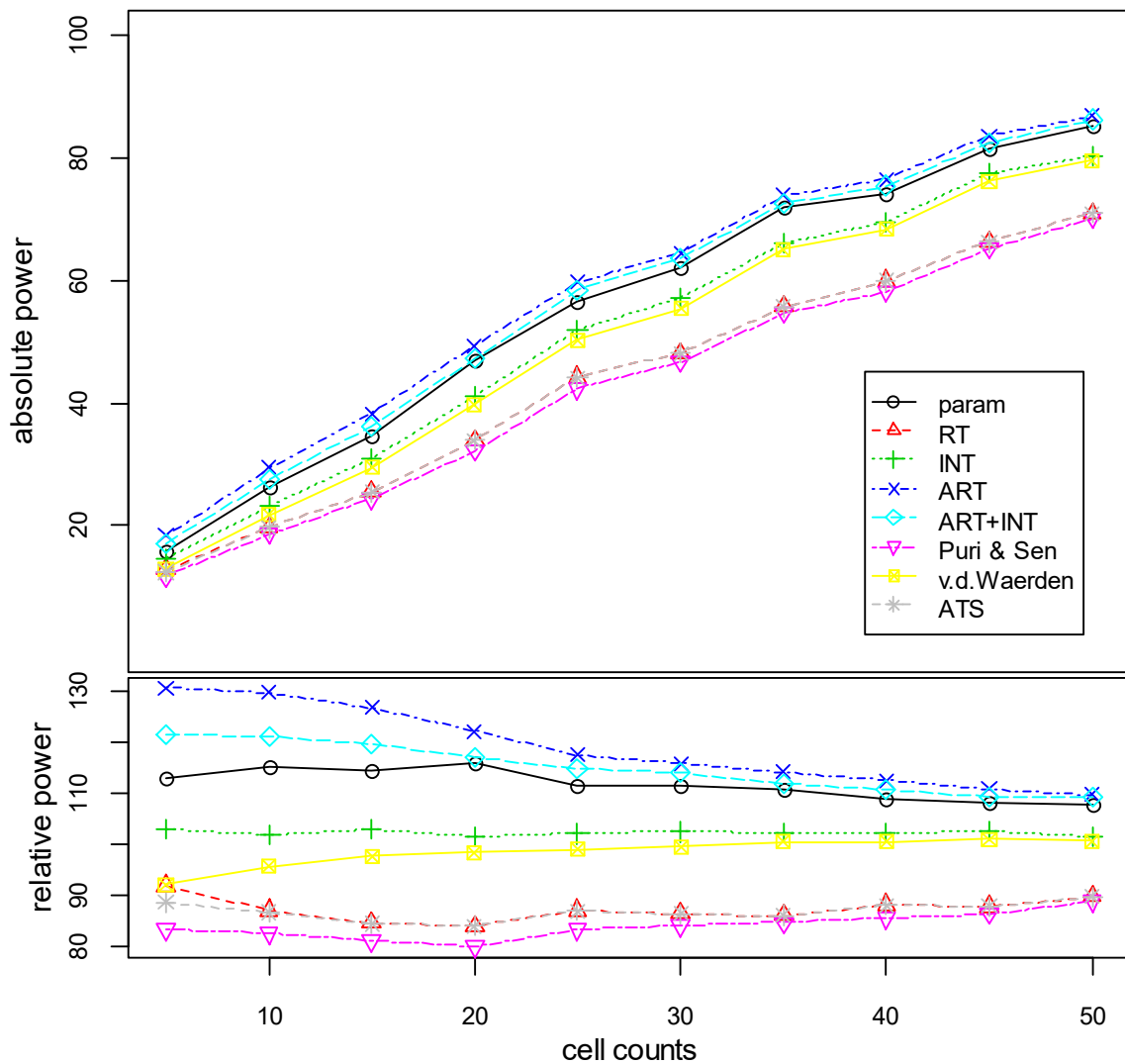
3.5.2 normal distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	15.70	25.95	34.65	46.05	56.40	61.60	71.55	74.70	81.50	85.05
RT	12.50	20.05	25.95	34.65	44.15	49.15	57.15	60.95	67.30	71.05
INT	14.50	23.40	31.30	42.75	51.95	58.00	67.70	70.85	78.55	81.55
ART	17.75	29.45	38.30	49.35	59.95	65.05	73.90	77.35	82.95	86.90
ART+INT	16.90	26.75	36.35	48.05	57.80	62.90	73.20	76.30	82.55	86.15
Puri & Sen	11.80	19.30	24.00	32.80	42.85	47.65	55.90	59.40	65.75	69.70
v.d.Waerden	13.10	22.00	29.55	40.80	50.85	56.90	66.10	69.90	77.70	80.70
ATS	12.20	19.80	25.90	34.60	44.10	49.05	57.10	60.95	67.15	71.00



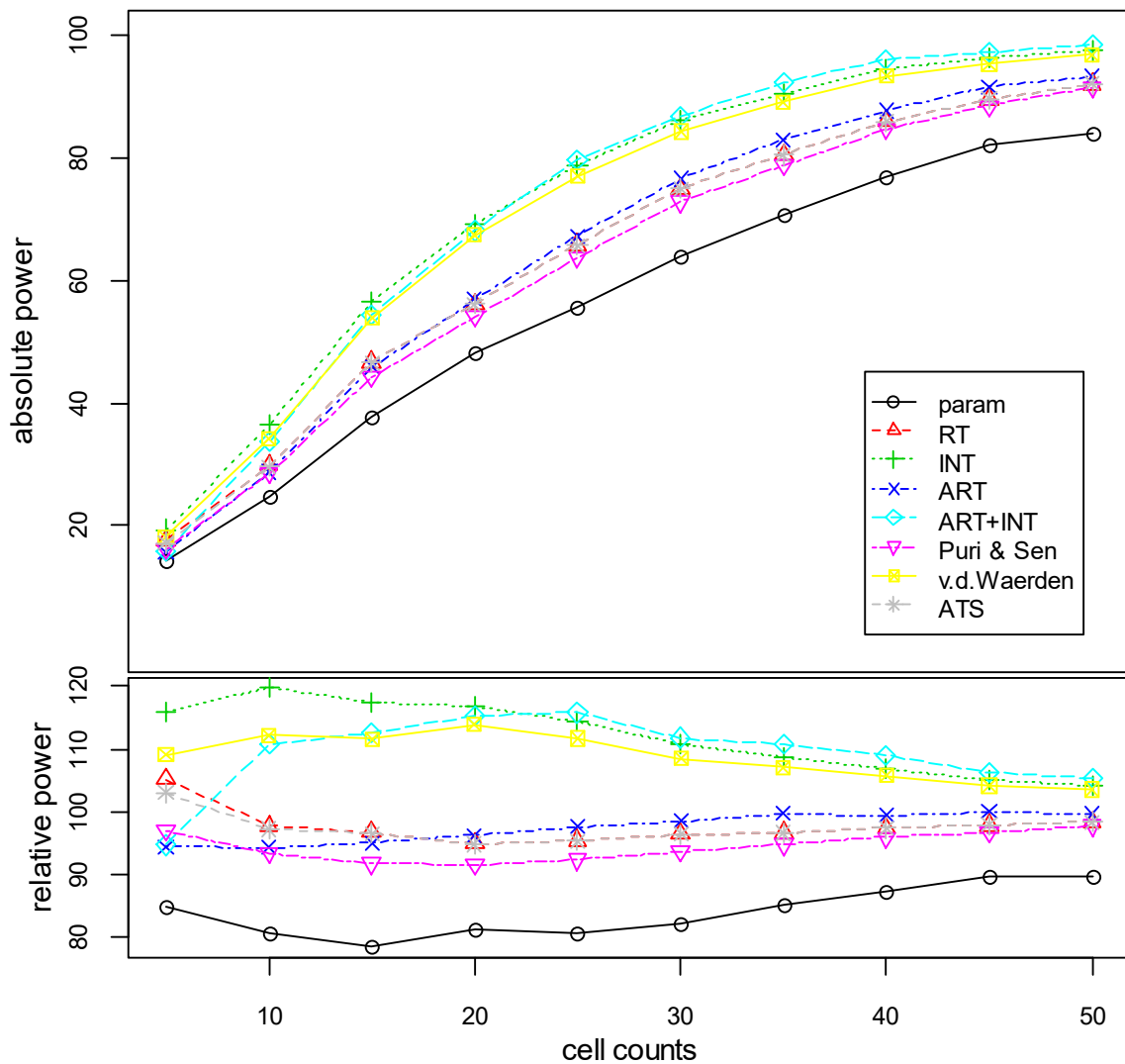
3.5.3 normal distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	15.85	26.15	34.50	46.85	56.60	61.95	71.75	74.00	81.55	85.10
RT	12.90	19.80	25.50	33.95	44.20	48.10	55.70	59.95	66.20	70.90
INT	14.45	23.15	31.00	41.00	51.80	57.00	66.05	69.50	77.30	80.25
ART	18.35	29.50	38.20	49.35	59.65	64.45	73.85	76.45	83.55	86.70
ART+INT	17.05	27.55	36.05	47.35	58.35	63.45	72.45	75.40	82.30	86.20
Puri & Sen	11.70	18.75	24.45	32.30	42.30	46.75	54.75	58.10	65.15	70.15
v.d.Waerden	12.95	21.75	29.45	39.75	50.25	55.35	65.05	68.30	76.10	79.45
ATS	12.45	19.70	25.45	33.95	44.10	48.05	55.70	59.90	66.20	70.90



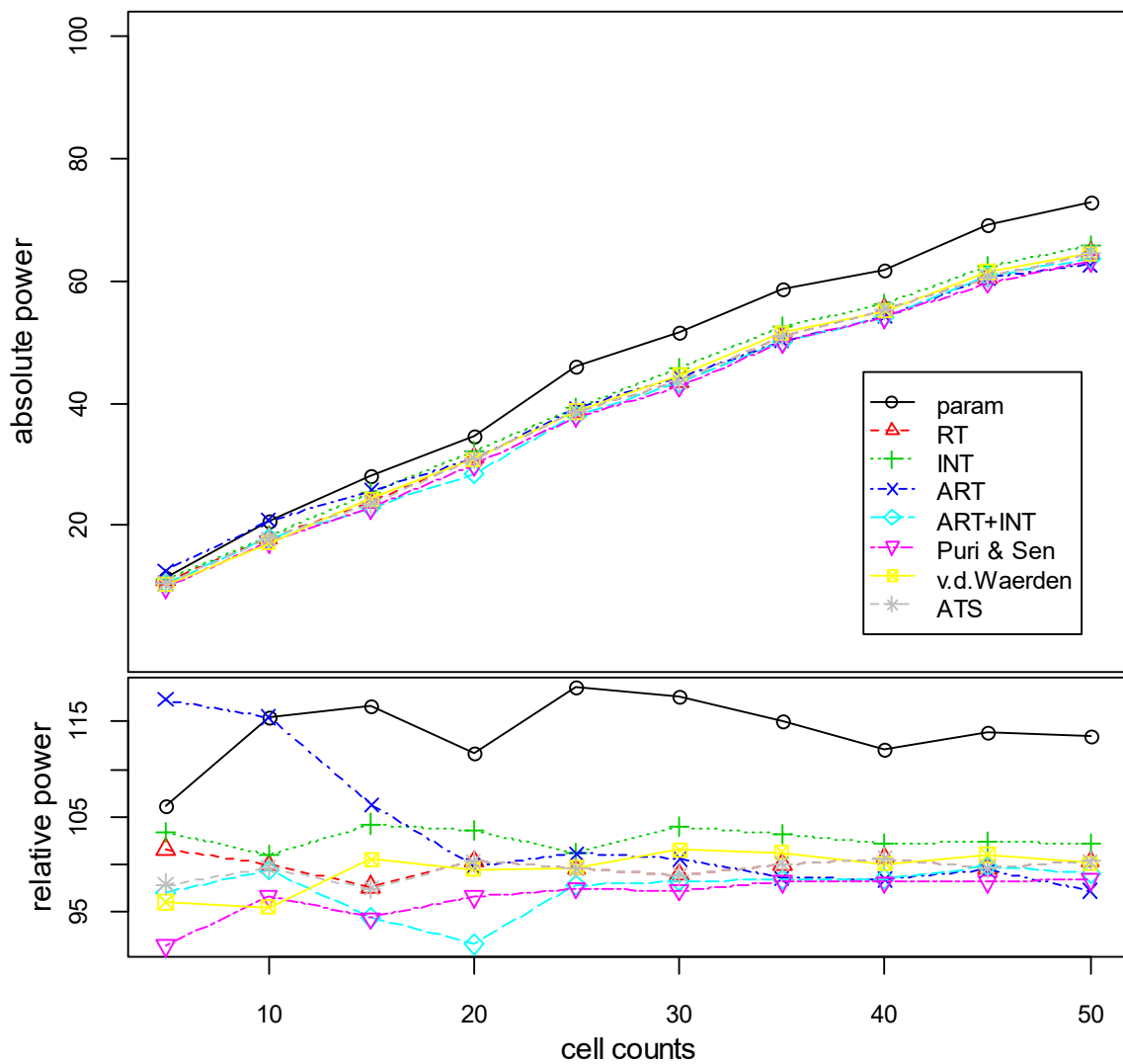
3.5.4 right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.15	24.65	37.85	48.05	55.60	63.85	70.75	76.85	82.00	83.90
RT	17.55	29.80	46.65	56.10	65.70	74.85	80.35	85.85	89.50	91.95
INT	19.35	36.50	56.55	69.05	78.75	85.95	90.40	94.25	96.10	97.30
ART	15.75	28.75	45.80	56.90	67.20	76.50	82.90	87.60	91.50	93.10
ART+INT	15.80	33.80	54.25	68.05	79.70	86.75	92.10	95.95	97.25	98.40
Puri & Sen	16.20	28.50	44.25	54.15	63.60	72.75	78.80	84.55	88.40	91.35
v.d.Waerden	18.20	34.20	53.80	67.30	76.90	84.20	89.05	93.25	95.25	96.75
ATS	17.20	29.65	46.55	56.05	65.65	74.85	80.35	85.85	89.50	91.95



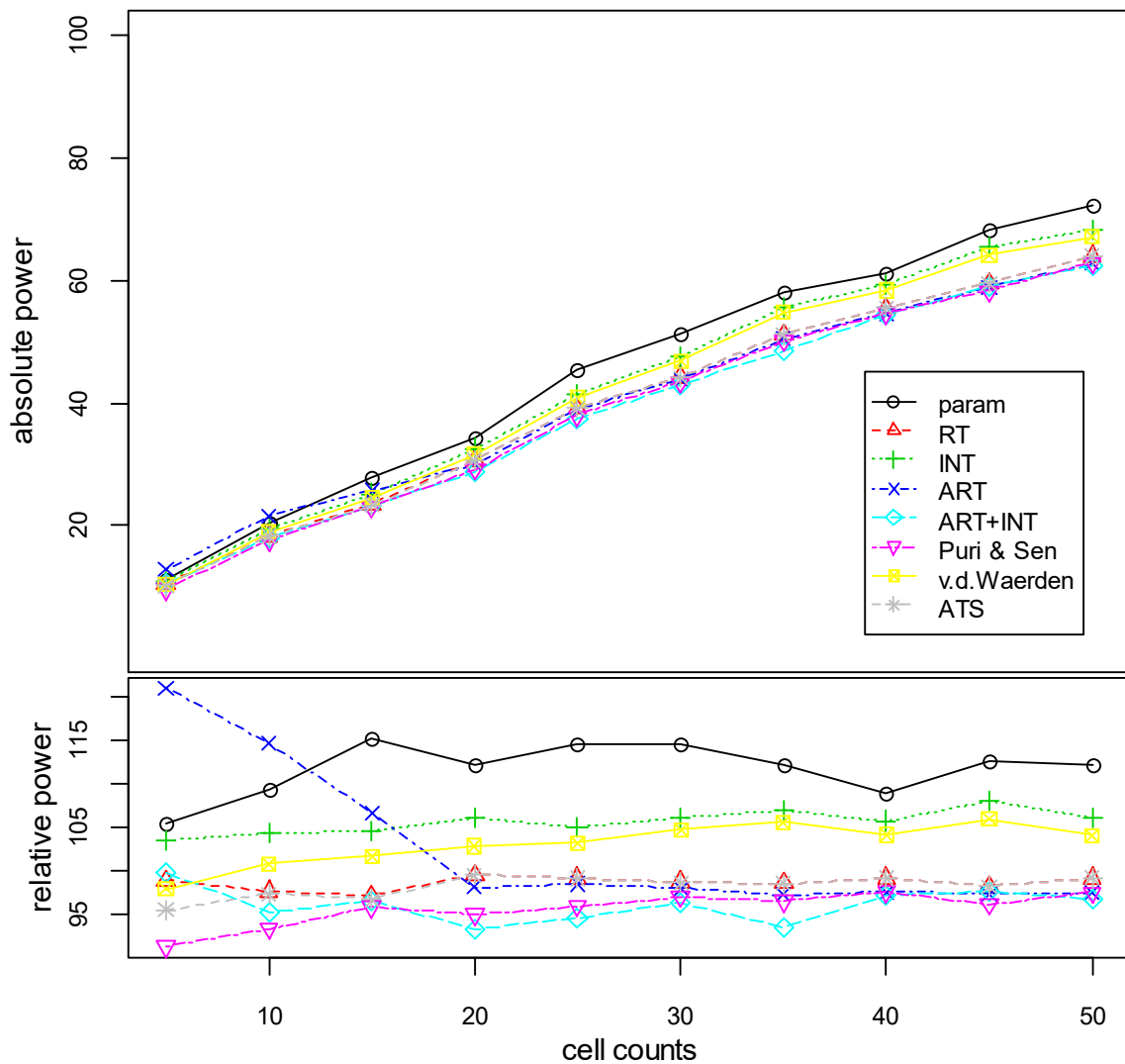
3.5.5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	11.5	20.80	28.30	34.55	45.90	51.65	58.50	61.65	69.20	72.95
RT	11.0	18.00	23.70	31.05	38.55	43.45	50.90	55.35	60.55	64.50
INT	11.2	18.20	25.30	32.05	39.20	45.70	52.45	56.20	62.25	65.65
ART	12.7	20.80	25.80	30.90	39.15	44.20	50.15	54.10	60.40	62.50
ART+INT	10.5	17.90	22.90	28.35	37.90	43.15	50.05	54.15	60.65	63.70
Puri & Sen	9.9	17.40	22.90	29.90	37.75	42.75	49.95	53.95	59.70	63.25
v.d.Waerden	10.4	17.20	24.40	30.80	38.60	44.60	51.50	55.00	61.40	64.35
ATS	10.6	17.95	23.65	31.05	38.55	43.45	50.90	55.35	60.55	64.50



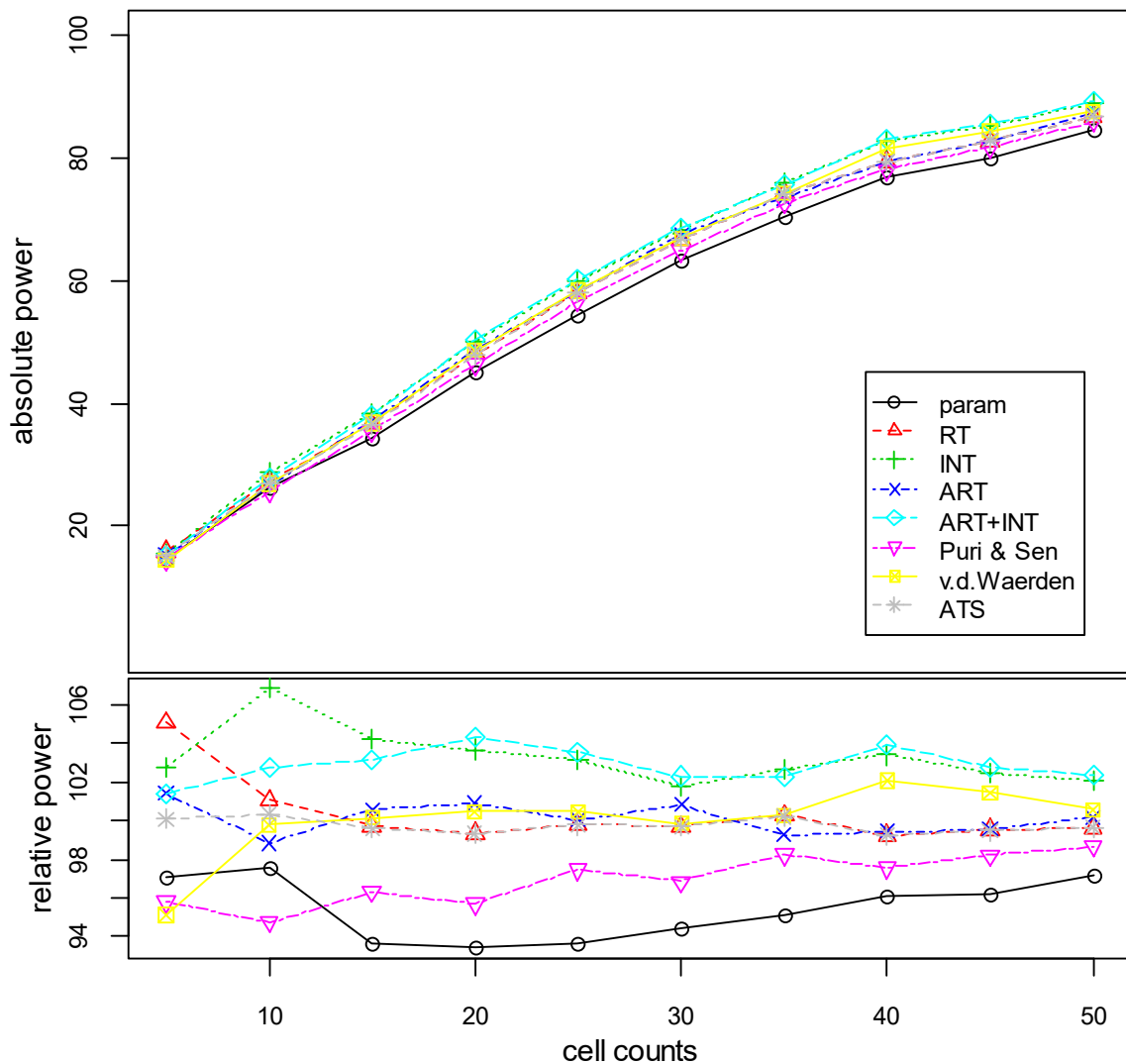
3.5.6 exponential distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	11.20	20.55	27.75	34.45	45.25	51.20	58.15	61.00	68.15	72.25
RT	10.50	18.35	23.40	30.60	39.15	44.15	51.10	55.50	59.45	63.85
INT	11.00	19.60	25.20	32.60	41.45	47.40	55.45	59.20	65.35	68.30
ART	12.85	21.55	25.70	30.15	38.90	43.80	50.40	54.60	58.90	62.75
ART+INT	10.60	17.90	23.25	28.65	37.35	43.05	48.45	54.45	59.05	62.25
Puri & Sen	9.70	17.55	23.10	29.20	37.90	43.40	50.05	54.65	58.20	62.80
v.d.Waerden	10.40	18.95	24.50	31.60	40.75	46.80	54.75	58.30	64.10	67.00
ATS	10.15	18.30	23.30	30.60	39.15	44.10	51.10	55.50	59.45	63.85



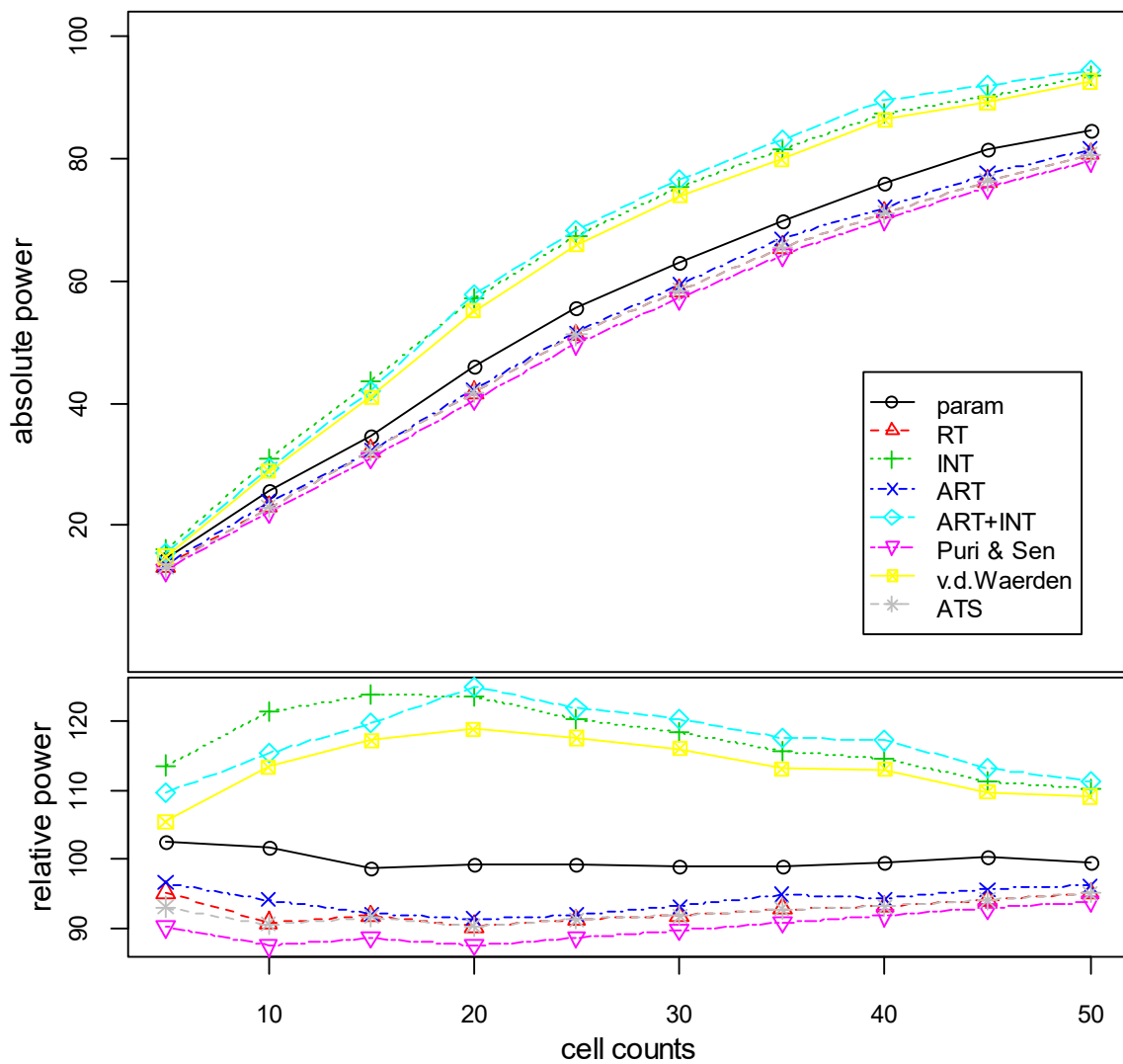
3.5.7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.65	26.30	34.40	45.15	54.40	63.20	70.35	76.70	80.00	84.55
RT	15.85	27.25	36.65	48.00	57.95	66.70	74.15	79.25	82.75	86.70
INT	15.50	28.80	38.30	50.10	59.90	68.10	75.90	82.55	85.20	88.80
ART	15.30	26.65	36.95	48.75	58.10	67.45	73.40	79.40	82.75	87.15
ART+INT	15.30	27.70	37.90	50.40	60.15	68.45	75.60	83.00	85.40	89.05
Puri & Sen	14.45	25.55	35.40	46.25	56.60	64.80	72.65	77.90	81.65	85.85
v.d.Waerden	14.35	26.90	36.80	48.55	58.35	66.80	74.15	81.50	84.35	87.50
ATS	15.10	27.05	36.60	48.00	57.95	66.70	74.10	79.25	82.70	86.70



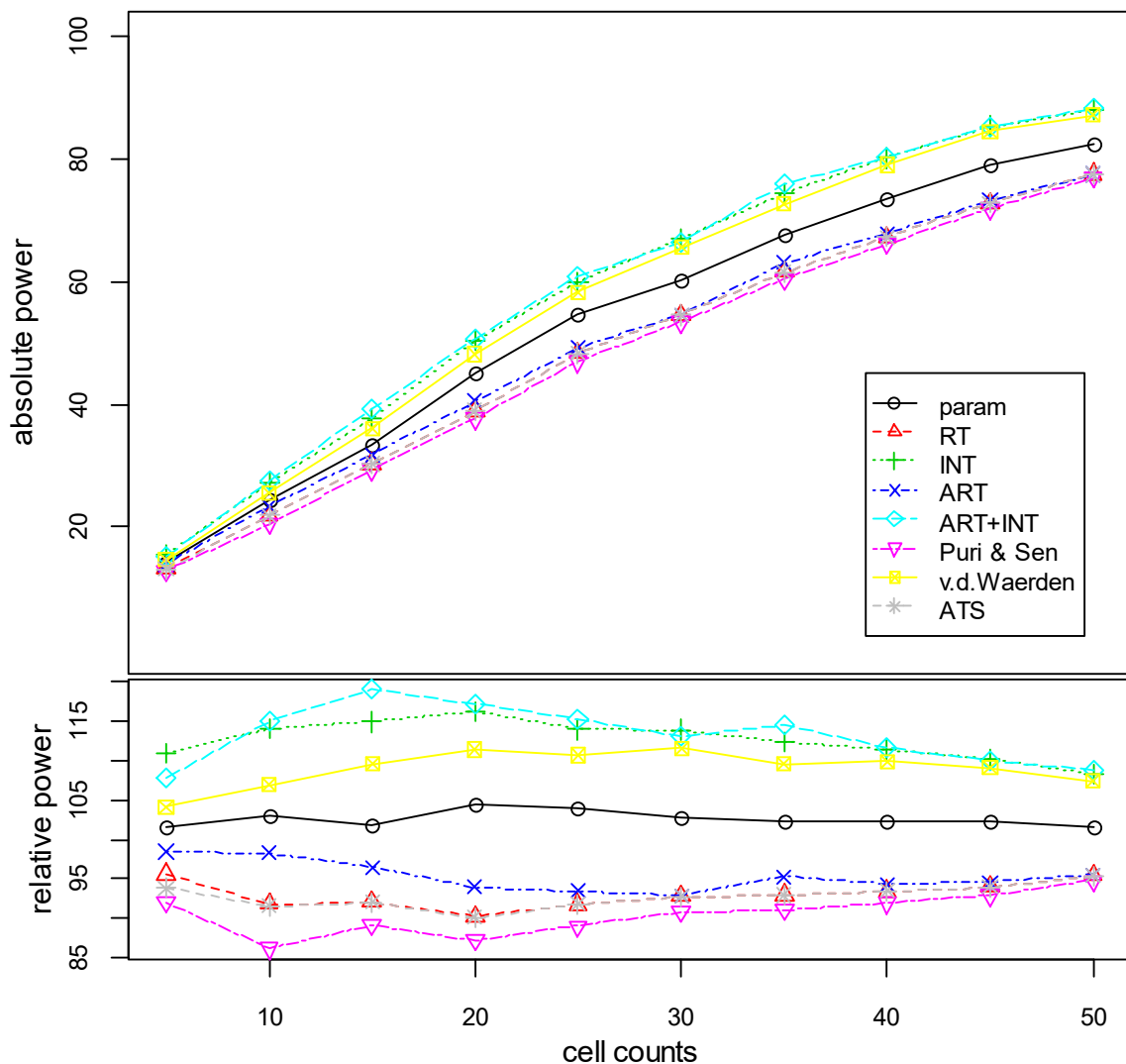
3.5.8 uniform distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.50	25.80	34.60	45.95	55.55	62.90	69.85	75.90	81.45	84.45
RT	13.45	23.05	32.15	41.75	51.10	58.40	65.45	71.05	76.25	80.65
INT	16.05	30.85	43.40	57.20	67.35	75.25	81.50	87.30	90.20	93.45
ART	13.65	23.90	32.25	42.25	51.50	59.25	66.90	71.85	77.50	81.50
ART+INT	15.50	29.30	41.95	57.75	68.25	76.50	82.95	89.40	91.75	94.45
Puri & Sen	12.75	22.20	31.05	40.50	49.65	57.10	64.10	70.05	75.25	79.55
v.d.Waerden	14.90	28.80	41.05	55.00	65.85	73.80	79.80	86.25	89.00	92.50
ATS	13.15	23.00	32.10	41.75	51.10	58.40	65.45	71.05	76.25	80.65



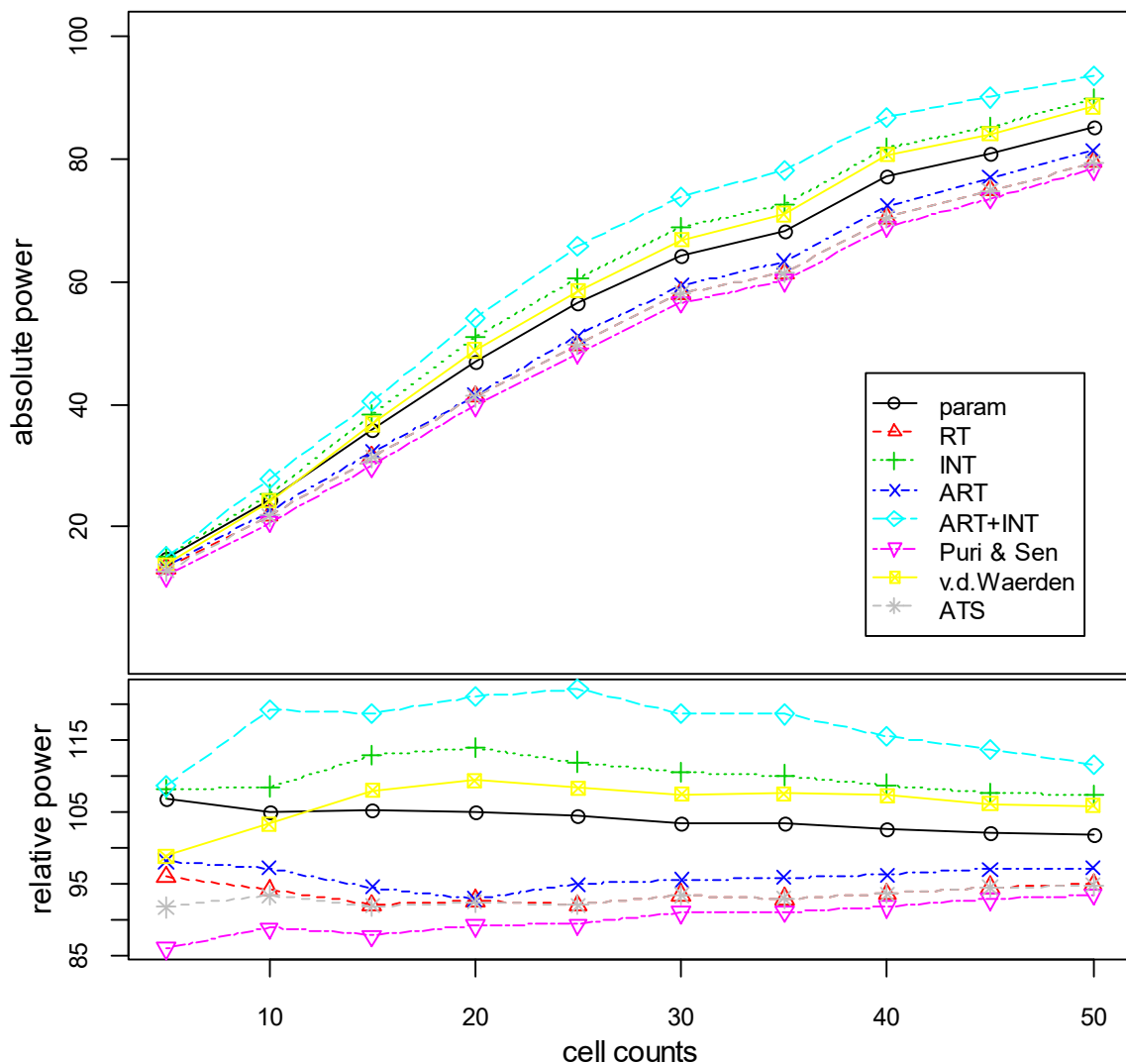
3.5.9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.30	24.60	33.50	45.10	54.70	60.30	67.70	73.50	79.10	82.40
RT	13.45	21.95	30.30	39.00	48.30	54.50	61.55	67.15	72.70	77.40
INT	15.60	27.25	37.80	50.25	59.95	66.90	74.45	80.05	85.25	87.85
ART	13.85	23.50	31.75	40.60	49.20	54.55	63.10	67.75	73.15	77.45
ART+INT	15.15	27.50	39.15	50.65	60.65	66.45	75.85	80.20	85.05	88.15
Puri & Sen	12.95	20.60	29.35	37.70	46.85	53.35	60.35	66.10	71.90	76.85
v.d.Waerden	14.65	25.55	36.05	48.15	58.25	65.55	72.55	78.95	84.40	87.10
ATS	13.20	21.90	30.30	38.95	48.30	54.50	61.55	67.15	72.70	77.40



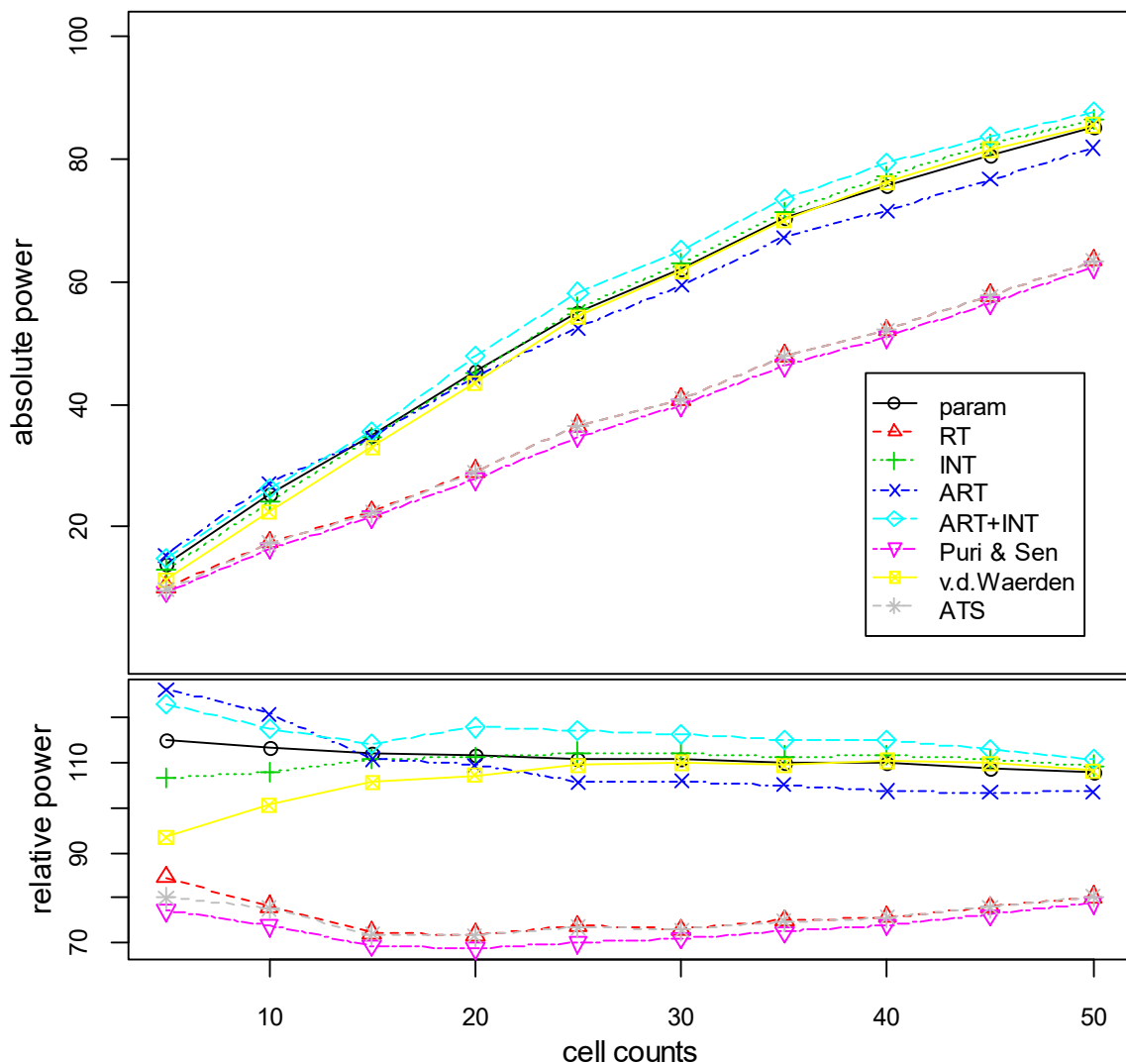
3.5.10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.95	24.60	35.85	46.80	56.35	64.25	68.20	77.10	80.90	85.25
RT	13.45	22.05	31.35	41.35	49.65	58.05	61.30	70.35	74.80	79.40
INT	15.15	25.40	38.40	50.80	60.35	68.65	72.60	81.70	85.10	89.70
ART	13.75	22.75	32.20	41.45	51.20	59.35	63.25	72.25	76.85	81.30
ART+INT	15.20	27.90	40.40	53.95	65.75	73.75	78.15	86.65	89.90	93.35
Puri & Sen	12.05	20.80	29.90	39.80	48.20	56.55	60.10	68.95	73.50	78.20
v.d.Waerden	13.85	24.20	36.75	48.80	58.40	66.75	70.95	80.60	84.00	88.50
ATS	12.85	21.85	31.30	41.25	49.65	58.05	61.30	70.35	74.80	79.35



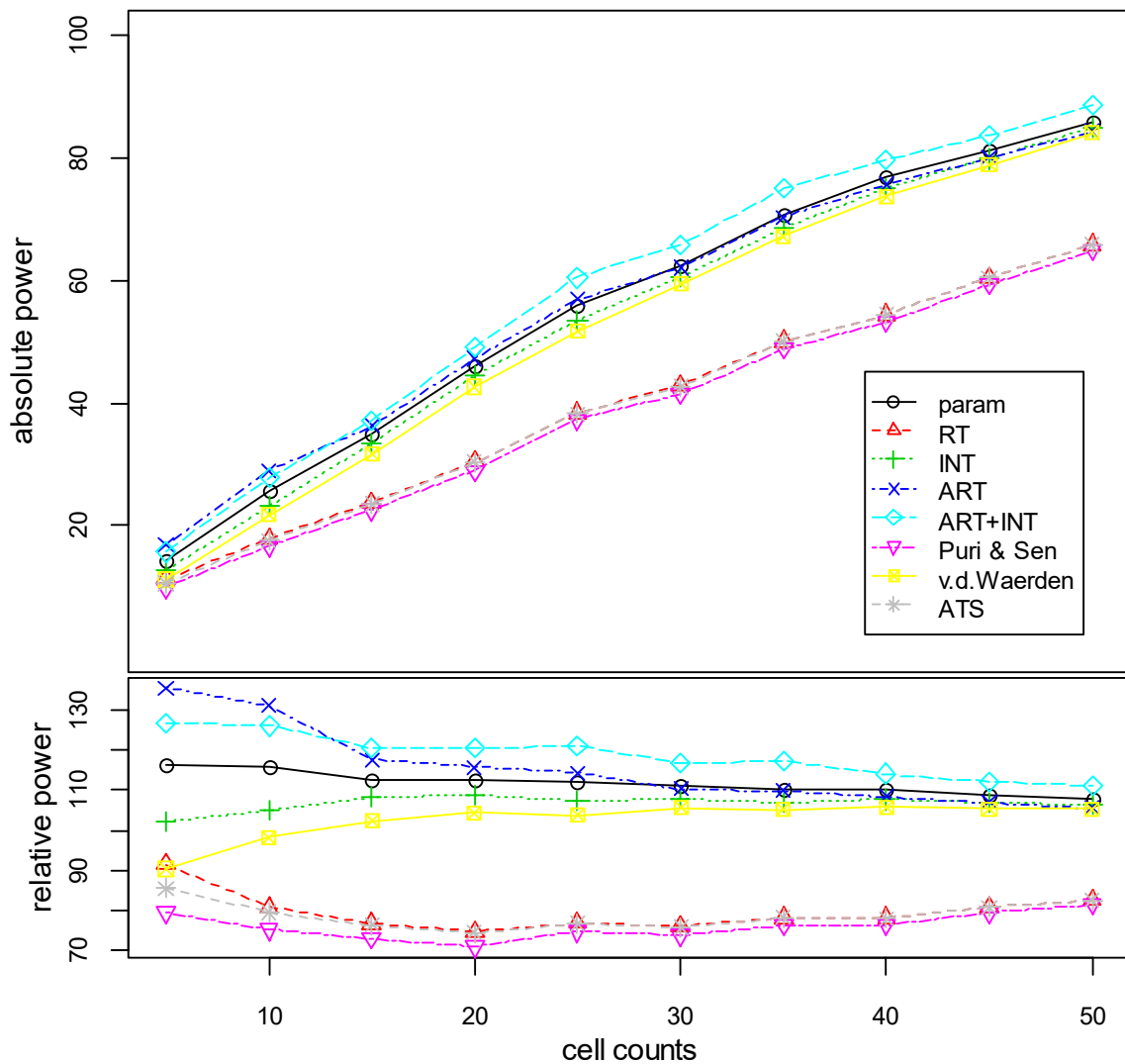
3. 5. 11 left skewed distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.05	25.40	34.90	45.25	55.05	62.15	70.40	75.70	80.45	85.10
RT	10.30	17.50	22.50	29.10	36.55	40.80	47.90	52.10	57.75	63.35
INT	13.00	24.15	34.55	45.20	55.70	62.85	71.20	77.05	82.20	86.35
ART	15.40	27.10	34.55	44.40	52.40	59.35	67.15	71.45	76.55	81.75
ART+INT	15.00	26.35	35.55	47.80	58.15	65.20	73.45	79.25	83.65	87.55
Puri & Sen	9.40	16.55	21.60	27.85	34.70	39.80	46.25	50.90	56.45	62.25
v.d.Waerden	11.40	22.55	32.95	43.45	54.25	61.60	69.90	76.10	81.40	85.45
ATS	9.75	17.40	22.40	29.00	36.40	40.75	47.80	52.05	57.65	63.35



3. 5. 12 left skewed distribution - unequal variances (on A and B)

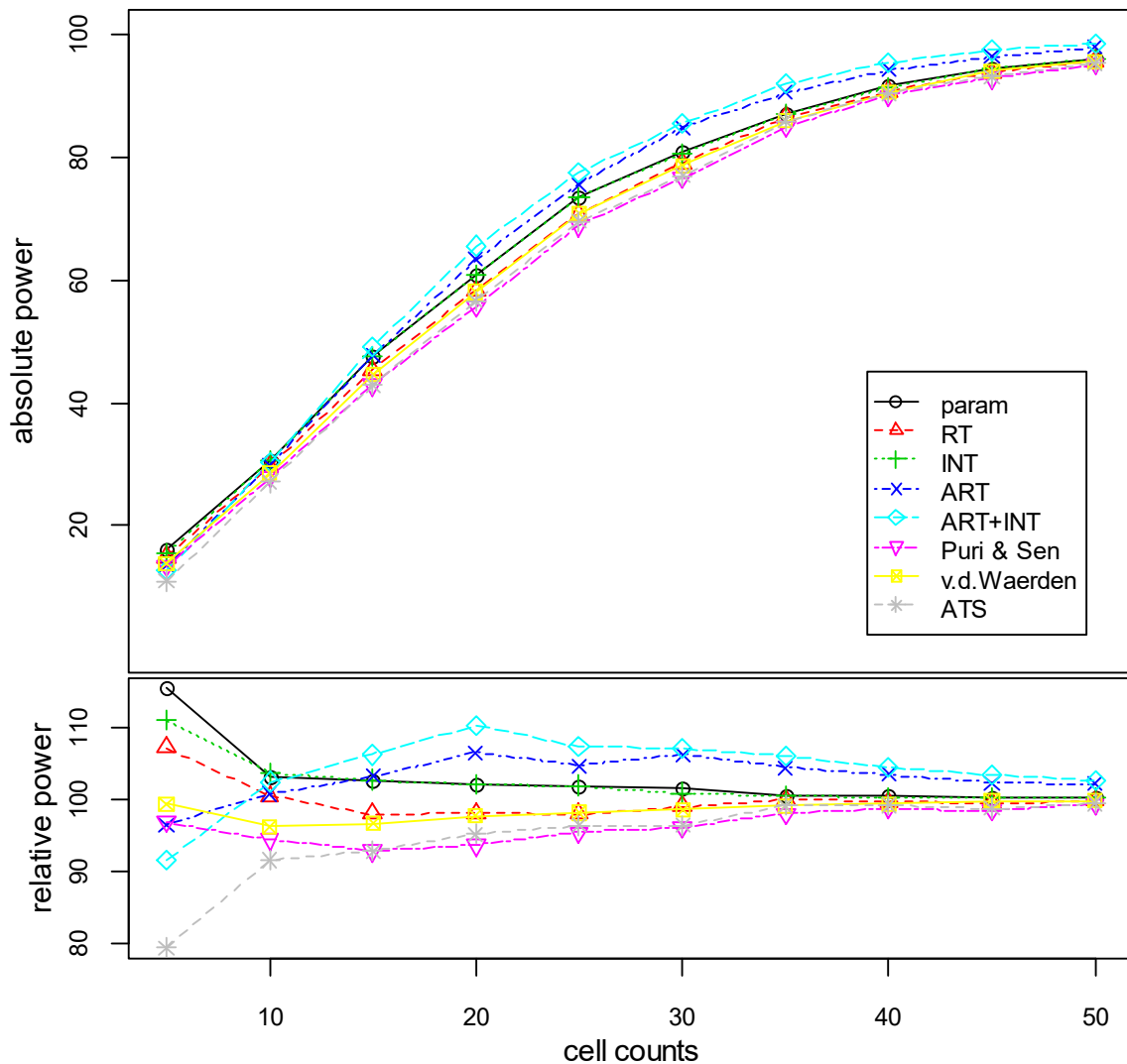
method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.40	25.65	34.80	45.90	55.80	62.35	70.60	76.75	81.10	85.75
RT	11.35	17.90	23.70	30.45	38.30	42.80	50.00	54.40	60.40	65.75
INT	12.65	23.25	33.40	44.35	53.45	60.60	68.40	74.95	79.75	84.80
ART	16.80	29.00	36.30	47.25	56.90	62.05	70.30	75.55	79.95	84.20
ART+INT	15.70	27.90	37.20	49.20	60.35	65.75	74.95	79.50	83.70	88.40
Puri & Sen	9.85	16.65	22.55	28.95	37.25	41.50	48.90	53.15	59.40	64.95
v.d.Waerden	11.20	21.75	31.60	42.60	51.70	59.40	67.20	73.65	78.75	83.95
ATS	10.60	17.60	23.55	30.40	38.20	42.60	50.00	54.35	60.40	65.75



3. 6. Main effect A - interaction significant (effects $a_i = 0.3*s$ $ab_{ij} = 0.4*s$ / unequal n_i / # levels = $4*5$)

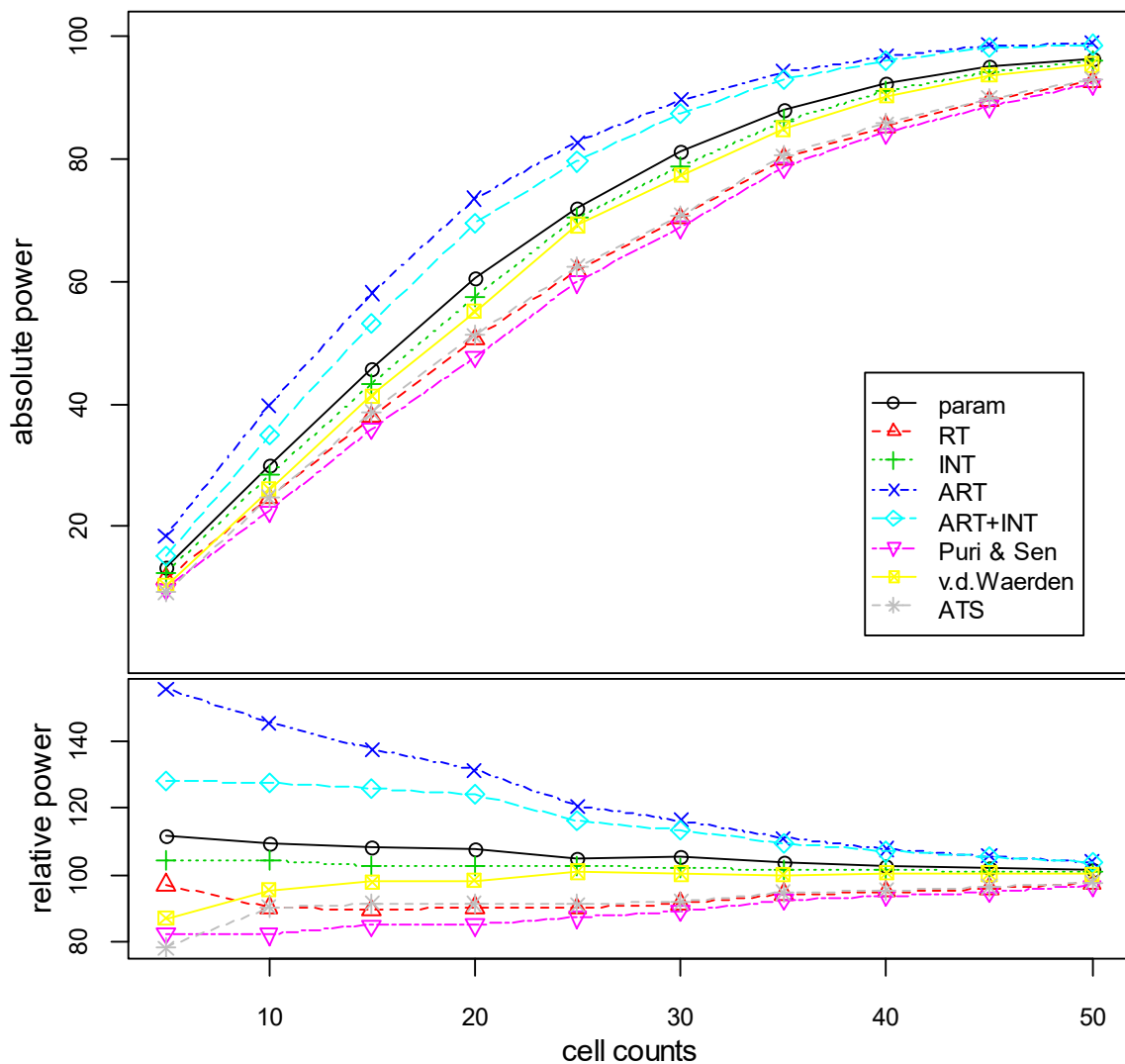
3. 6. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.10	30.55	47.40	60.70	73.45	80.90	87.05	91.60	94.50	95.90
RT	14.95	29.75	45.25	58.25	70.65	78.95	86.45	90.65	93.65	95.60
INT	15.50	30.70	47.45	60.70	73.50	80.45	86.90	91.30	94.45	95.90
ART	13.45	29.85	47.70	63.30	75.50	84.75	90.40	94.20	96.35	97.80
ART+INT	12.75	30.35	49.05	65.55	77.40	85.45	91.90	95.20	97.30	98.35
Puri & Sen	13.50	27.95	42.85	55.65	68.75	76.60	84.85	89.90	92.75	95.10
v.d.Waerden	13.85	28.50	44.60	58.05	70.75	78.60	85.80	90.50	93.95	95.55
ATS	11.05	27.10	42.85	56.55	69.45	76.85	85.80	90.30	93.00	95.20



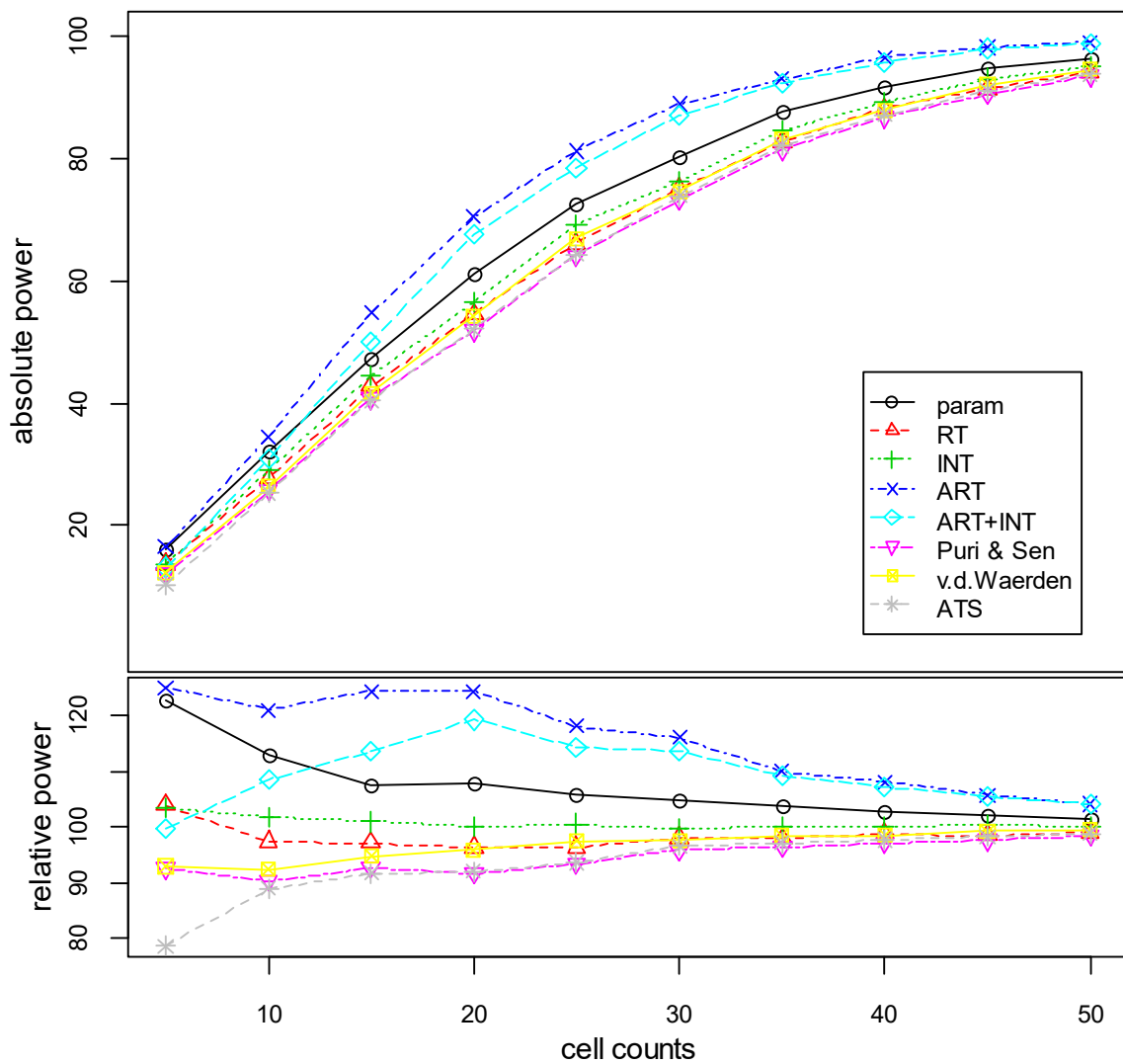
3. 6. 2 normal distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	13.30	29.95	45.65	60.35	71.90	81.10	87.85	92.10	95.05	96.35
RT	11.60	24.70	37.80	50.55	61.70	70.30	79.90	85.20	89.35	92.55
INT	12.45	28.55	43.30	57.40	70.40	78.70	86.20	91.00	94.05	95.80
ART	18.55	39.75	58.00	73.40	82.55	89.55	94.10	96.65	98.40	98.80
ART+INT	15.30	34.90	53.10	69.45	79.45	87.40	92.90	95.90	98.05	98.50
Puri & Sen	9.85	22.50	35.90	47.65	59.85	68.75	78.55	84.10	88.50	92.10
v.d.Waerden	10.40	26.10	41.35	55.00	69.10	77.25	84.80	90.15	93.55	95.30
ATS	9.35	24.75	38.65	51.15	62.45	70.75	80.40	85.60	89.85	92.90



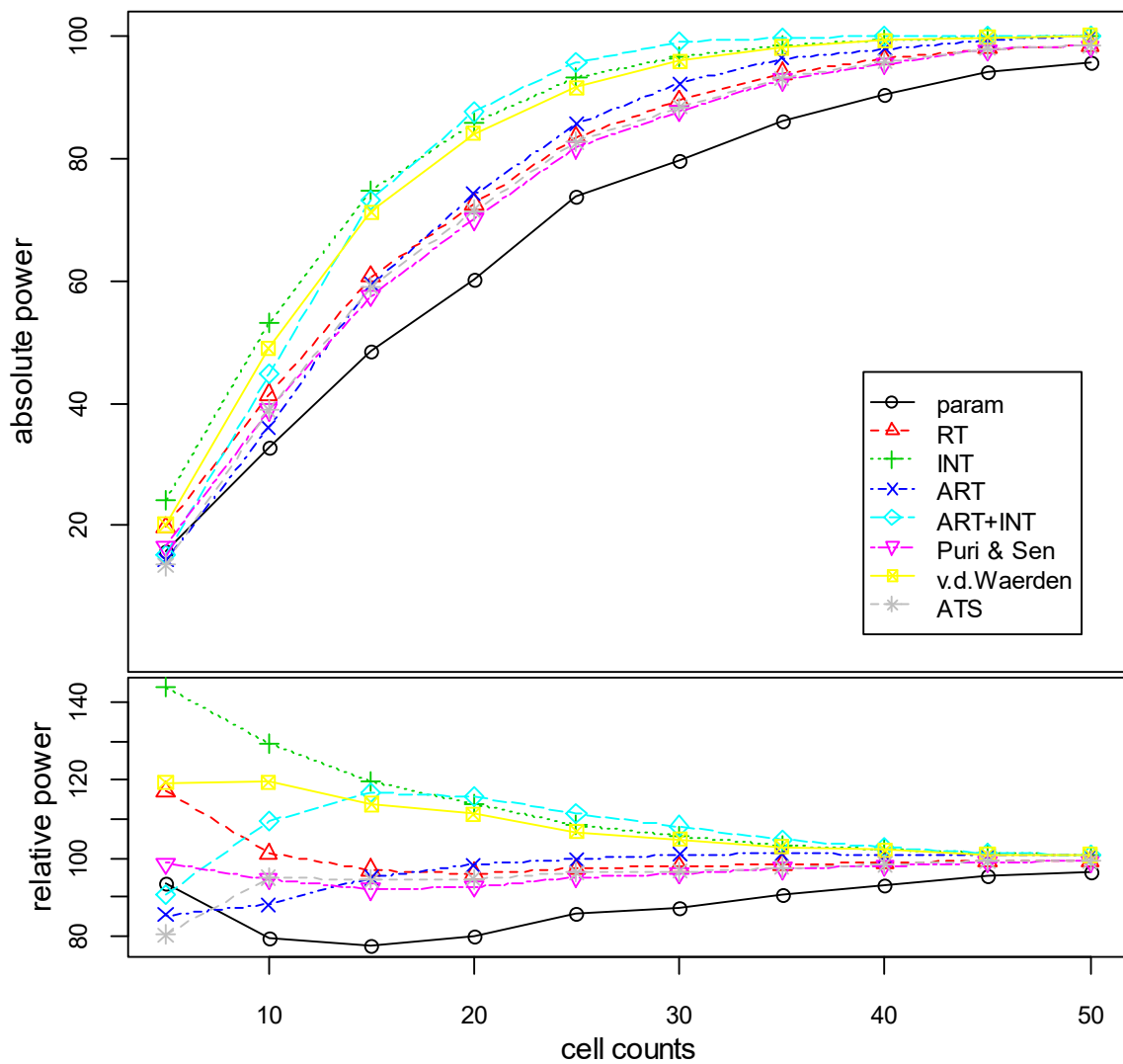
3. 6. 3 normal distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	16.25	32.25	47.25	61.10	72.60	80.10	87.60	91.55	94.55	96.35
RT	13.75	27.75	42.75	54.50	66.10	74.95	82.75	88.10	91.30	94.00
INT	13.70	29.05	44.40	56.60	69.00	76.15	84.50	89.25	92.95	94.95
ART	16.55	34.50	54.75	70.40	81.10	88.80	92.95	96.45	98.05	98.85
ART+INT	13.20	30.95	50.05	67.50	78.45	86.85	92.25	95.60	97.90	98.70
Puri & Sen	12.25	25.75	40.80	51.85	64.05	73.25	81.45	86.60	90.45	93.40
v.d.Waerden	12.30	26.35	41.65	54.25	66.90	74.60	83.05	87.85	92.05	94.40
ATS	10.40	25.35	40.35	52.05	64.25	73.80	82.05	87.10	91.10	93.70



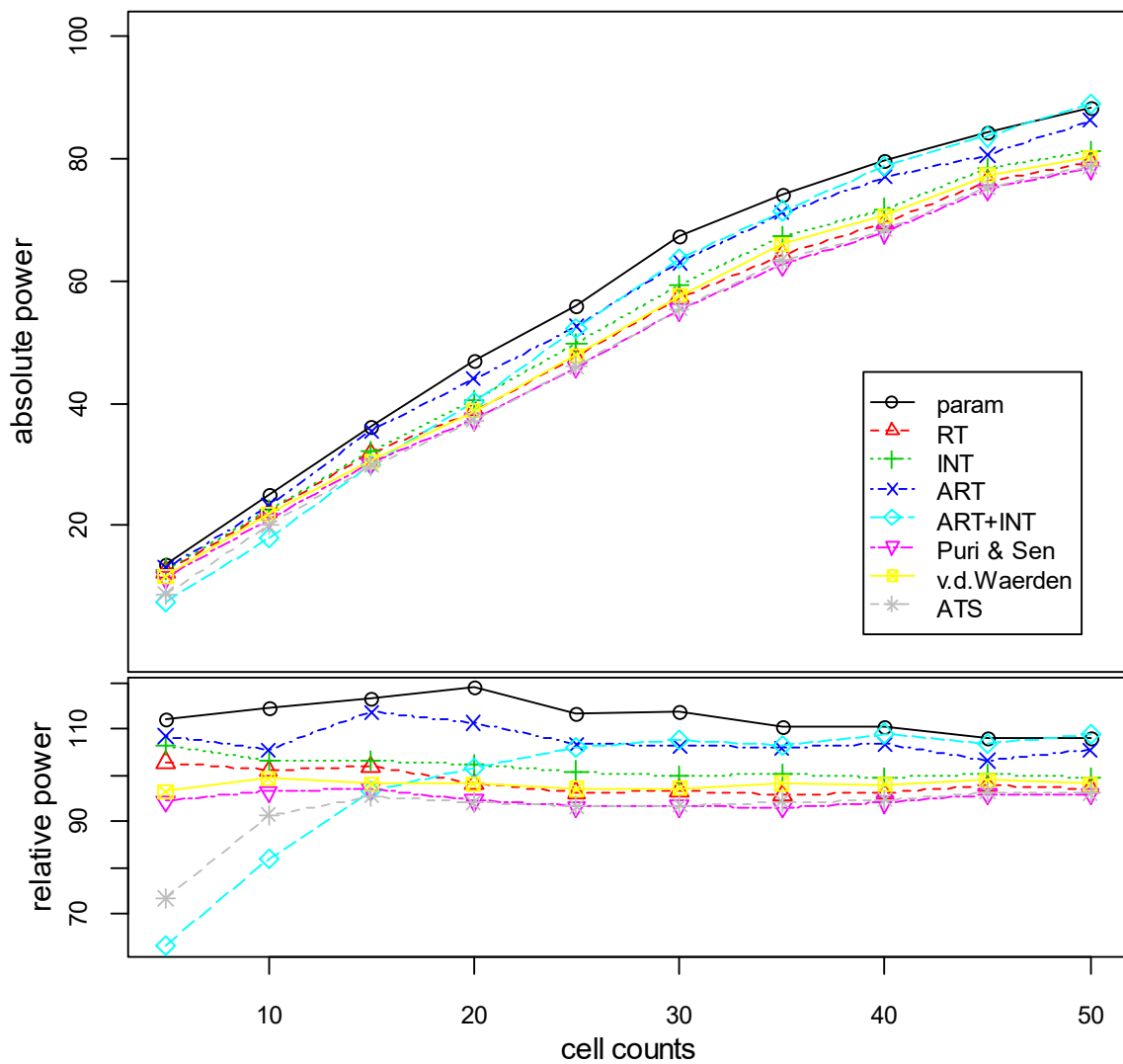
3. 6. 4 right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	15.80	32.65	48.40	60.20	73.75	79.65	86.10	90.25	94.20	95.70
RT	19.75	41.45	60.60	72.50	83.40	89.30	93.75	96.15	97.90	98.40
INT	24.25	53.00	74.75	85.80	93.05	96.50	98.35	99.35	99.70	99.90
ART	14.40	36.10	59.35	74.10	85.55	92.15	96.30	97.90	99.25	99.85
ART+INT	15.30	44.85	73.00	87.45	95.65	98.90	99.70	99.90	99.95	100.0
Puri & Sen	16.65	38.85	57.50	70.00	81.65	87.70	92.75	95.40	97.60	98.25
v.d.Waerden	20.15	49.00	71.15	84.00	91.55	95.75	98.05	99.25	99.65	99.90
ATS	13.55	38.95	58.95	71.40	82.60	88.25	93.00	95.70	97.85	98.35



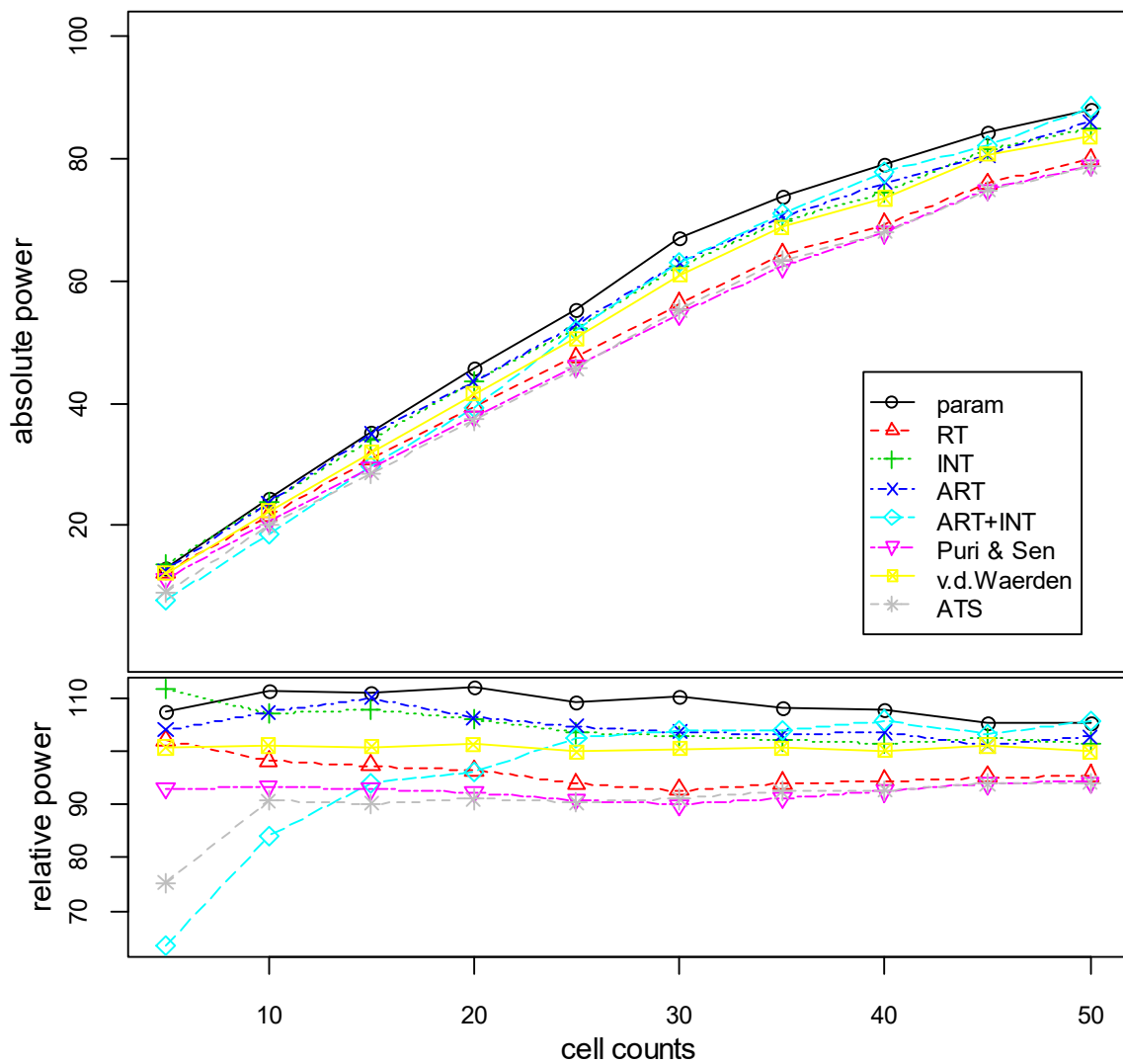
3. 6. 5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	13.60	25.20	36.25	46.95	55.80	67.30	74.15	79.60	84.20	88.15
RT	12.45	22.20	31.70	38.75	47.40	57.20	64.20	69.30	76.25	79.40
INT	12.90	22.70	32.15	40.35	49.65	59.15	67.35	71.70	78.25	81.15
ART	13.15	23.20	35.40	43.95	52.50	62.95	71.00	76.95	80.50	86.15
ART+INT	7.65	18.00	30.10	40.15	52.10	63.65	71.40	78.65	83.45	88.90
Puri & Sen	11.45	21.20	30.20	37.35	45.85	55.25	62.50	67.85	74.85	78.30
v.d.Waerden	11.70	21.85	30.55	38.75	47.75	57.55	65.90	70.60	77.25	80.10
ATS	8.90	20.10	29.75	37.15	45.90	55.30	63.25	68.25	75.20	78.55



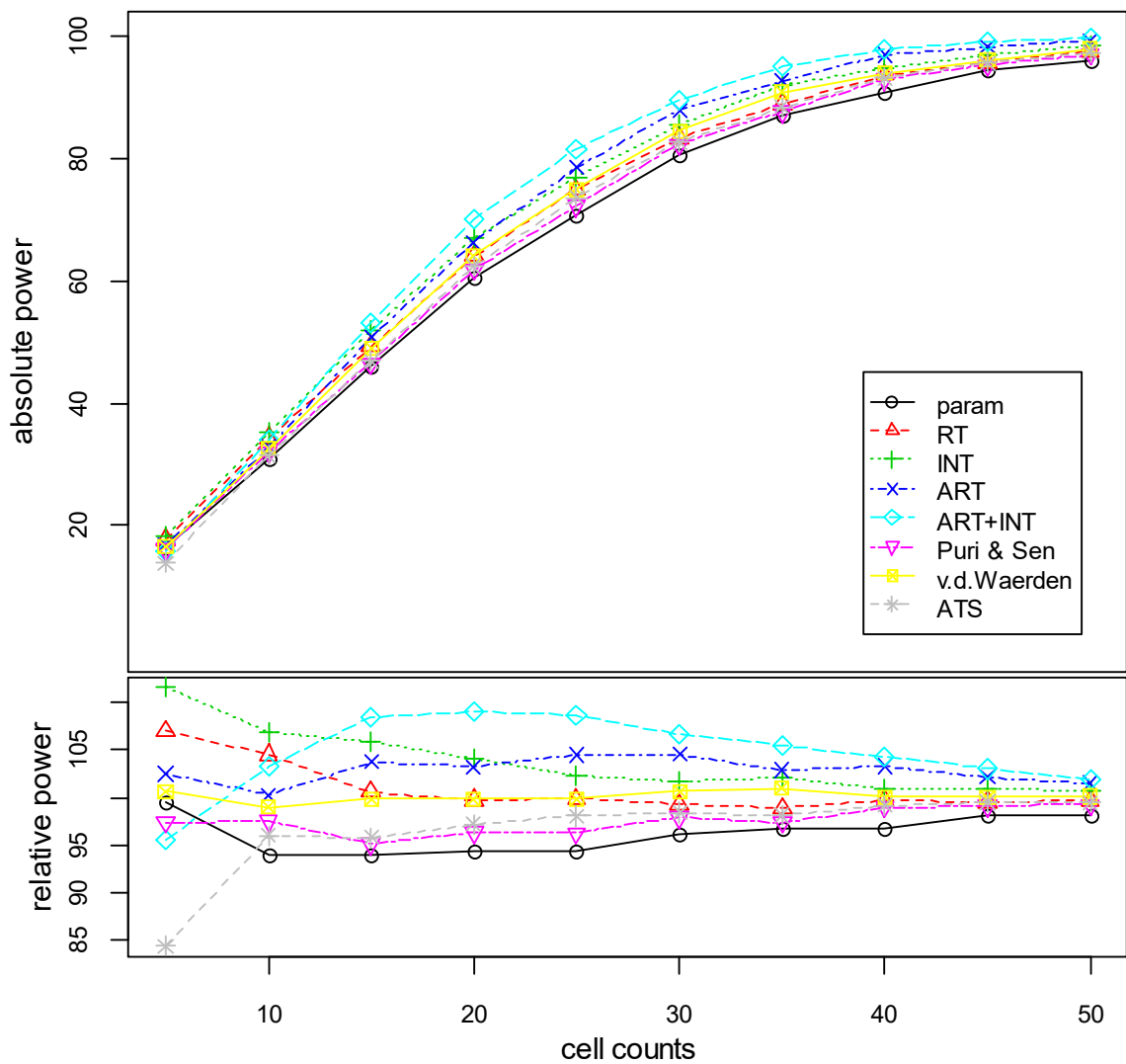
3. 6. 6 exponential distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	13.05	24.60	35.25	45.85	55.25	66.90	73.85	79.00	84.05	88.00
RT	12.40	21.70	30.85	39.45	47.45	56.20	64.20	69.25	75.85	79.85
INT	13.60	23.70	34.15	43.45	52.25	62.40	69.65	74.45	81.55	84.95
ART	12.65	23.75	34.90	43.55	52.90	62.85	70.45	75.95	80.50	85.90
ART+INT	7.70	18.60	29.80	39.30	51.80	63.00	71.00	77.60	82.10	88.35
Puri & Sen	11.30	20.65	29.45	37.80	45.95	54.50	62.35	67.80	74.85	78.75
v.d.Waerden	12.25	22.35	31.95	41.50	50.50	60.90	68.70	73.40	80.55	83.55
ATS	9.15	20.05	28.60	37.25	45.65	55.15	63.15	67.95	74.75	78.65



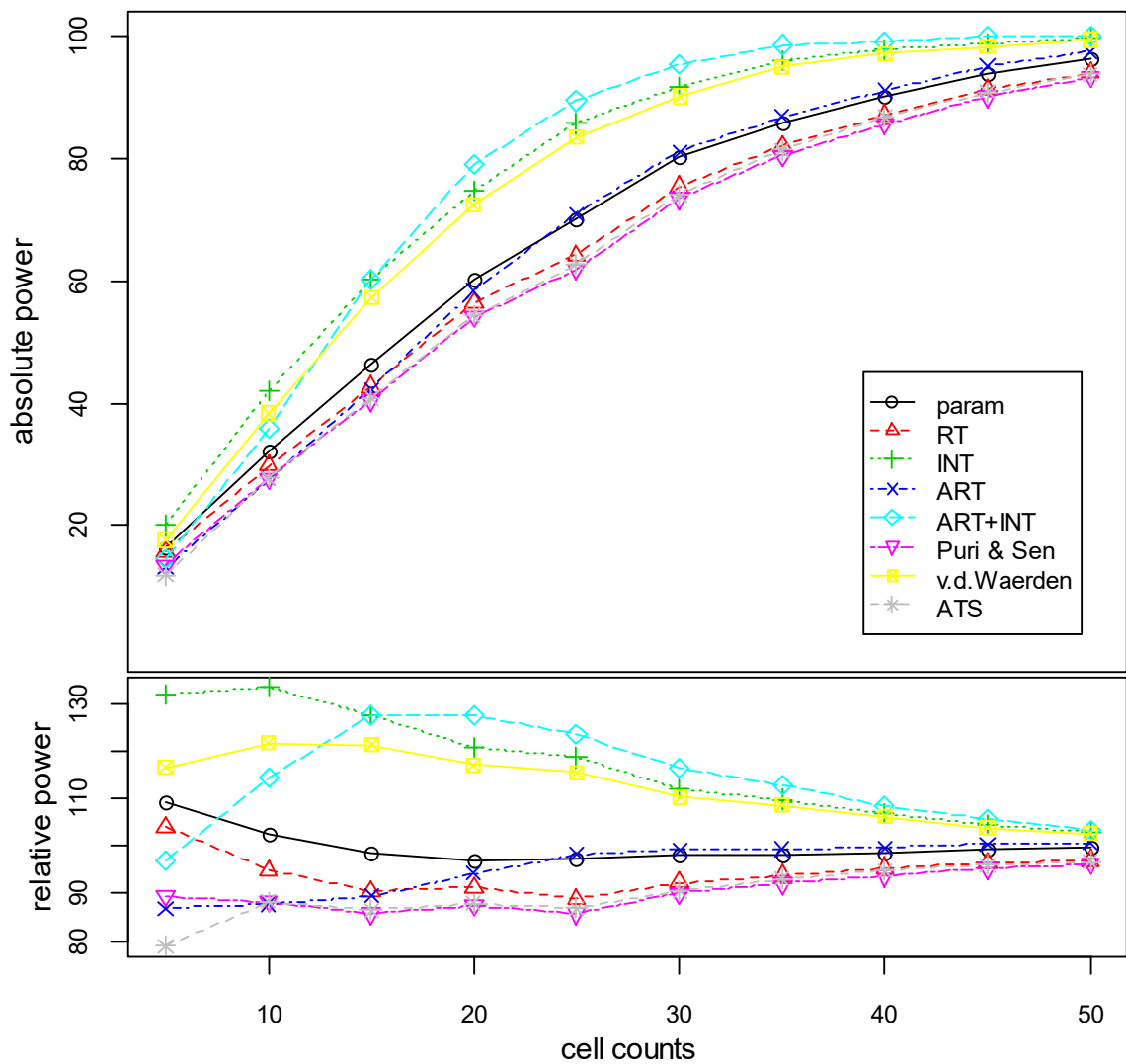
3. 6. 7 lognormal distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	16.40	30.85	45.95	60.55	70.80	80.60	87.00	90.65	94.25	95.95
RT	17.65	34.30	49.20	64.00	74.90	83.30	88.90	93.55	95.55	97.45
INT	18.40	35.10	51.80	66.80	76.80	85.40	91.80	94.70	96.90	98.35
ART	16.90	32.90	50.75	66.25	78.40	87.75	92.55	96.85	98.10	99.15
ART+INT	15.75	33.90	53.05	70.00	81.50	89.55	94.90	97.75	98.90	99.50
Puri & Sen	16.05	32.00	46.50	61.80	72.20	82.20	87.60	92.80	95.15	96.95
v.d.Waerden	16.60	32.50	48.85	64.05	74.90	84.45	90.80	93.85	96.05	97.80
ATS	13.90	31.50	46.85	62.35	73.55	82.60	88.25	93.00	95.55	97.20



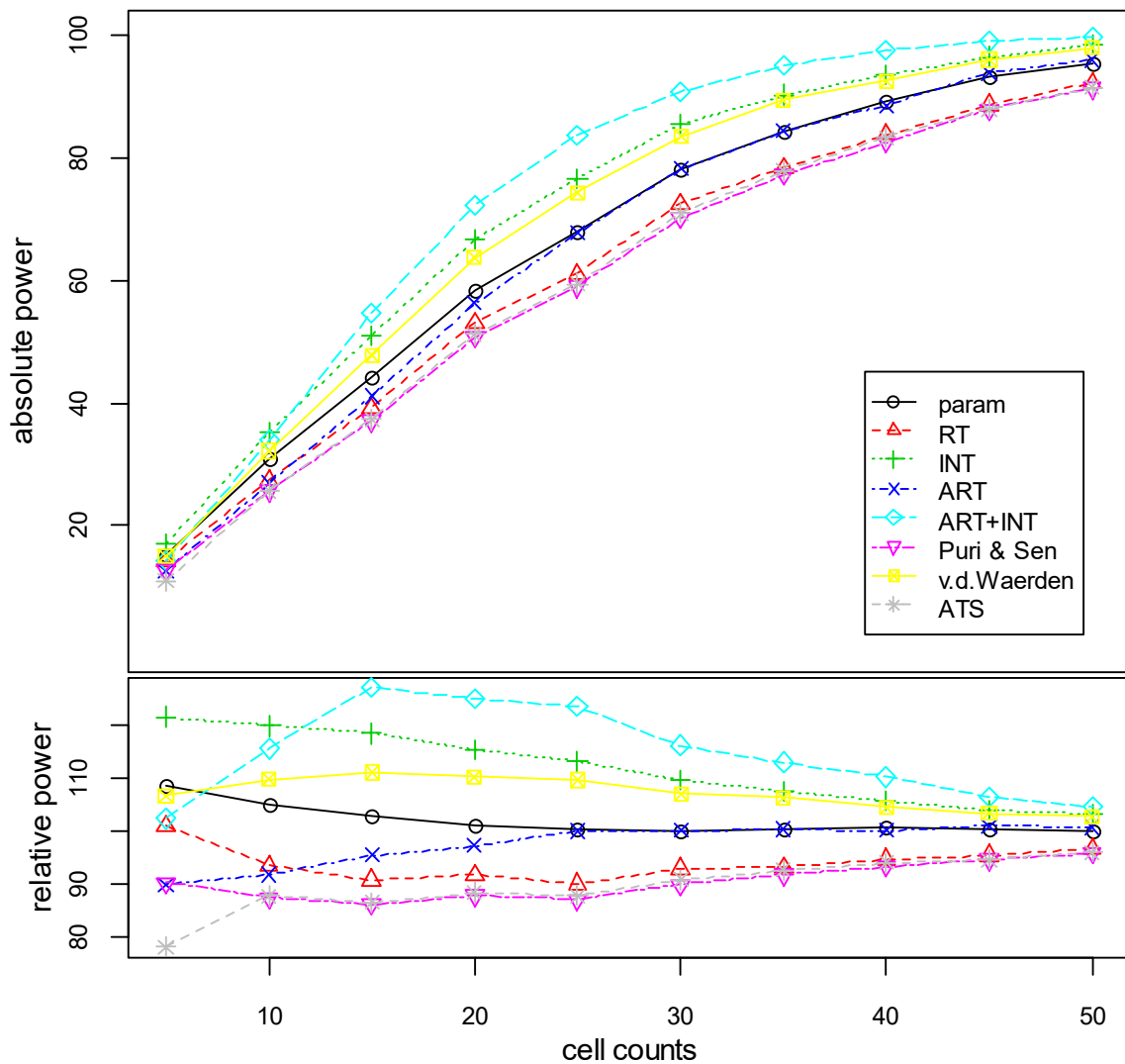
3. 6. 8 uniform distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	16.55	32.20	46.45	60.05	70.15	80.05	85.60	90.10	93.70	96.35
RT	15.75	29.80	42.65	56.45	64.10	75.35	81.90	87.05	91.15	93.85
INT	20.00	41.95	60.10	74.70	85.60	91.60	95.95	97.60	98.65	99.50
ART	13.15	27.60	42.20	58.30	70.85	81.00	86.75	91.00	94.95	97.40
ART+INT	14.70	35.95	60.15	78.90	89.30	95.20	98.50	99.10	99.80	100.0
Puri & Sen	13.55	27.75	40.45	54.05	61.85	73.45	80.40	85.55	90.00	93.20
v.d.Waerden	17.65	38.30	57.20	72.40	83.35	90.05	94.90	97.05	98.10	99.30
ATS	11.95	27.75	40.75	54.30	62.70	73.95	81.30	86.65	90.75	93.60



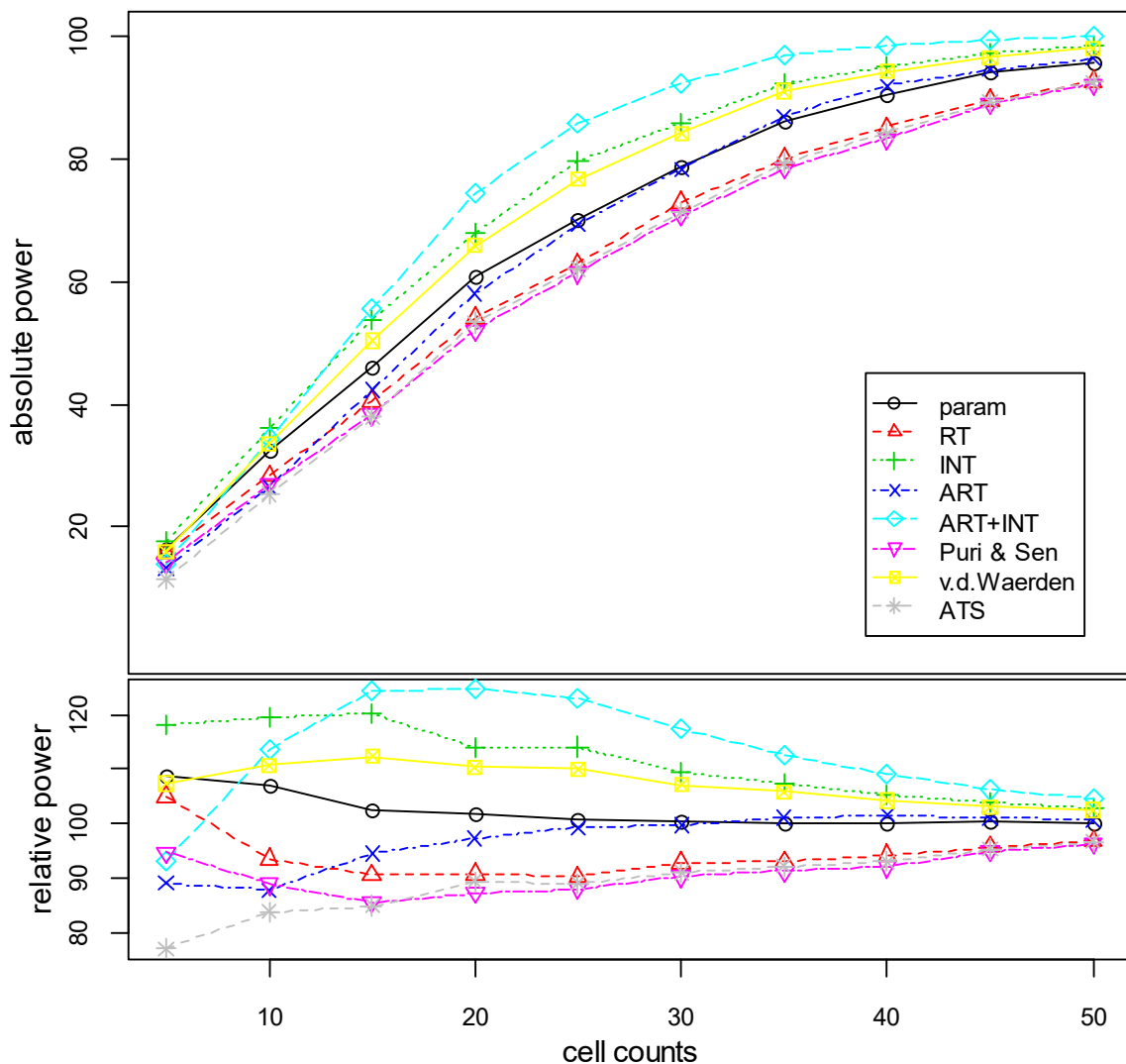
3. 6. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.25	30.80	44.25	58.35	67.95	78.05	84.30	89.10	93.20	95.20
RT	14.20	27.40	39.10	53.00	61.00	72.45	78.30	83.70	88.55	92.10
INT	17.10	35.10	50.95	66.70	76.50	85.40	90.20	93.50	96.35	98.40
ART	12.65	26.90	41.10	56.25	67.70	78.10	84.30	88.45	93.75	95.90
ART+INT	14.40	33.85	54.65	72.25	83.55	90.60	94.95	97.40	98.85	99.65
Puri & Sen	12.70	25.60	37.10	50.75	58.90	70.10	77.15	82.45	87.80	91.30
v.d.Waerden	15.00	32.15	47.80	63.70	74.20	83.40	89.30	92.45	95.90	97.90
ATS	11.00	25.70	37.25	51.10	59.40	70.85	77.85	83.15	87.80	91.40



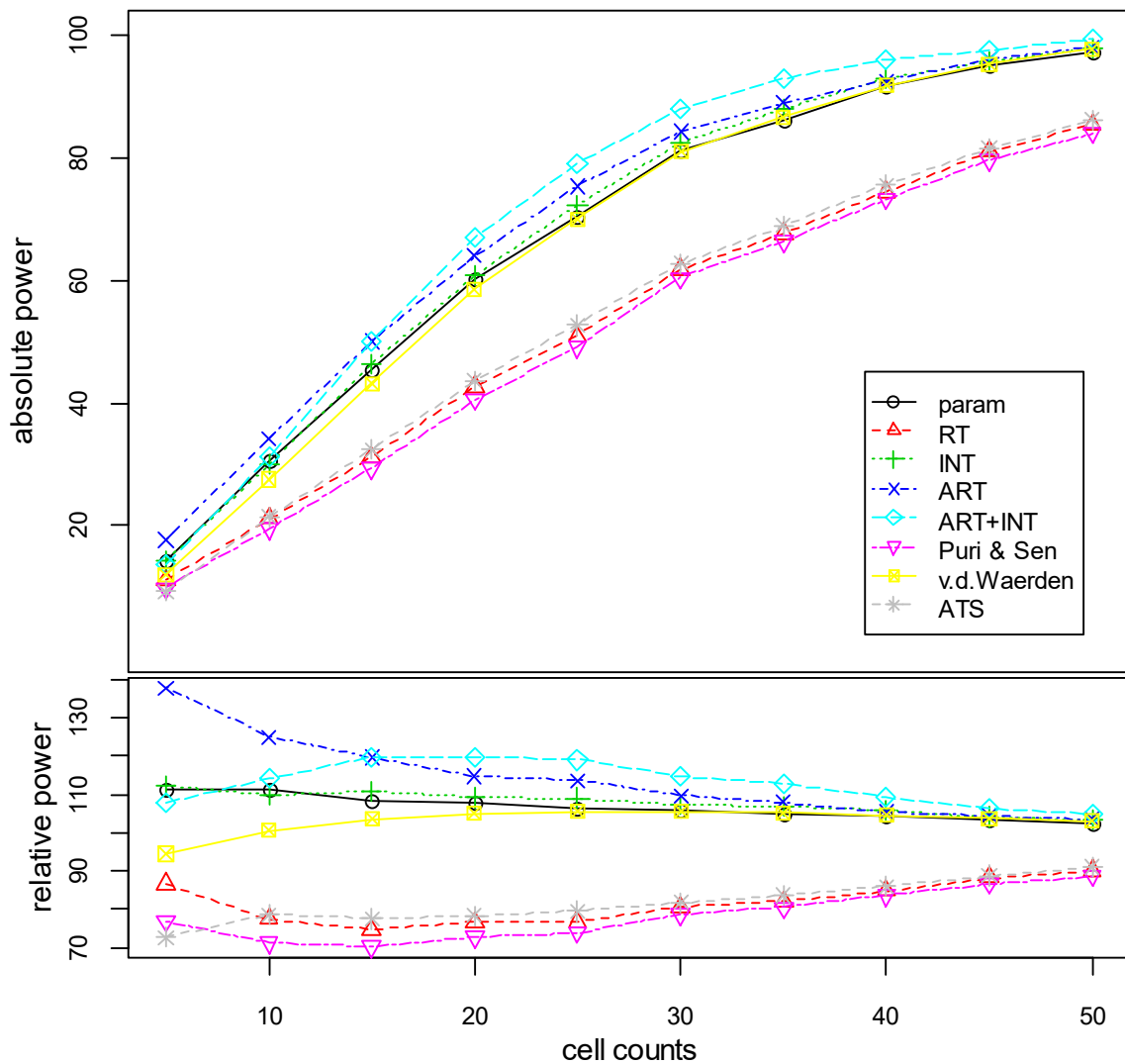
3. 6. 10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	16.30	32.40	45.90	60.70	70.15	78.70	86.10	90.50	93.90	95.70
RT	15.75	28.35	40.55	54.05	62.85	72.80	79.90	85.05	89.50	92.60
INT	17.70	36.25	53.80	68.00	79.55	85.75	92.15	95.00	97.05	98.30
ART	13.35	26.60	42.30	58.00	69.20	78.20	86.85	91.80	94.45	96.30
ART+INT	13.95	34.45	55.65	74.30	85.70	92.10	96.75	98.45	99.30	99.95
Puri & Sen	14.20	26.95	38.30	52.05	61.35	70.80	78.40	83.15	88.85	92.10
v.d.Waerden	16.10	33.55	50.30	65.80	76.65	84.05	90.95	94.15	96.45	98.00
ATS	11.55	25.40	38.00	53.25	62.00	71.35	79.15	84.05	89.20	92.40



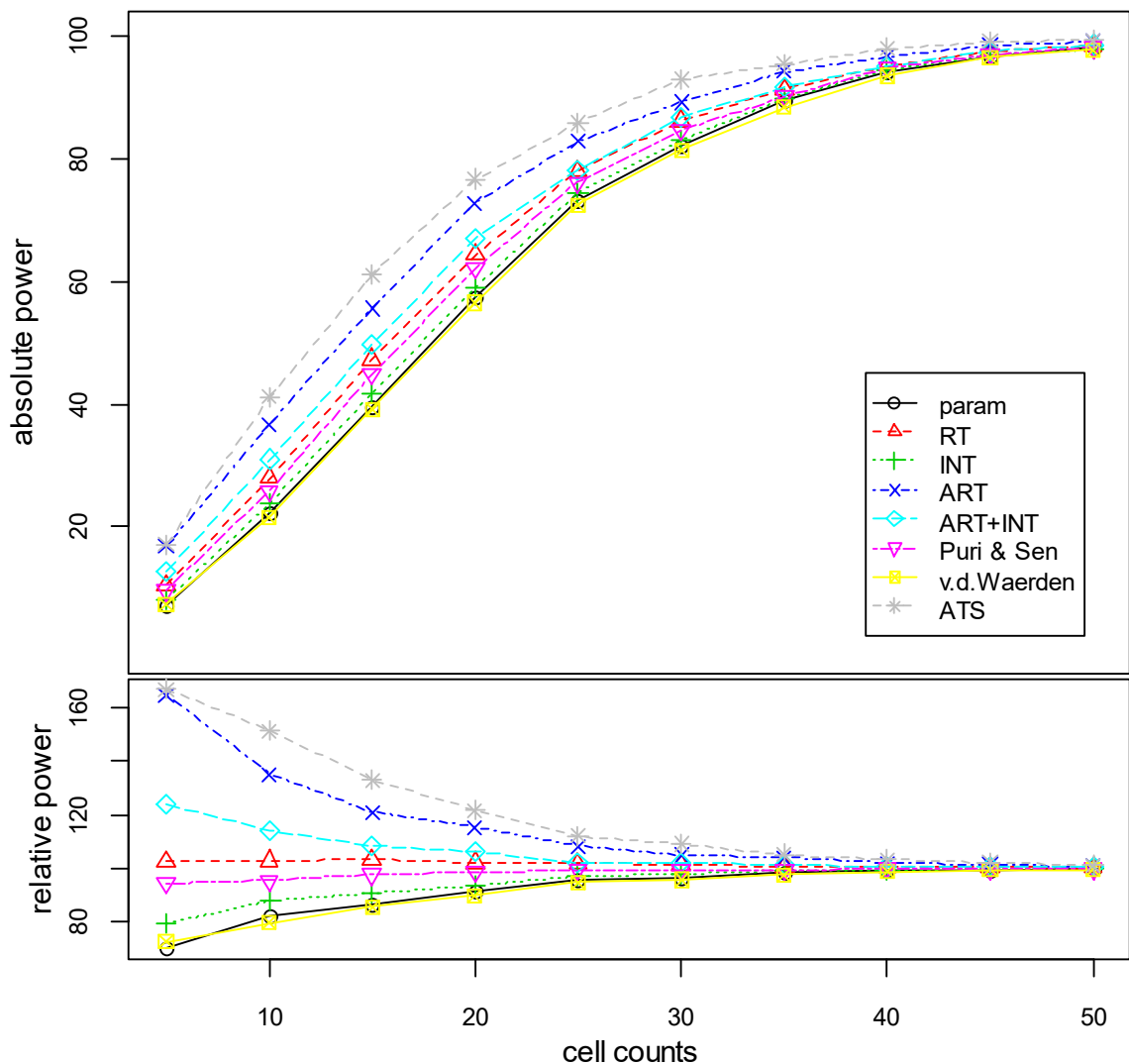
3. 6. 11 left skewed distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.25	30.50	45.30	60.05	70.35	81.10	86.20	91.45	94.90	97.15
RT	11.10	21.20	31.15	42.70	50.80	61.80	67.60	74.35	80.95	85.35
INT	14.40	30.05	46.25	60.85	72.25	82.35	87.95	92.75	95.50	97.85
ART	17.65	34.25	50.00	64.00	75.25	84.20	88.95	92.45	95.95	97.95
ART+INT	13.80	31.25	50.05	66.85	78.85	87.95	92.90	95.95	97.55	99.25
Puri & Sen	9.85	19.50	29.30	40.50	49.00	60.35	66.25	73.25	79.50	84.00
v.d.Waerden	12.10	27.55	43.20	58.60	69.90	80.90	86.60	91.65	95.20	97.60
ATS	9.30	21.50	32.35	43.65	52.65	62.70	68.85	75.45	81.45	86.15



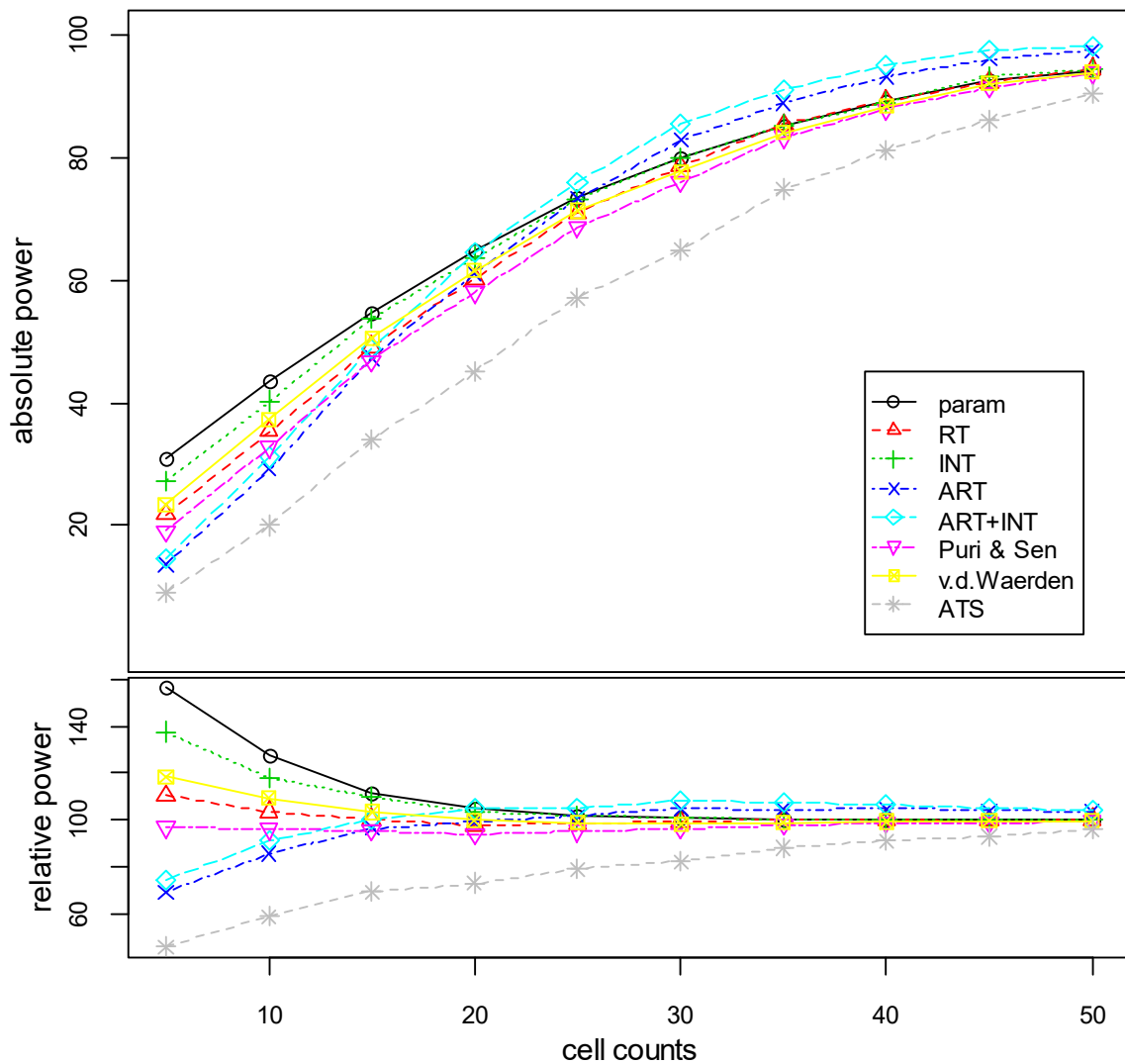
3. 6. 13 normal distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	7.15	22.30	39.50	57.45	73.15	82.05	89.30	93.90	96.60	97.95
RT	10.50	27.95	47.30	64.30	77.95	86.05	91.15	95.10	97.50	98.30
INT	8.10	23.85	41.65	58.85	74.25	82.95	89.80	94.25	96.70	97.90
ART	16.90	36.70	55.55	72.70	82.75	89.10	94.20	96.55	98.35	99.00
ART+INT	12.70	31.05	49.75	66.95	78.00	86.60	91.70	94.95	97.40	98.50
Puri & Sen	9.65	25.90	44.85	62.10	76.05	84.55	90.15	94.75	96.90	98.00
v.d.Waerden	7.40	21.60	39.15	56.50	72.40	81.30	88.35	93.45	96.40	97.60
ATS	17.10	41.20	61.05	76.65	85.75	92.80	95.35	97.90	99.10	99.20



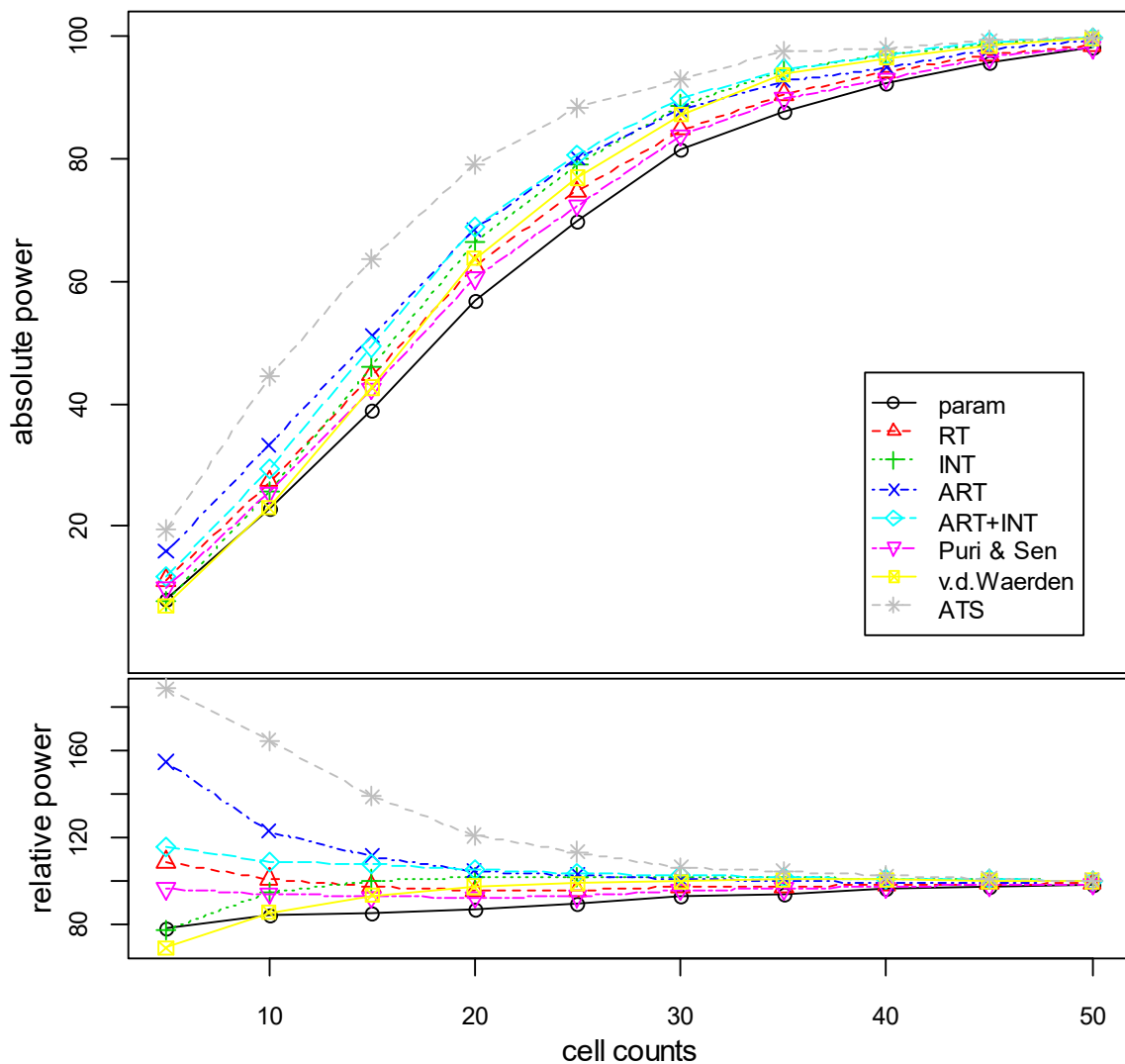
3. 6. 14 normal distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	30.90	43.50	54.55	64.65	73.35	79.75	85.00	89.10	92.65	94.00
RT	21.80	35.35	49.10	60.25	70.85	78.50	85.30	89.25	92.25	94.40
INT	27.20	40.30	53.70	63.70	73.10	79.80	85.25	88.95	93.00	94.35
ART	13.70	29.20	47.25	61.10	73.15	82.70	88.80	93.10	96.05	97.30
ART+INT	14.70	31.10	48.90	64.50	75.85	85.45	91.00	94.90	97.35	98.15
Puri & Sen	19.10	32.75	46.80	57.95	68.55	75.95	83.20	87.75	91.40	93.75
v.d.Waerden	23.40	37.25	50.60	61.55	71.25	77.65	84.00	88.30	92.00	93.80
ATS	9.05	20.00	33.90	45.05	57.00	64.95	74.80	81.00	85.90	90.30



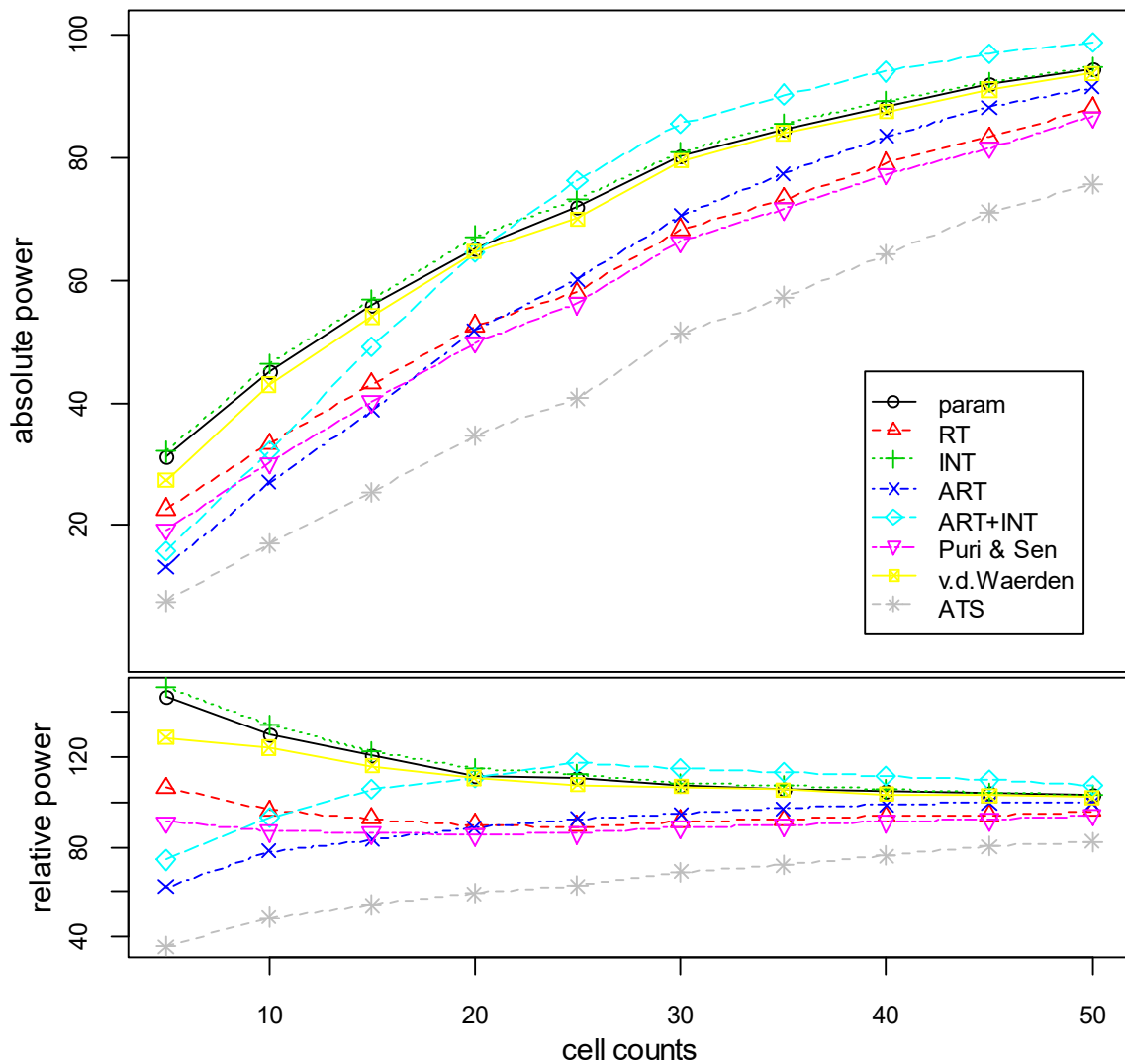
3. 6. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	8.05	22.85	39.00	56.70	69.75	81.45	87.50	92.25	95.65	98.05
RT	11.20	27.35	44.60	62.40	74.55	84.65	90.40	93.95	96.90	98.35
INT	7.95	25.75	45.90	66.35	79.05	88.65	94.40	96.95	98.80	99.70
ART	15.95	33.25	51.05	68.45	79.95	87.85	92.65	94.80	97.70	99.15
ART+INT	11.90	29.45	49.25	68.75	80.55	89.85	94.50	96.70	99.10	99.65
Puri & Sen	9.95	25.55	42.35	60.45	72.30	83.70	89.70	92.95	96.40	98.00
v.d.Waerden	7.15	23.15	42.65	63.70	76.80	87.05	93.70	96.35	98.25	99.50
ATS	19.40	44.55	63.45	79.00	88.25	92.85	97.35	97.90	99.15	99.70



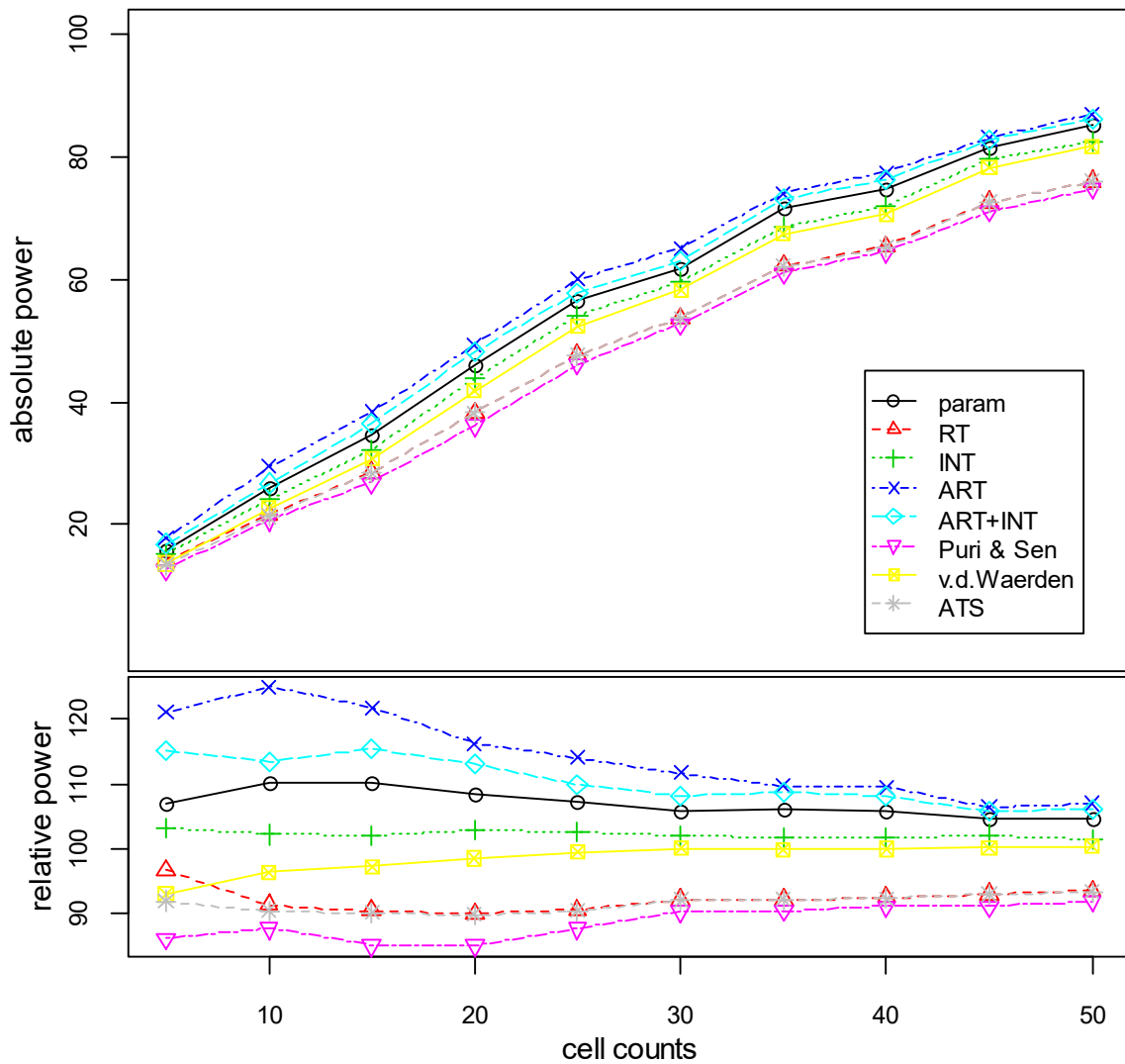
3. 6. 16 left skewed distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	31.20	45.10	56.00	65.20	72.00	80.10	84.50	88.30	91.80	94.35
RT	22.60	33.25	43.05	52.55	57.95	68.25	73.25	79.00	83.15	88.00
INT	32.00	46.40	56.90	67.10	73.10	80.75	85.50	89.10	92.15	94.65
ART	13.25	27.05	38.75	51.75	60.05	70.45	77.30	83.40	88.10	91.35
ART+INT	15.80	32.15	49.05	64.50	76.15	85.35	90.20	93.90	96.80	98.75
Puri & Sen	19.35	30.20	40.15	49.85	56.10	66.20	71.55	77.15	81.55	86.55
v.d.Waerden	27.35	42.95	54.00	64.55	69.90	79.40	83.90	87.40	91.00	93.70
ATS	7.65	17.00	25.35	34.65	40.70	51.40	57.25	64.25	70.95	75.60



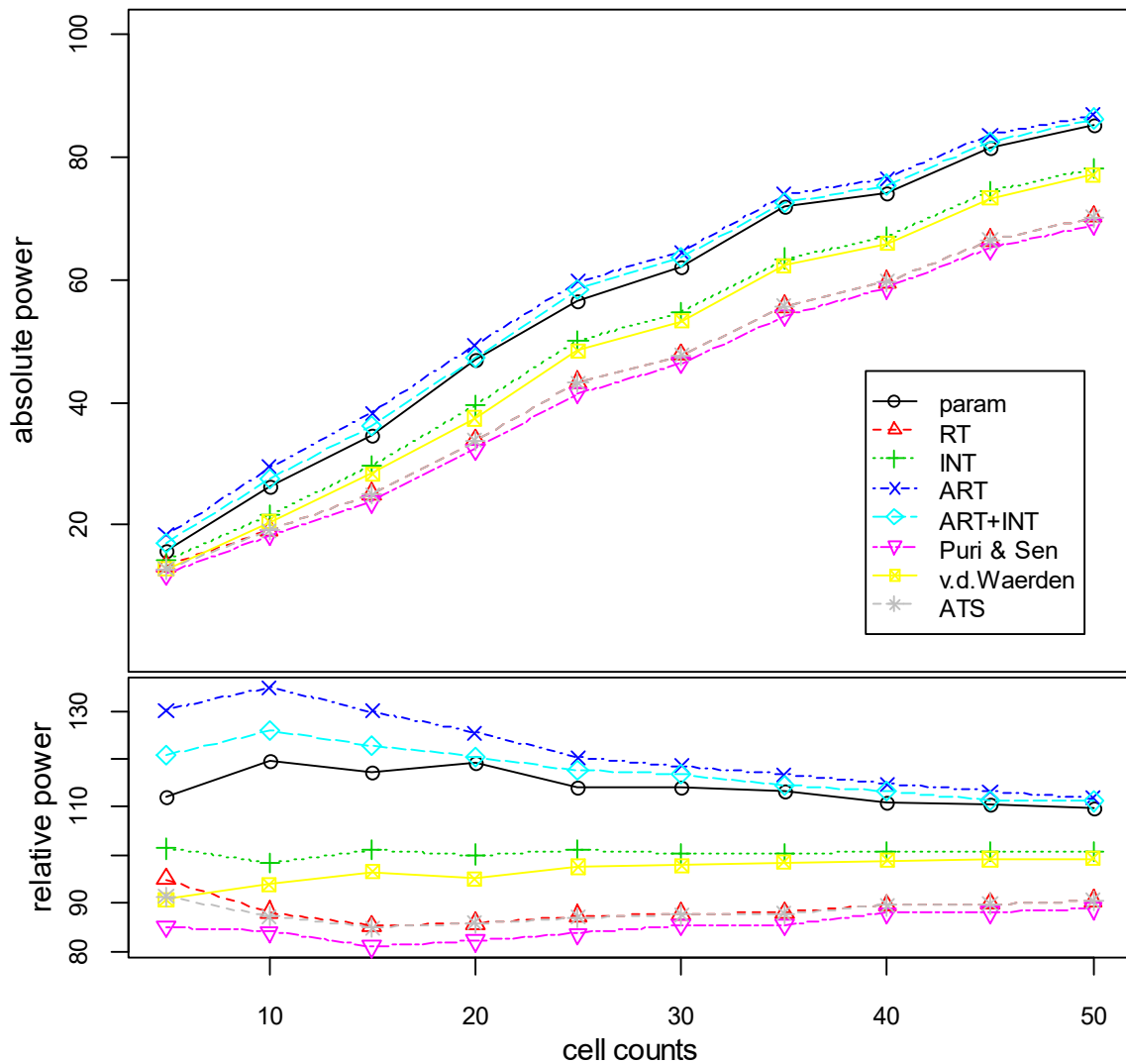
3. 7. 2 normal distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	15.70	25.95	34.65	46.05	56.40	61.60	71.55	74.70	81.50	85.05
RT	14.20	21.55	28.50	38.25	47.65	53.65	62.15	65.35	72.55	75.95
INT	15.15	24.10	32.15	43.75	53.90	59.45	68.60	71.80	79.65	82.45
ART	17.75	29.45	38.30	49.35	59.95	65.05	73.90	77.35	82.95	86.90
ART+INT	16.90	26.75	36.35	48.05	57.80	62.90	73.20	76.30	82.55	86.15
Puri & Sen	12.65	20.70	26.80	36.15	46.10	52.65	61.00	64.35	71.05	74.75
v.d.Waerden	13.65	22.75	30.65	41.85	52.30	58.25	67.35	70.60	78.15	81.60
ATS	13.50	21.35	28.40	38.20	47.55	53.65	62.15	65.25	72.50	75.90



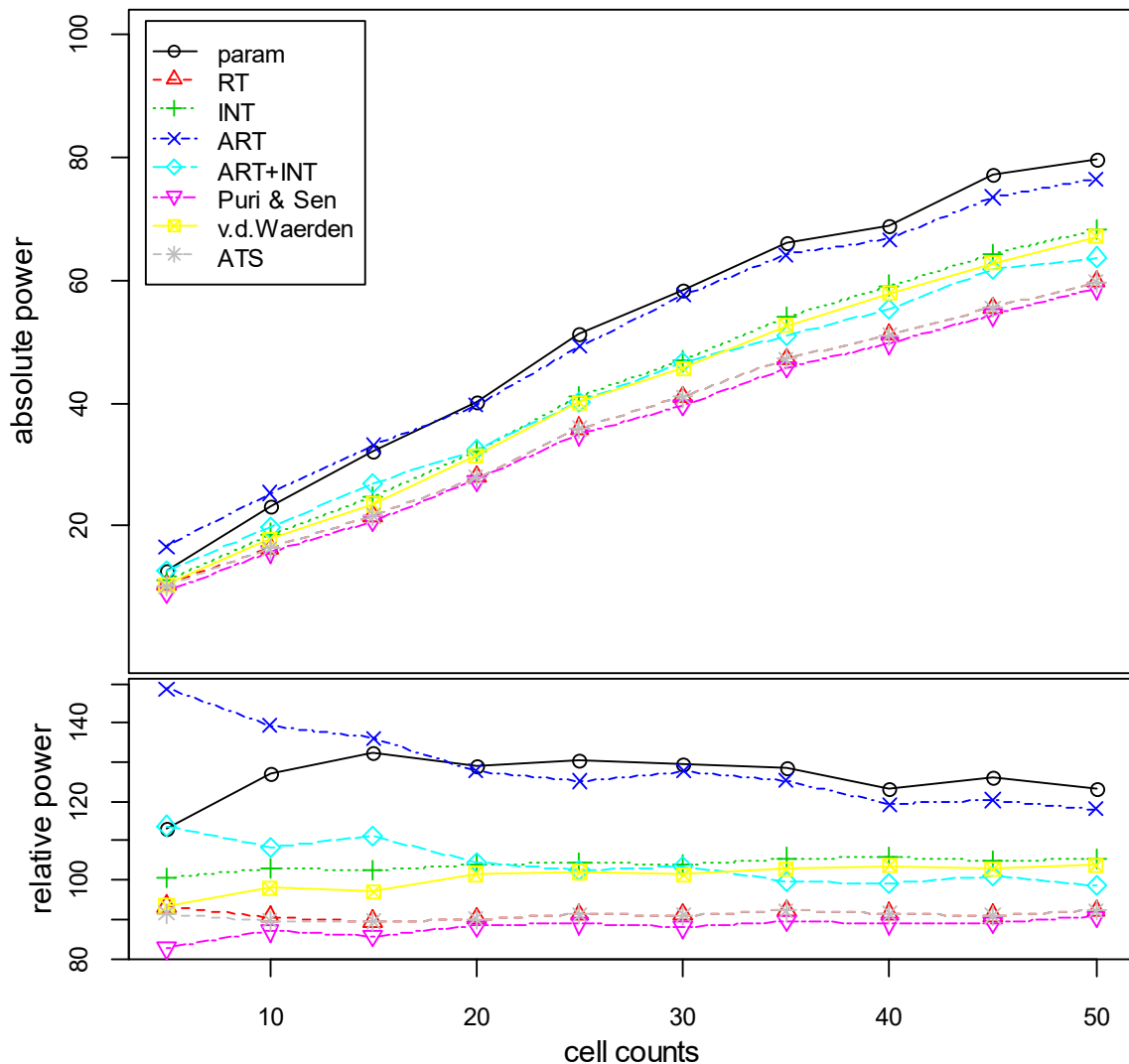
3. 7. 3 normal distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	15.85	26.15	34.50	46.85	56.60	61.95	71.75	74.00	81.55	85.10
RT	13.40	19.30	25.05	33.80	43.30	47.70	55.65	59.65	66.35	70.15
INT	14.30	21.55	29.70	39.40	50.10	54.60	63.40	67.00	74.25	78.00
ART	18.35	29.50	38.20	49.35	59.65	64.45	73.85	76.45	83.55	86.70
ART+INT	17.05	27.55	36.05	47.35	58.35	63.45	72.45	75.40	82.30	86.20
Puri & Sen	12.00	18.40	23.80	32.35	41.50	46.45	54.10	58.60	65.00	68.90
v.d.Waerden	12.80	20.55	28.35	37.40	48.40	53.20	62.25	65.85	73.20	77.00
ATS	12.90	19.10	24.95	33.80	43.20	47.60	55.60	59.65	66.35	70.15



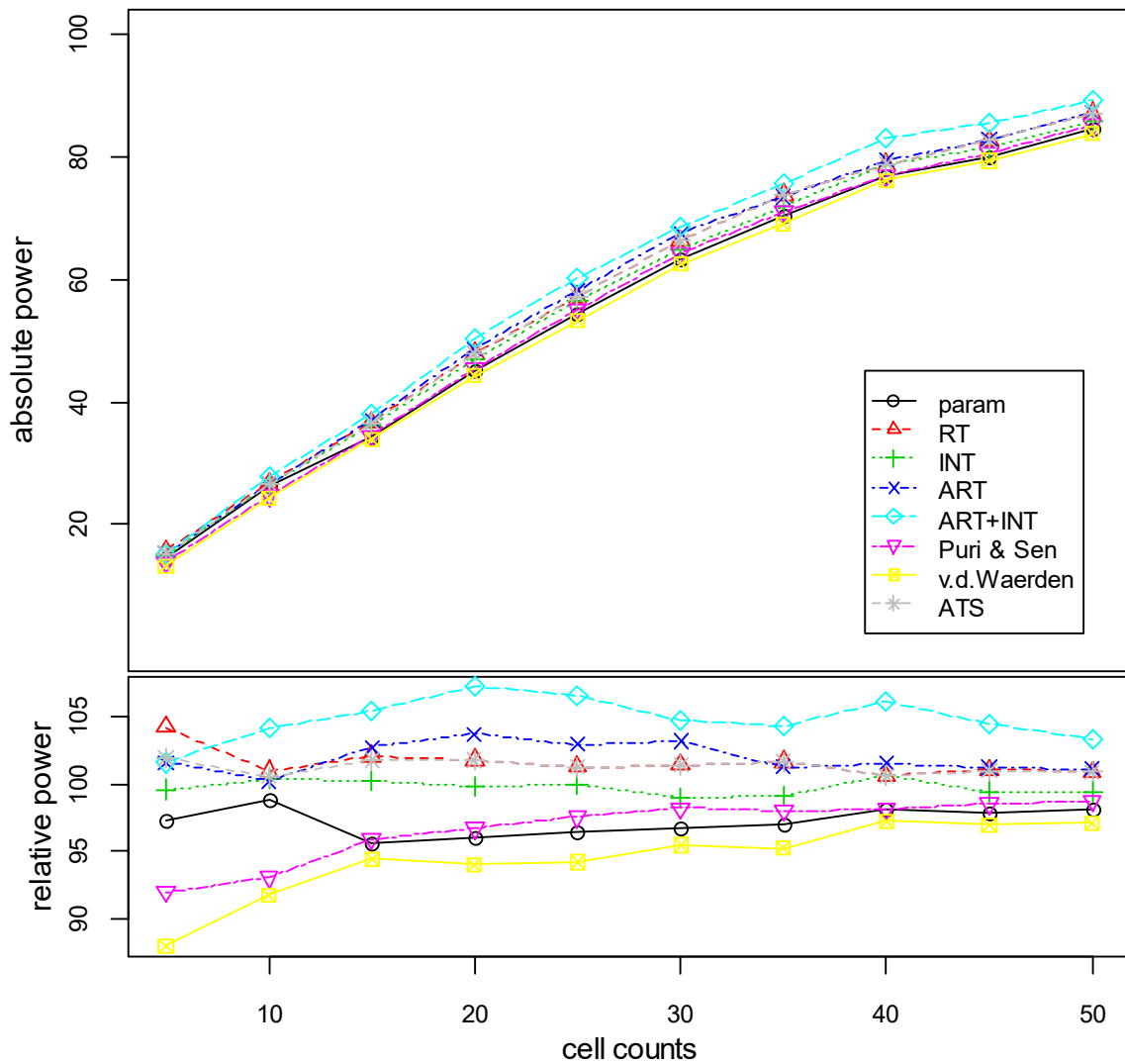
3. 7. 6 exponential distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	12.65	23.10	32.10	40.10	51.25	58.25	65.90	68.75	77.00	79.70
RT	10.45	16.50	21.70	27.95	35.85	41.00	47.15	51.05	55.45	59.70
INT	11.25	18.75	24.85	32.30	41.00	46.80	54.05	59.10	64.10	68.25
ART	16.65	25.35	33.05	39.65	49.15	57.50	64.10	66.60	73.40	76.40
ART+INT	12.75	19.70	26.95	32.35	40.20	46.55	50.90	55.35	61.65	63.70
Puri & Sen	9.25	15.85	20.80	27.40	34.90	39.60	45.85	49.65	54.35	58.65
v.d.Waerden	10.45	17.85	23.55	31.50	40.05	45.60	52.60	57.85	62.75	67.10
ATS	10.25	16.30	21.70	27.95	35.85	40.95	47.15	51.05	55.45	59.70



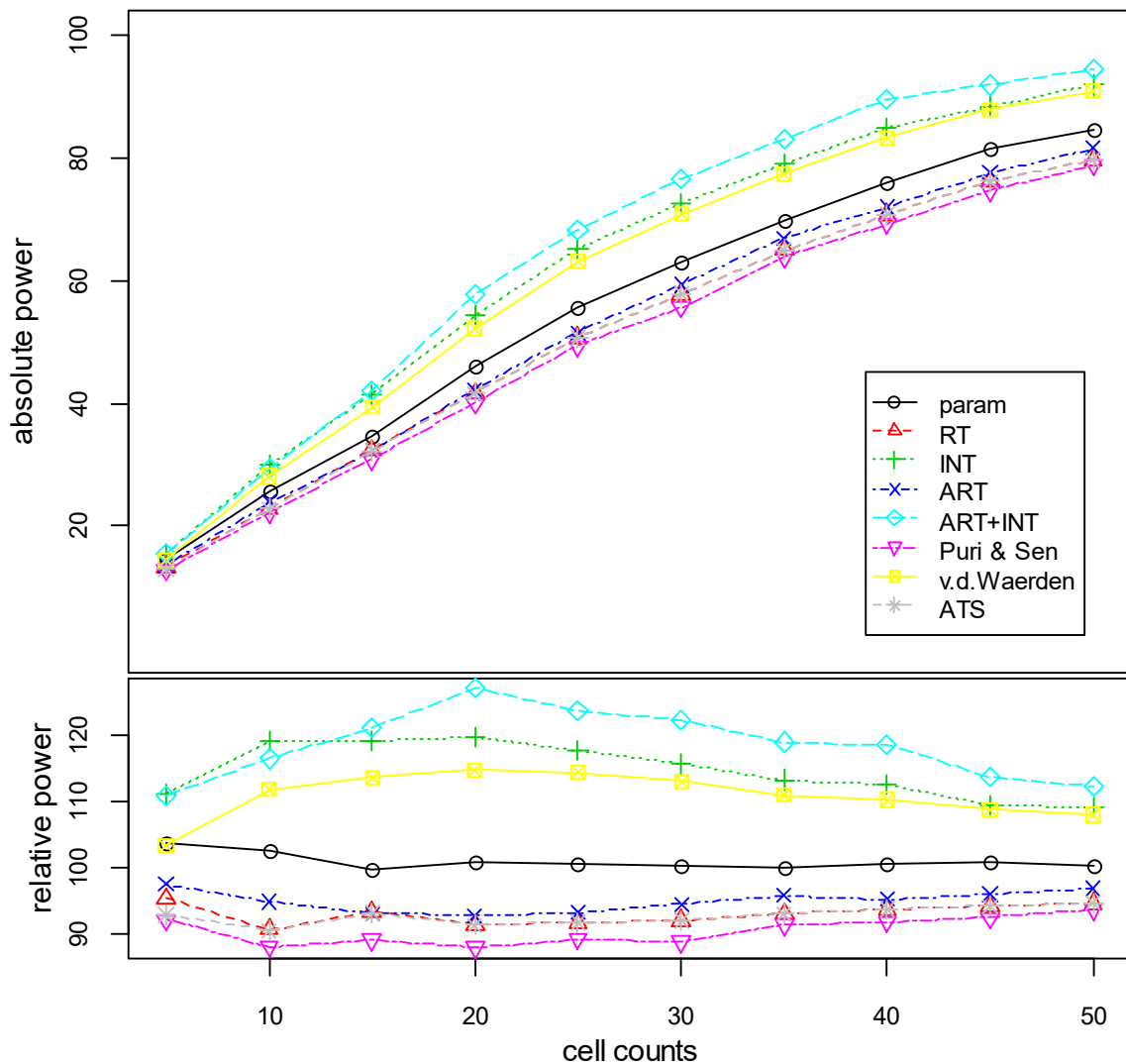
3. 7. 7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.65	26.30	34.40	45.15	54.40	63.20	70.35	76.70	80.00	84.55
RT	15.70	26.85	36.70	47.85	57.15	66.30	73.70	78.70	82.60	86.95
INT	15.00	26.70	36.05	46.90	56.40	64.70	71.80	78.70	81.30	85.70
ART	15.30	26.65	36.95	48.75	58.10	67.45	73.40	79.40	82.75	87.15
ART+INT	15.30	27.70	37.90	50.40	60.15	68.45	75.60	83.00	85.40	89.05
Puri & Sen	13.85	24.75	34.50	45.45	55.05	64.20	71.05	76.75	80.55	85.10
v.d.Waerden	13.25	24.40	33.95	44.20	53.15	62.40	69.00	76.05	79.25	83.65
ATS	15.35	26.75	36.60	47.85	57.15	66.30	73.70	78.70	82.55	86.95



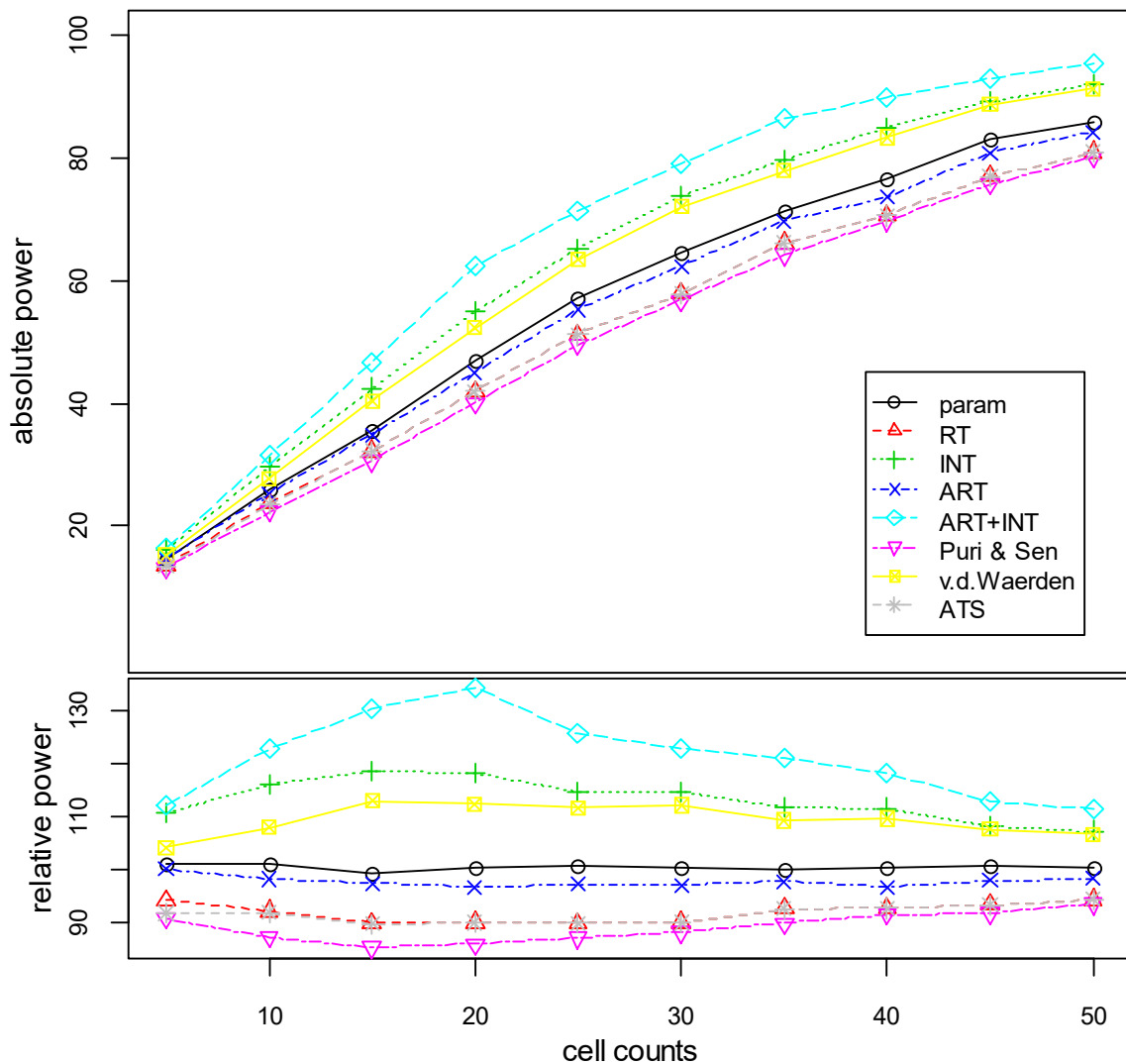
3. 7. 8 uniform distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.50	25.80	34.60	45.95	55.55	62.90	69.85	75.90	81.45	84.45
RT	13.35	22.85	32.35	41.60	50.65	57.70	64.95	70.70	76.05	79.60
INT	15.55	30.00	41.25	54.45	65.00	72.40	79.00	84.85	88.35	91.75
ART	13.65	23.90	32.25	42.25	51.50	59.25	66.90	71.85	77.50	81.50
ART+INT	15.50	29.30	41.95	57.75	68.25	76.50	82.95	89.40	91.75	94.45
Puri & Sen	12.90	22.20	30.90	40.05	49.30	55.70	63.80	69.25	74.65	78.80
v.d.Waerden	14.45	28.15	39.35	52.20	63.10	70.80	77.35	83.15	87.80	90.80
ATS	13.00	22.80	32.30	41.60	50.65	57.70	64.95	70.70	76.05	79.60



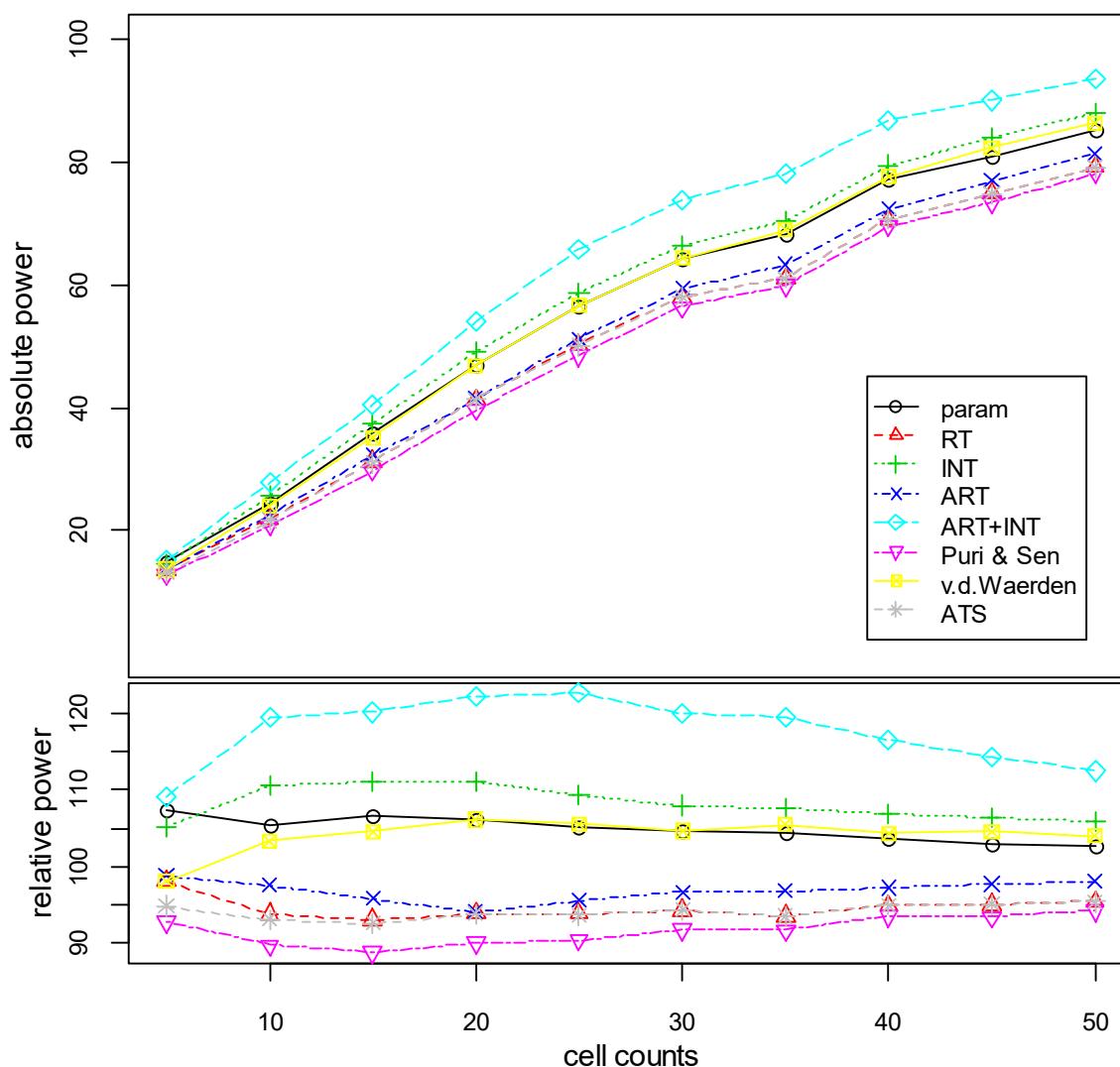
3. 7. 9 uniform distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.75	26.00	35.55	46.80	57.20	64.45	71.25	76.40	82.85	85.80
RT	13.75	23.70	32.20	41.95	51.10	57.85	66.05	70.50	76.90	80.80
INT	16.15	29.80	42.45	55.00	65.10	73.60	79.65	84.80	89.10	91.80
ART	14.60	25.25	34.85	45.05	55.25	62.30	69.65	73.55	80.75	84.10
ART+INT	16.35	31.55	46.60	62.40	71.30	78.90	86.25	89.75	92.80	95.40
Puri & Sen	13.25	22.45	30.55	40.05	49.55	56.65	64.10	69.65	75.65	80.05
v.d.Waerden	15.20	27.75	40.40	52.30	63.40	72.00	77.85	83.30	88.60	91.20
ATS	13.40	23.65	32.15	41.95	51.10	57.85	66.00	70.50	76.90	80.80



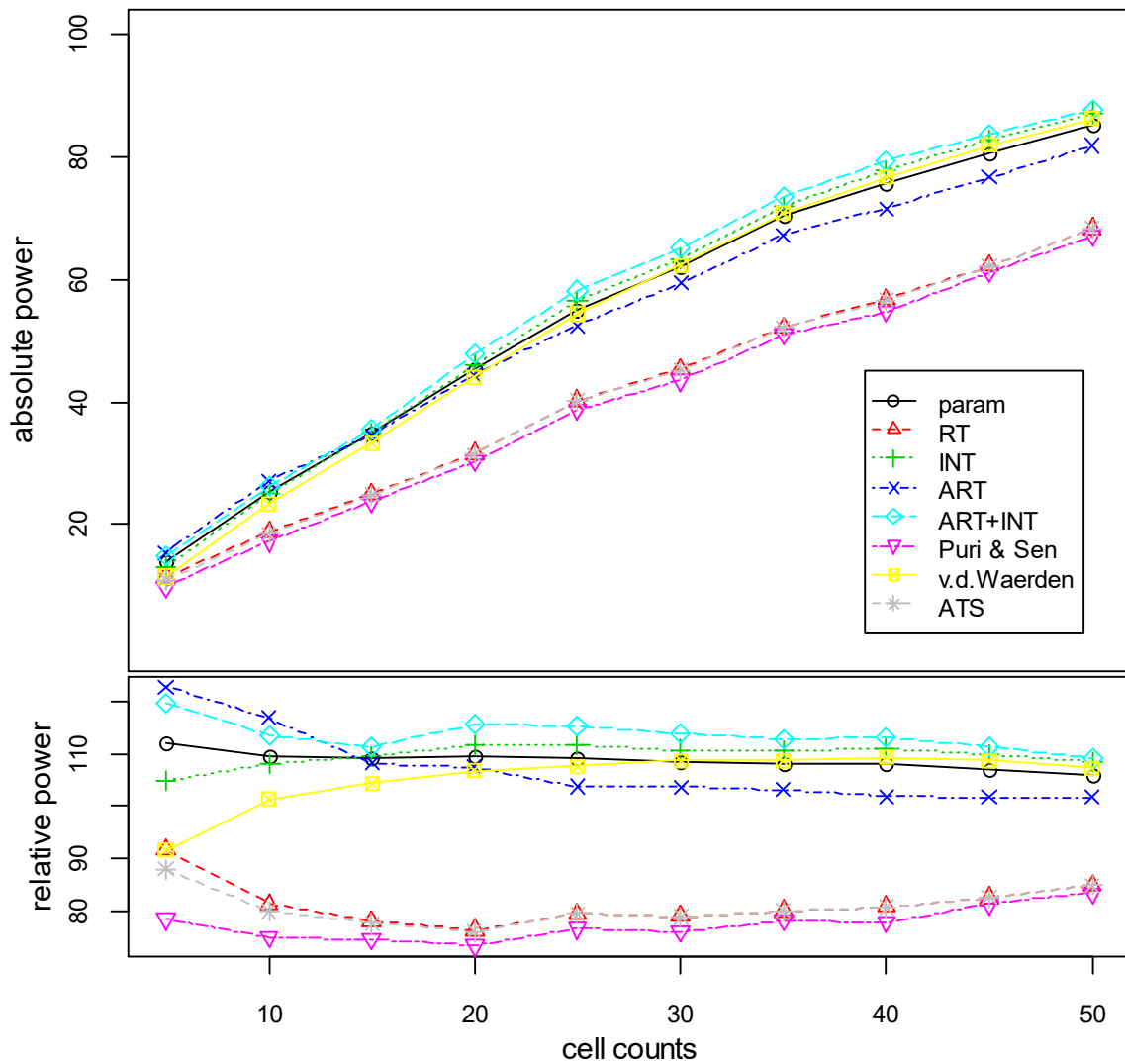
3. 7. 10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.95	24.60	35.85	46.80	56.35	64.25	68.20	77.10	80.90	85.25
RT	13.65	21.85	31.25	41.35	50.25	57.90	61.05	70.55	74.75	79.10
INT	14.65	25.80	37.35	49.00	58.60	66.35	70.35	79.40	83.75	87.90
ART	13.75	22.75	32.20	41.45	51.20	59.35	63.25	72.25	76.85	81.30
ART+INT	15.20	27.90	40.40	53.95	65.75	73.75	78.15	86.65	89.90	93.35
Puri & Sen	12.90	20.90	29.80	39.65	48.40	56.35	59.85	69.45	73.45	78.15
v.d.Waerden	13.65	24.10	35.15	46.80	56.55	64.30	68.90	77.55	82.25	86.30
ATS	13.20	21.70	31.10	41.35	50.15	57.90	61.05	70.55	74.75	79.10



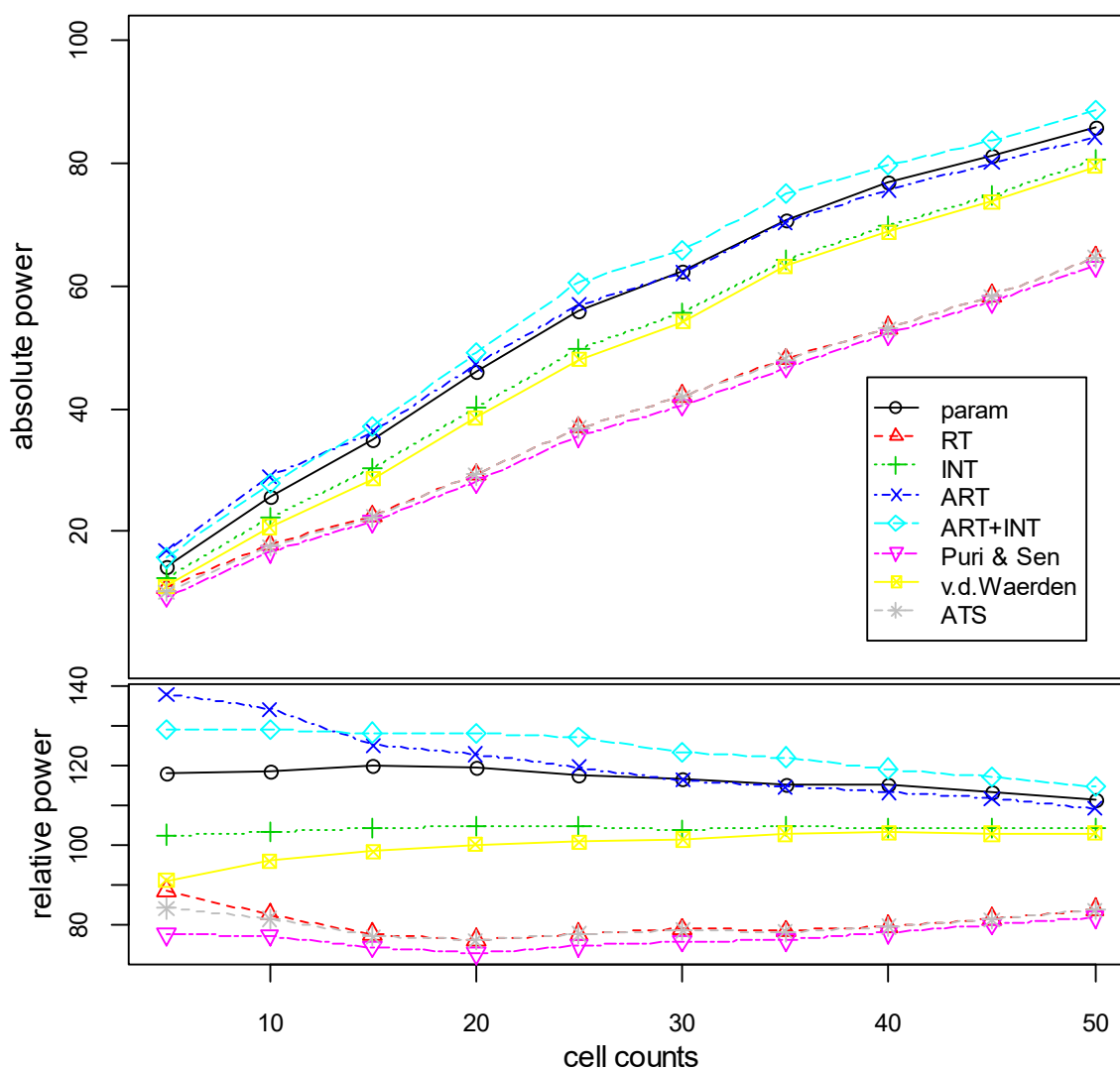
3. 7. 11 left skewed distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.05	25.40	34.90	45.25	55.05	62.15	70.40	75.70	80.45	85.10
RT	11.50	18.85	24.95	31.60	40.15	45.25	52.10	56.70	62.15	68.25
INT	13.15	25.05	34.95	46.15	56.40	63.40	71.95	77.80	82.70	87.10
ART	15.40	27.10	34.55	44.40	52.40	59.35	67.15	71.45	76.55	81.75
ART+INT	15.00	26.35	35.55	47.80	58.15	65.20	73.45	79.25	83.65	87.55
Puri & Sen	9.85	17.40	23.85	30.35	38.70	43.55	51.00	54.70	61.25	67.00
v.d.Waerden	11.50	23.50	33.35	44.10	54.35	62.20	70.70	76.65	81.80	86.20
ATS	11.05	18.55	24.80	31.50	40.15	45.15	52.10	56.60	62.15	68.20



3. 7. 12 left skewed distribution - unequal variances (on A and B)

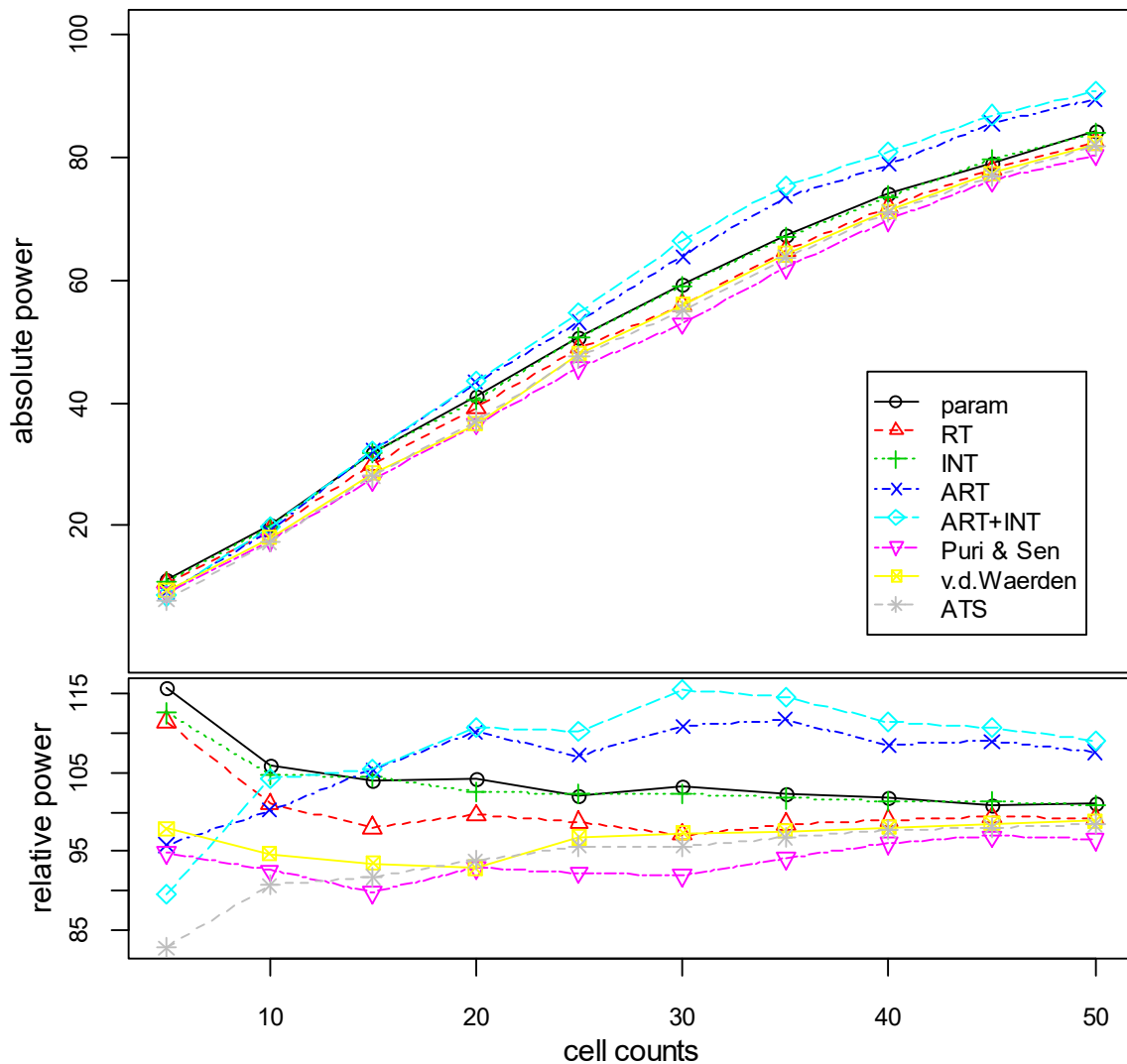
	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.40	25.65	34.80	45.90	55.80	62.35	70.60	76.75	81.10	85.75
RT	10.80	17.85	22.55	29.35	36.90	42.10	48.10	53.10	58.30	64.60
INT	12.50	22.30	30.25	40.30	49.75	55.45	64.25	69.60	74.75	80.50
ART	16.80	29.00	36.30	47.25	56.90	62.05	70.30	75.55	79.95	84.20
ART+INT	15.70	27.90	37.20	49.20	60.35	65.75	74.95	79.50	83.70	88.40
Puri & Sen	9.45	16.70	21.60	28.00	35.55	40.55	46.70	52.05	57.35	63.15
v.d.Waerden	11.10	20.75	28.55	38.50	47.95	54.15	63.15	68.75	73.65	79.35
ATS	10.25	17.60	22.35	29.25	36.90	41.95	48.00	53.05	58.25	64.55



3. 8. Main effect A - B and Interaction significant (effects $a_i = b_j = 0.3*s$ $ab_{ij} = 0.4*s$ / unequal n_i / # levels = 4*5)

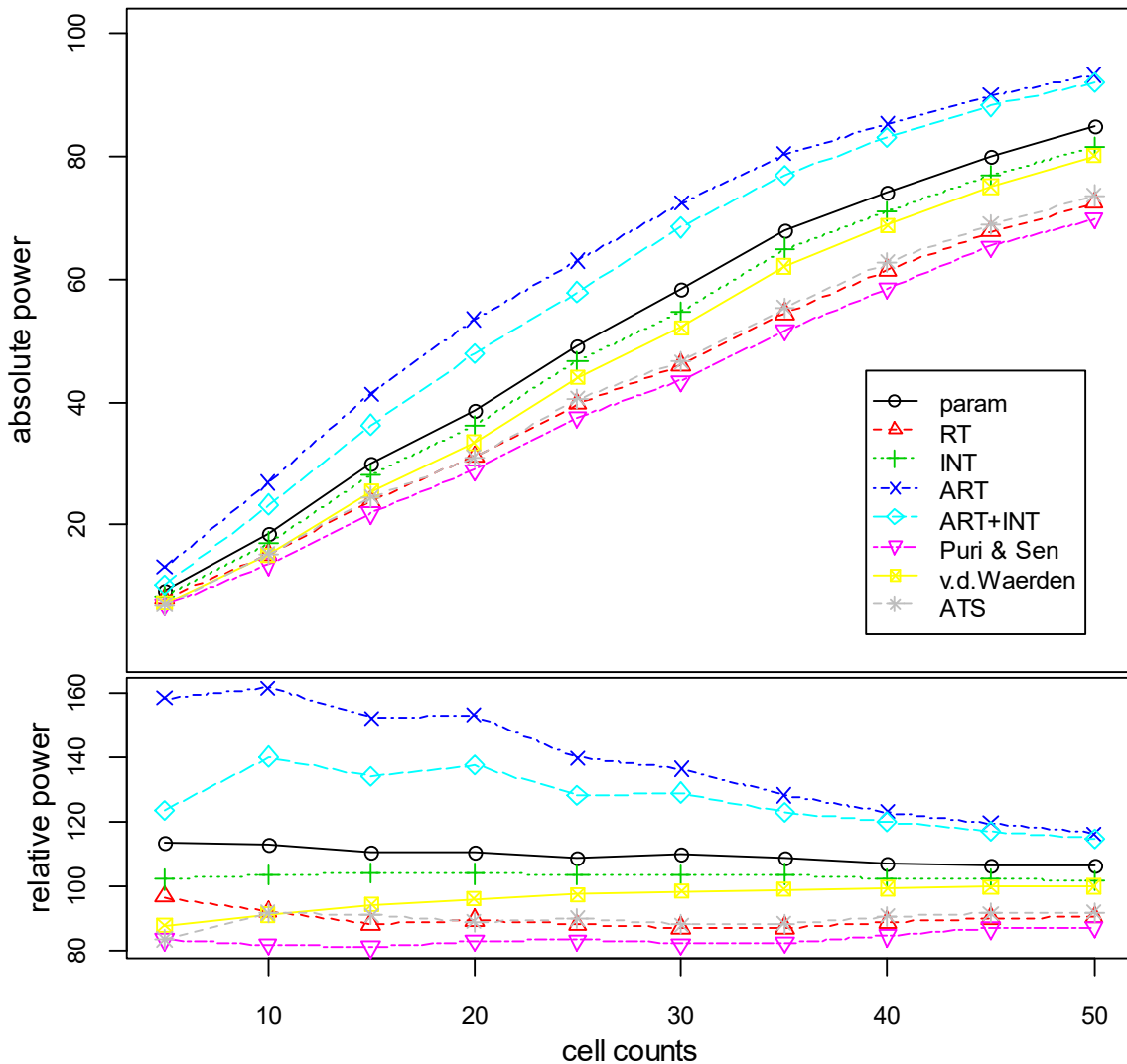
3. 8. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	11.10	20.20	31.75	41.00	50.60	59.35	67.30	73.90	79.10	84.10
RT	10.70	19.25	29.90	39.20	48.90	55.85	64.85	71.90	77.95	82.45
INT	10.80	19.95	31.90	40.35	50.70	58.85	66.95	73.55	79.50	83.80
ART	9.20	19.10	32.15	43.35	53.10	63.75	73.55	78.80	85.45	89.40
ART+INT	8.60	19.85	32.15	43.55	54.55	66.45	75.35	80.90	86.80	90.60
Puri & Sen	9.10	17.65	27.40	36.60	45.70	52.90	61.95	69.75	76.05	80.25
v.d.Waerden	9.40	18.05	28.55	36.60	47.95	55.95	64.20	71.20	77.35	82.15
ATS	7.95	17.30	28.00	36.95	47.40	55.00	63.70	70.95	76.95	81.80



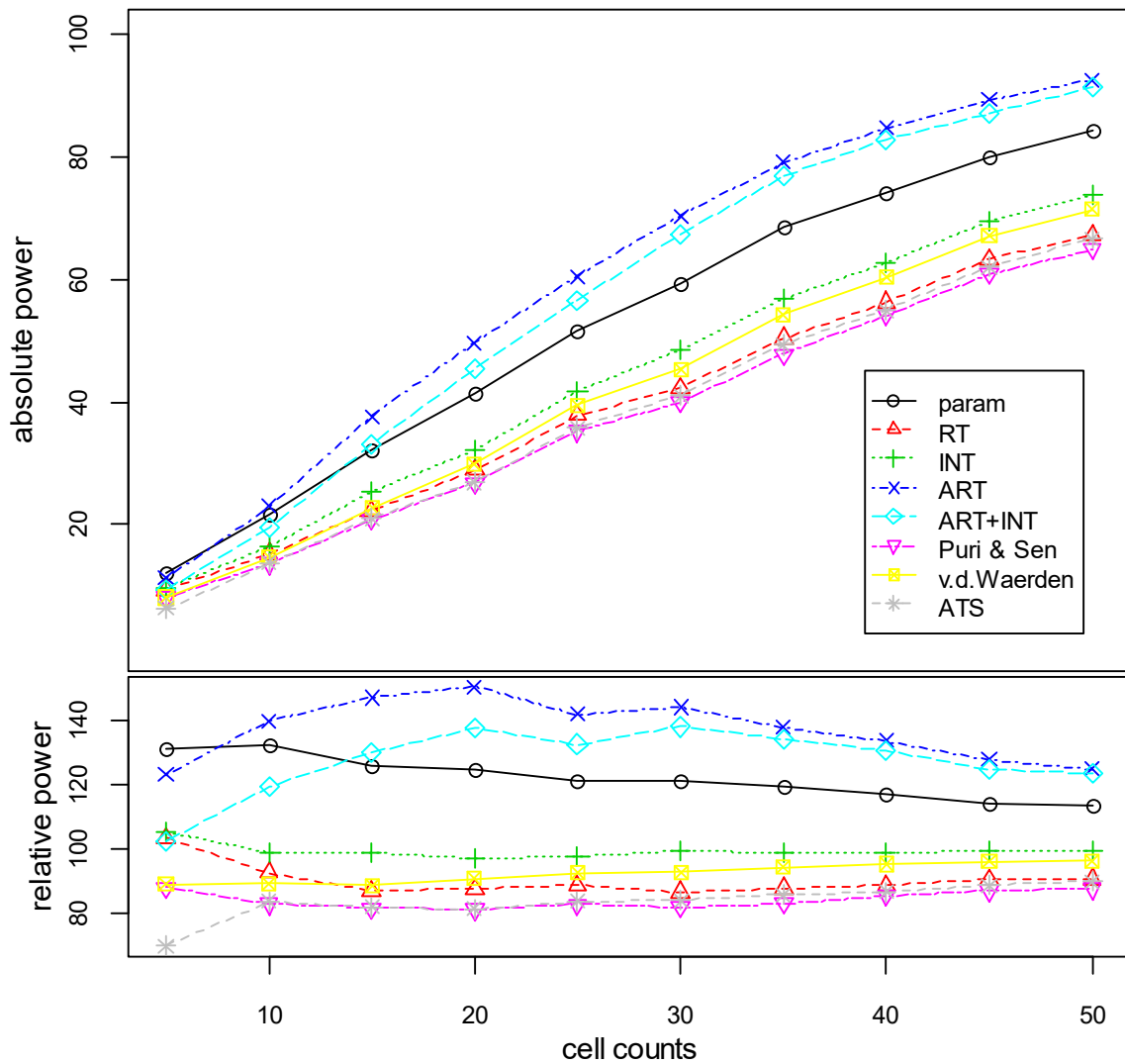
3. 8. 2 normal distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	9.45	18.75	29.90	38.60	49.00	58.25	68.00	74.15	79.90	84.95
RT	8.05	15.30	23.85	31.10	39.65	46.10	54.40	61.45	67.70	72.30
INT	8.50	17.20	28.20	36.15	46.60	54.75	64.95	70.85	76.75	81.50
ART	13.20	26.90	41.25	53.40	62.95	72.30	80.30	85.10	89.85	93.15
ART+INT	10.30	23.35	36.30	47.95	57.85	68.35	76.90	83.05	88.05	91.85
Puri & Sen	6.95	13.60	21.90	28.95	37.45	43.40	51.60	58.40	65.30	69.80
v.d.Waerden	7.30	15.15	25.50	33.40	43.90	52.05	62.00	68.70	74.95	79.95
ATS	6.95	15.25	24.60	30.95	40.50	46.55	55.30	62.70	68.85	73.55



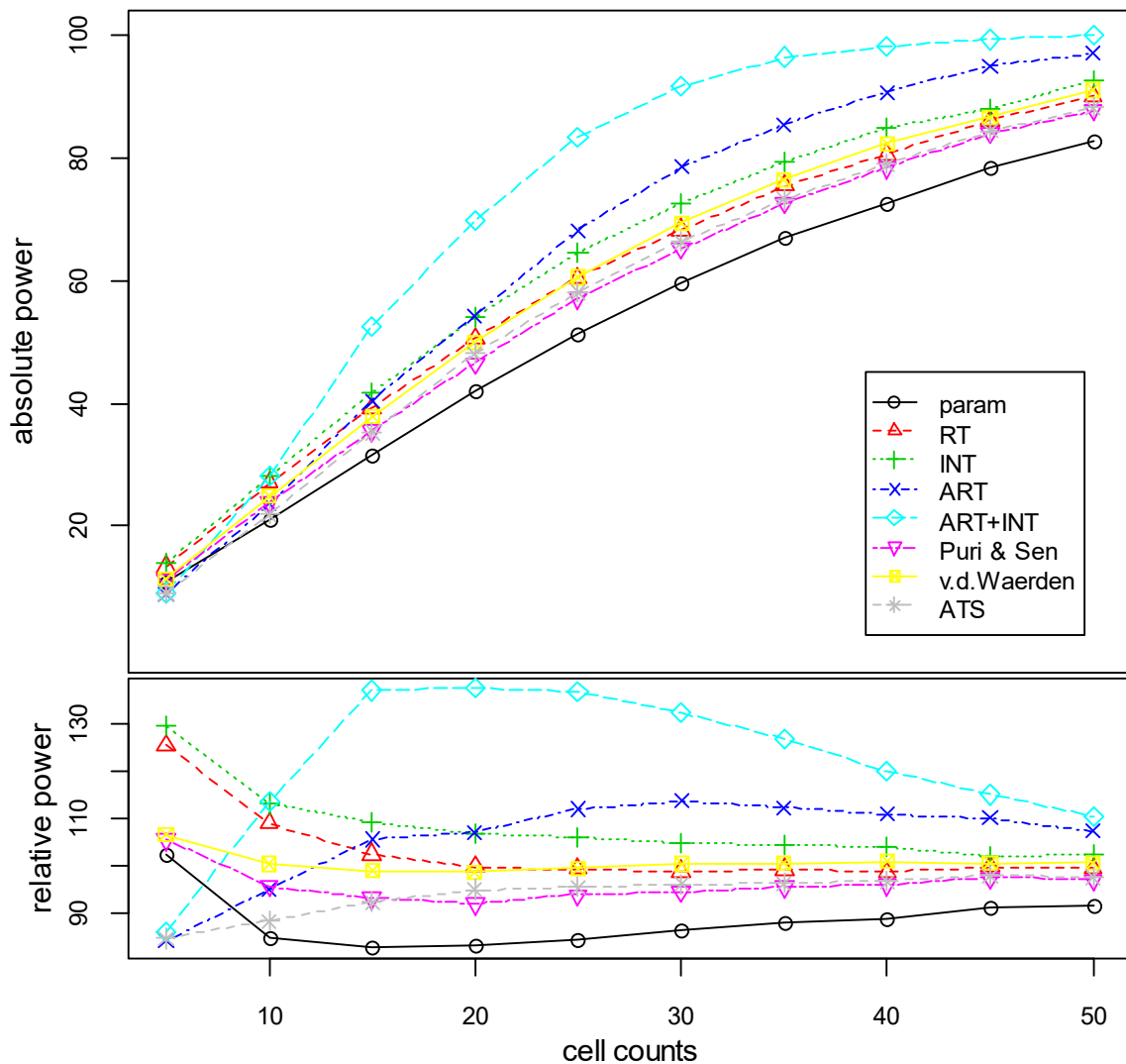
3. 8. 3 normal distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	12.00	21.80	32.20	41.25	51.60	59.15	68.60	74.1	79.75	84.25
RT	9.45	15.25	22.25	28.90	37.80	42.20	50.35	56.2	63.15	67.20
INT	9.65	16.30	25.30	32.05	41.70	48.55	56.70	62.7	69.40	73.85
ART	11.25	23.00	37.60	49.60	60.40	70.25	79.05	84.6	89.20	92.45
ART+INT	9.35	19.65	33.20	45.35	56.45	67.25	76.85	82.6	86.90	91.35
Puri & Sen	8.05	13.65	20.90	26.80	35.25	40.00	47.75	54.1	60.85	64.90
v.d.Waerden	8.15	14.70	22.70	29.95	39.40	45.30	54.25	60.3	67.10	71.35
ATS	6.40	13.80	21.00	26.90	35.70	41.00	49.25	54.9	61.95	66.60



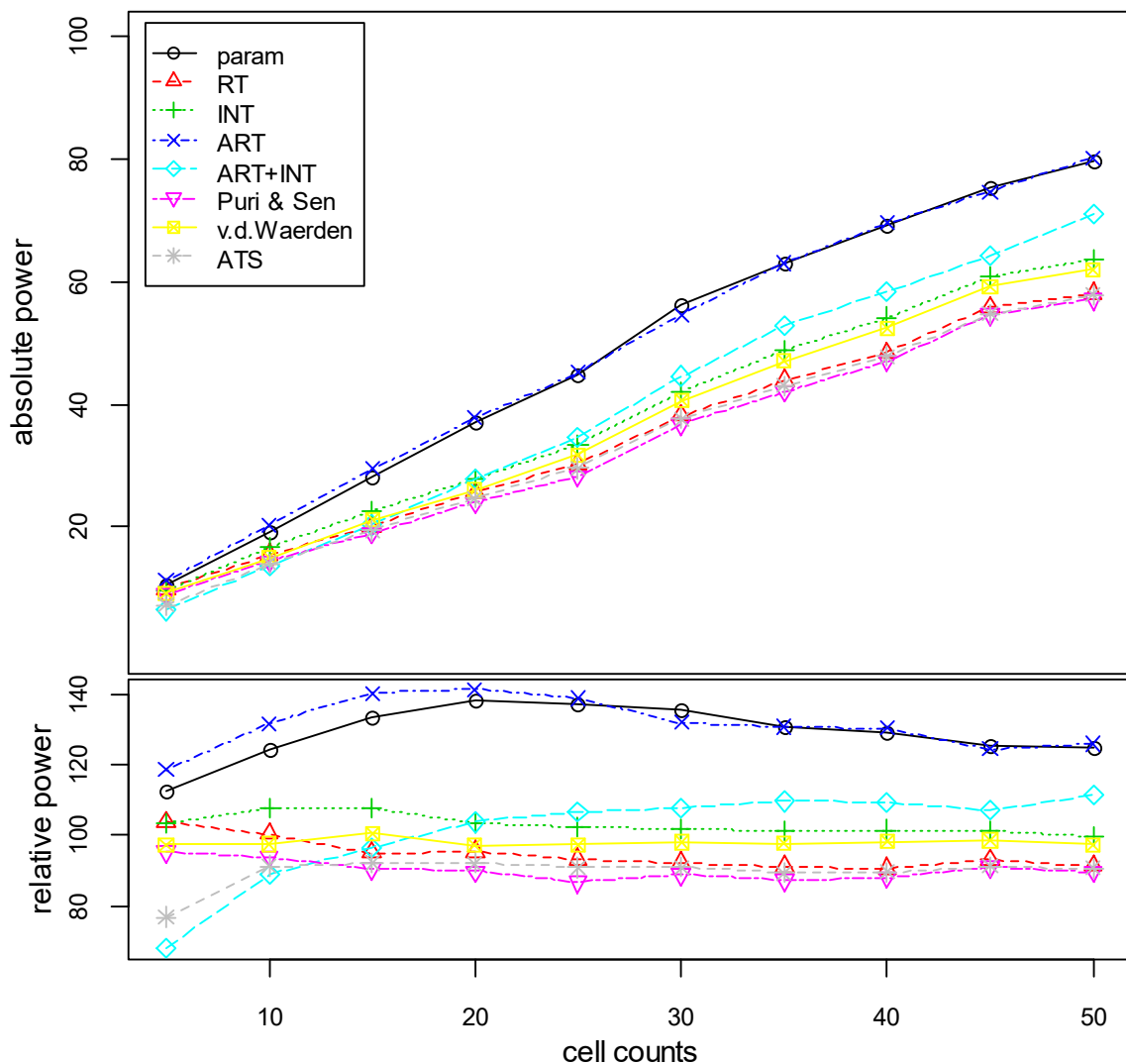
3. 8. 4 right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	10.95	21.05	31.55	42.15	51.35	59.65	66.80	72.40	78.40	82.80
RT	13.45	27.05	39.15	50.50	60.40	68.25	75.40	80.50	85.95	89.90
INT	13.90	28.05	41.70	54.10	64.45	72.40	79.25	84.85	88.00	92.50
ART	9.00	23.60	40.35	54.20	68.15	78.50	85.35	90.55	94.90	96.95
ART+INT	9.20	28.20	52.40	69.65	83.25	91.55	96.35	97.95	99.15	99.85
Puri & Sen	11.30	23.75	35.55	46.50	57.05	65.25	72.60	78.30	83.95	87.65
v.d.Waerden	11.40	24.90	37.80	49.90	60.50	69.30	76.35	82.30	86.55	90.95
ATS	9.05	21.90	35.25	48.05	58.05	66.30	73.15	78.85	84.35	88.10



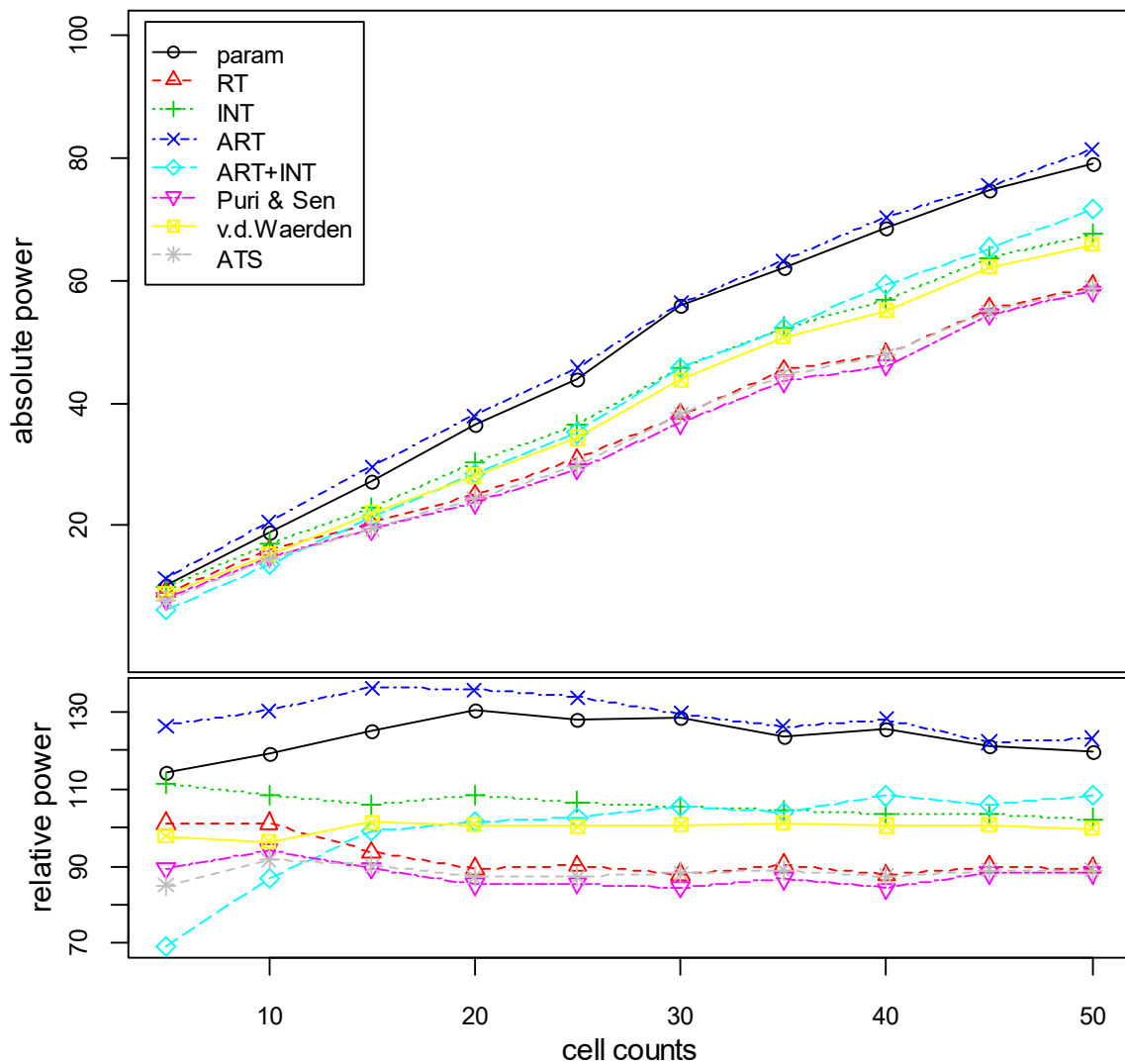
3. 8. 5 exponential distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	10.70	19.15	28.10	37.05	44.65	56.05	62.90	69.00	75.20	79.55
RT	9.85	15.50	20.00	25.55	30.35	38.15	43.90	48.40	55.80	58.10
INT	9.80	16.65	22.70	27.70	33.30	42.10	48.75	54.15	60.70	63.45
ART	11.25	20.30	29.50	37.80	45.15	54.55	62.95	69.55	74.60	80.10
ART+INT	6.45	13.75	20.30	27.75	34.70	44.60	52.75	58.40	64.15	70.90
Puri & Sen	9.05	14.50	19.05	24.05	28.25	36.80	42.05	47.00	54.55	57.05
v.d.Waerden	9.25	15.05	21.15	26.00	31.70	40.55	47.05	52.35	59.15	61.90
ATS	7.30	14.10	19.40	24.65	29.55	37.60	43.05	47.80	54.70	57.75



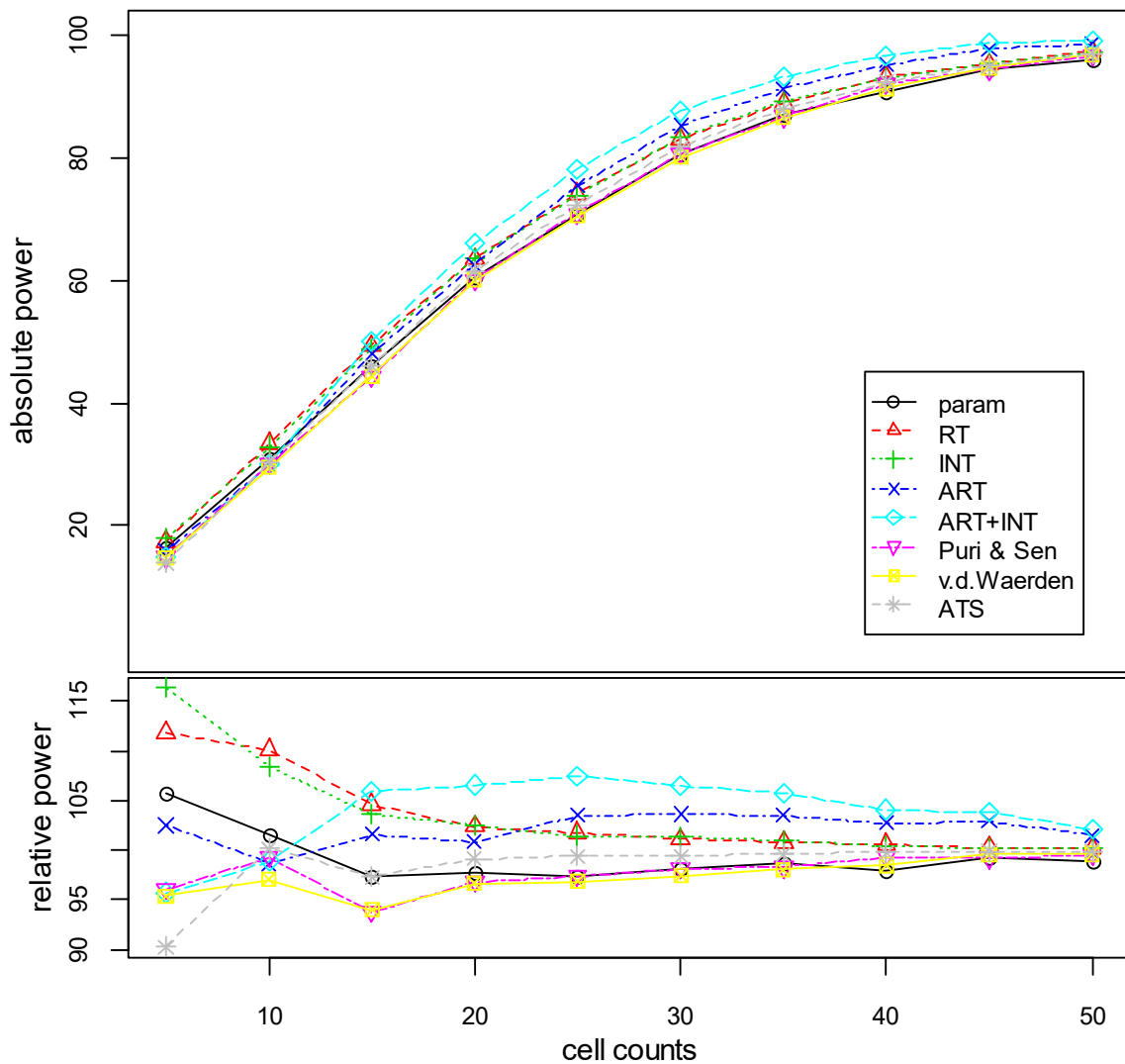
3. 8. 6 exponential distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	10.35	18.90	27.10	36.40	43.75	55.85	62.05	68.60	74.65	79.10
RT	9.15	16.05	20.30	24.95	30.80	38.10	45.25	47.95	55.40	59.10
INT	10.10	17.20	22.95	30.25	36.45	45.80	52.30	56.65	63.70	67.50
ART	11.45	20.70	29.55	37.90	45.70	56.30	63.20	70.20	75.30	81.30
ART+INT	6.25	13.80	21.50	28.35	35.10	45.75	52.10	59.20	65.25	71.60
Puri & Sen	8.10	14.95	19.40	23.85	29.20	36.70	43.50	46.05	54.40	58.20
v.d.Waerden	8.85	15.30	22.00	28.15	34.30	43.75	50.70	55.00	62.10	65.80
ATS	7.70	14.55	19.55	24.35	29.80	38.25	44.55	47.80	54.85	58.75



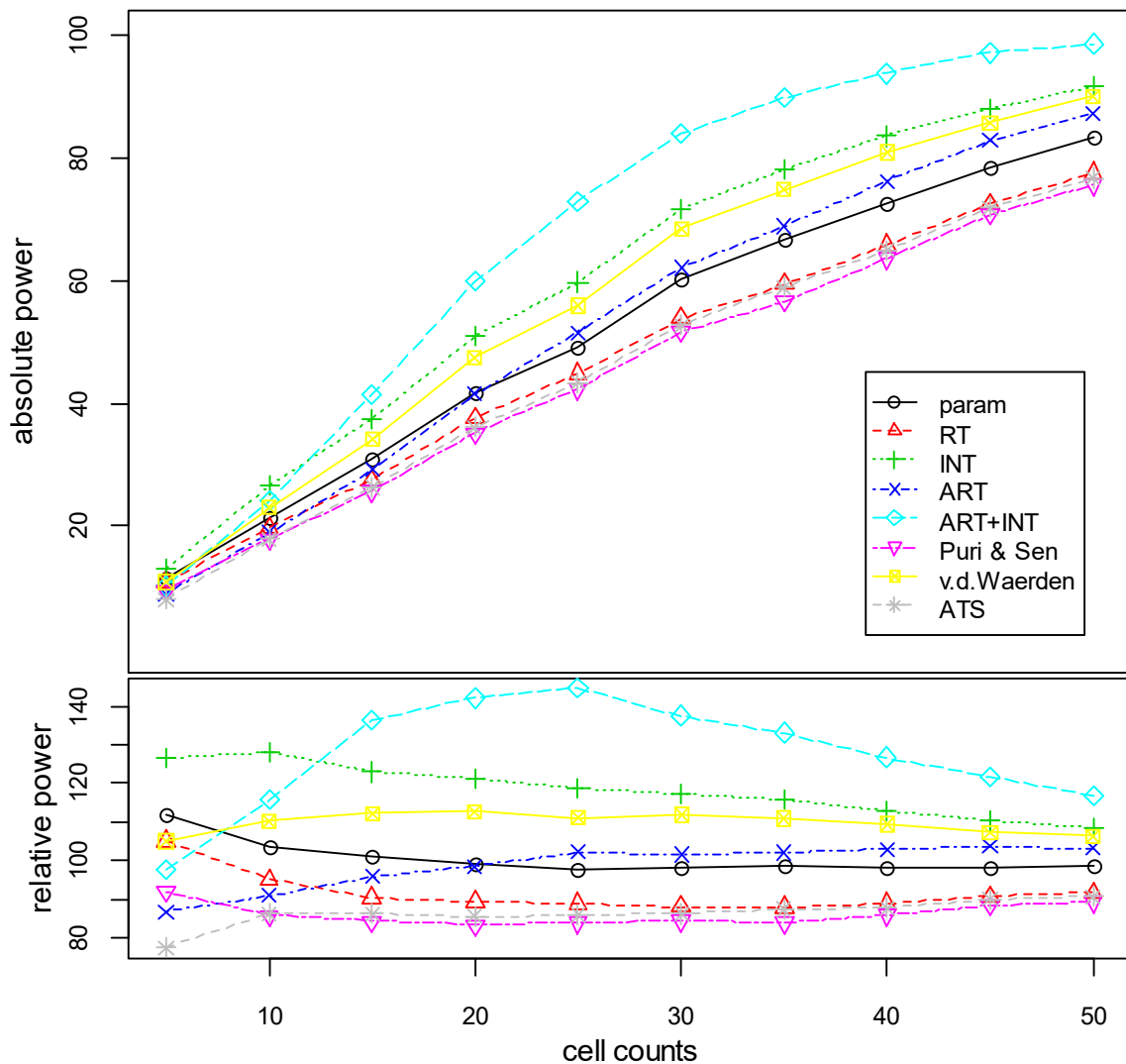
3. 8. 7 lognormal distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	16.40	30.85	45.95	60.55	70.80	80.60	87.00	90.65	94.25	95.95
RT	17.35	33.45	49.35	63.50	74.05	83.05	88.85	93.15	95.20	97.30
INT	18.05	32.90	48.90	63.60	73.80	83.20	89.00	92.90	95.15	97.20
ART	15.90	29.95	47.95	62.55	75.30	85.10	91.25	95.10	97.70	98.45
ART+INT	14.85	30.05	50.00	66.10	78.15	87.45	93.25	96.40	98.65	99.05
Puri & Sen	14.90	30.15	44.25	60.05	70.85	80.60	86.65	91.95	94.25	96.55
v.d.Waerden	14.80	29.45	44.35	59.95	70.45	80.00	86.45	91.20	94.55	96.70
ATS	14.00	30.40	45.90	61.45	72.30	81.60	87.75	92.35	94.85	96.95



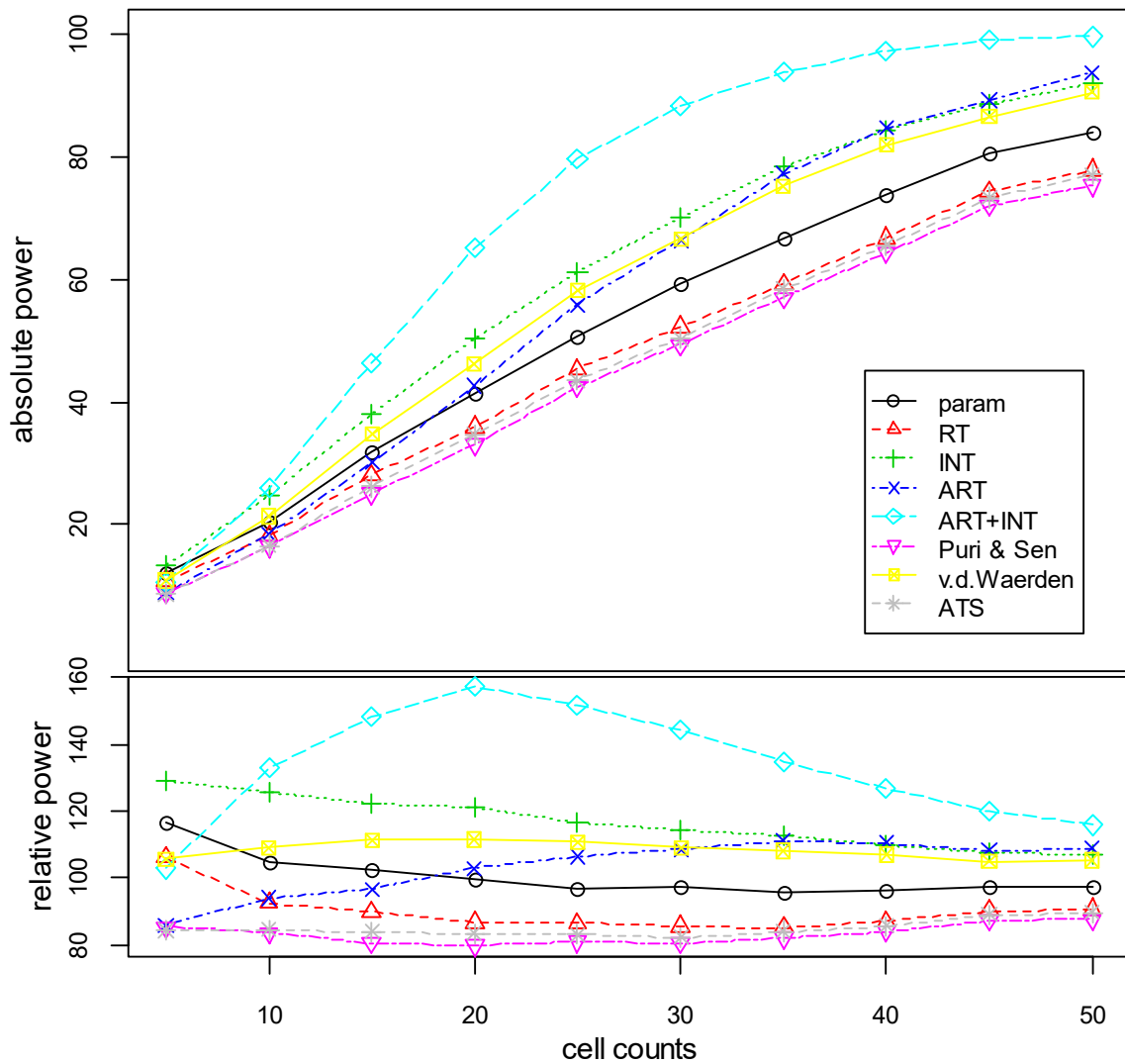
3. 8. 8 uniform distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	11.60	21.50	30.85	41.80	49.15	60.05	66.55	72.65	78.30	83.35
RT	10.90	19.80	27.50	37.65	44.80	53.85	59.35	65.75	72.35	77.50
INT	13.15	26.60	37.40	51.05	59.70	71.55	78.10	83.45	87.95	91.65
ART	9.00	18.95	29.20	41.45	51.50	62.05	68.80	76.05	82.80	87.15
ART+INT	10.15	24.05	41.45	59.75	72.70	84.00	89.70	93.60	97.00	98.50
Puri & Sen	9.55	17.85	25.65	35.10	42.30	51.65	56.60	63.50	70.75	75.55
v.d.Waerden	10.90	22.95	34.15	47.45	55.85	68.35	74.75	80.80	85.70	89.90
ATS	8.05	17.95	26.30	36.05	43.30	52.70	58.90	64.85	71.80	76.65



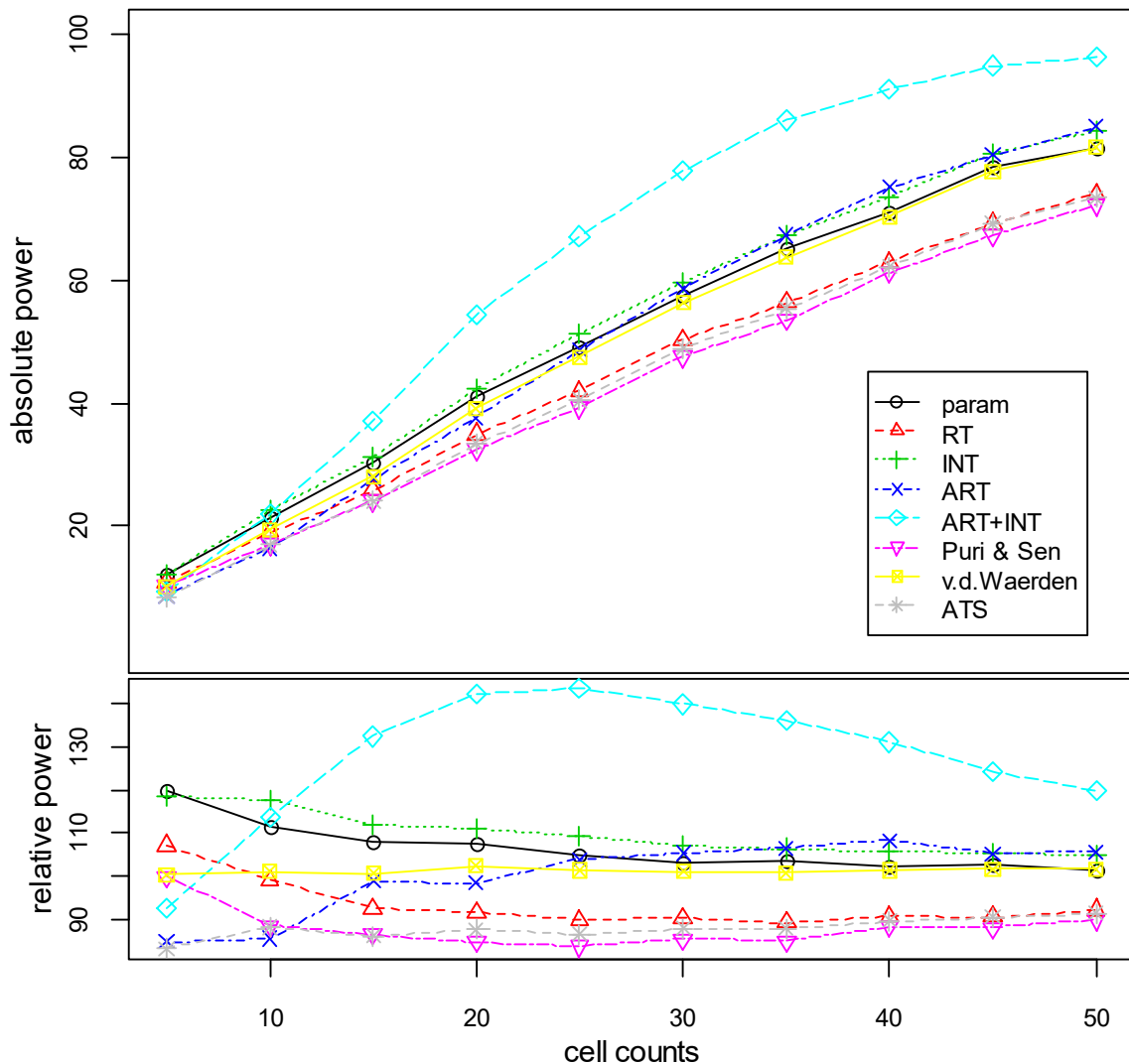
3. 8. 9 uniform distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	12.05	20.60	31.90	41.25	50.60	59.40	66.70	73.70	80.35	83.75
RT	10.95	18.15	28.00	35.90	45.35	52.25	59.20	66.65	74.25	77.75
INT	13.30	24.65	38.10	50.25	61.20	70.00	78.40	84.10	88.60	91.95
ART	8.85	18.45	30.10	42.65	55.80	66.35	77.25	84.60	89.10	93.60
ART+INT	10.60	26.10	46.25	65.20	79.65	88.30	93.65	97.15	98.95	99.45
Puri & Sen	8.80	16.40	25.05	33.05	42.40	49.25	56.95	64.30	72.00	75.20
v.d.Waerden	10.90	21.40	34.65	46.25	58.10	66.60	75.15	81.85	86.40	90.40
ATS	8.70	16.60	26.15	34.60	43.50	50.20	58.40	65.55	73.25	77.00



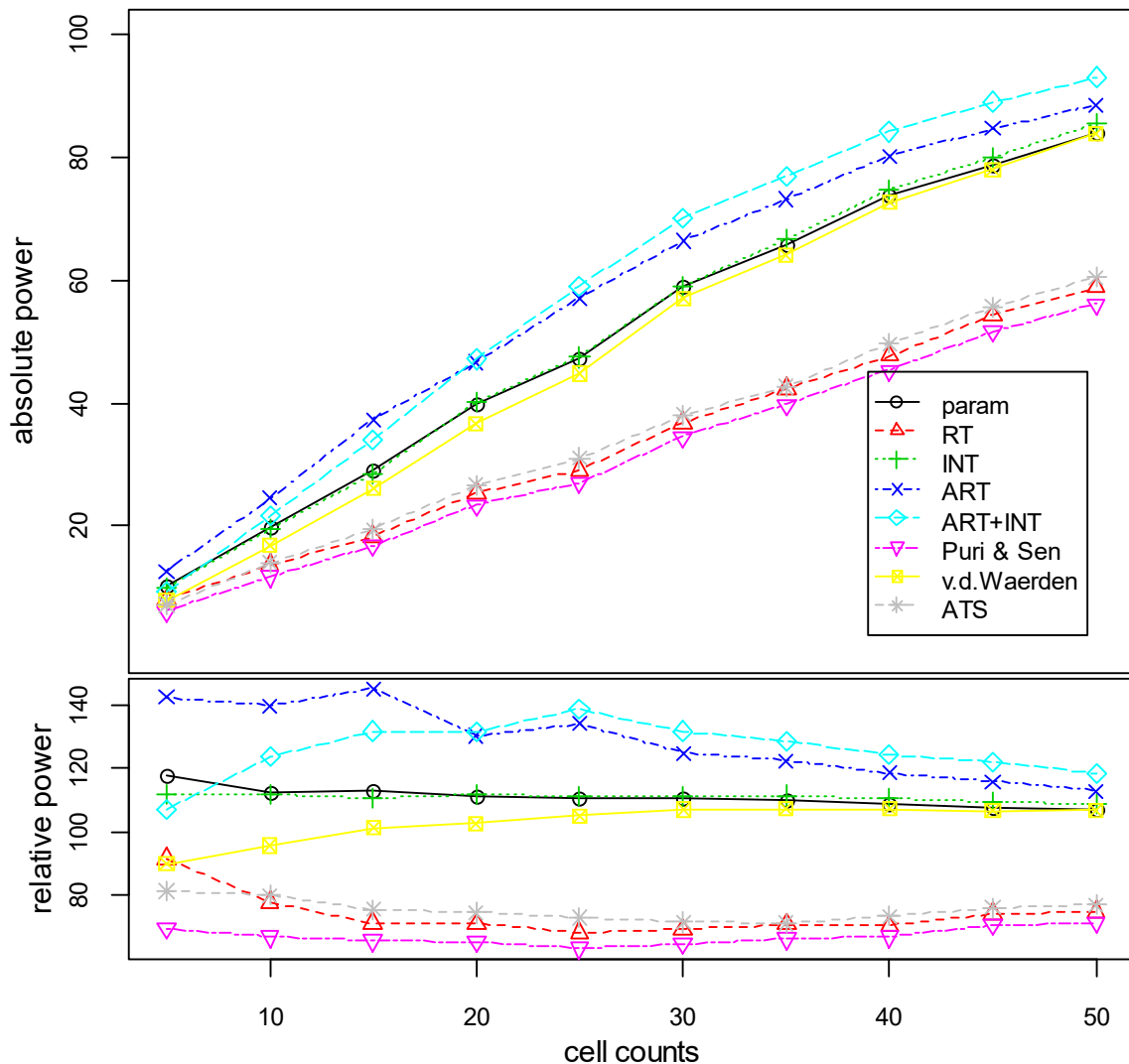
3. 8. 10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	12.25	21.40	30.20	41.10	49.10	57.45	65.25	70.85	78.30	81.40
RT	10.95	19.05	25.80	35.00	41.95	50.20	56.30	62.80	69.15	73.95
INT	12.10	22.60	31.25	42.40	51.15	59.65	67.15	73.30	80.50	84.05
ART	8.65	16.45	27.60	37.60	48.55	58.60	67.25	75.05	80.30	84.85
ART+INT	9.45	21.85	37.00	54.45	67.10	77.85	85.90	90.90	94.80	96.15
Puri & Sen	10.20	17.00	24.15	32.40	39.15	47.50	53.55	61.25	67.20	72.10
v.d.Waerden	10.25	19.45	28.10	39.10	47.40	56.25	63.60	70.25	77.70	81.55
ATS	8.50	16.95	24.05	33.45	40.45	48.90	55.40	62.10	69.10	73.30



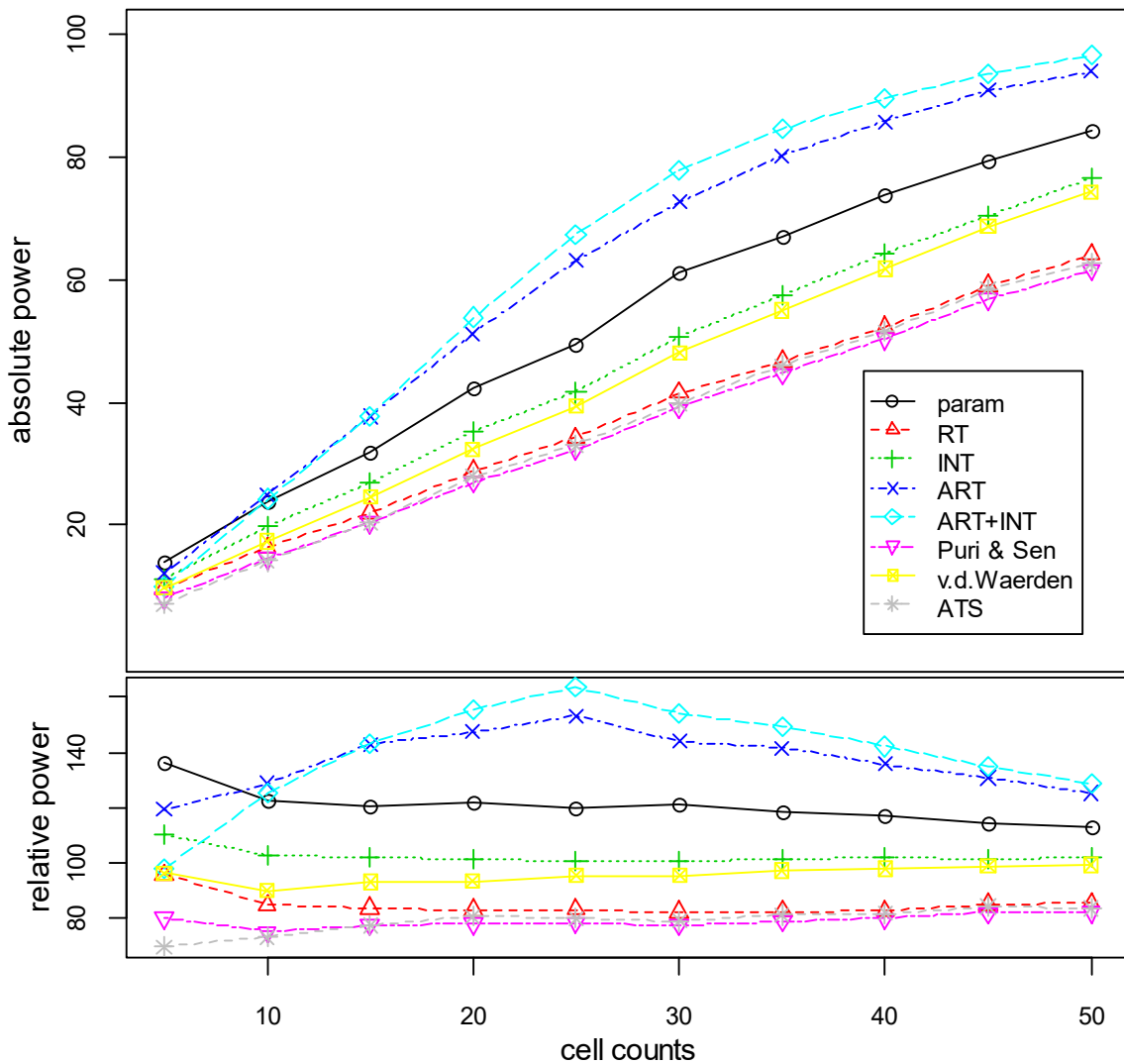
3. 8. 11 left skewed distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	10.40	19.75	29.00	39.70	47.10	58.80	65.85	73.70	78.70	84.00
RT	8.10	13.65	18.35	25.40	29.05	36.85	42.35	47.65	54.20	58.75
INT	9.90	19.65	28.40	40.05	47.40	59.05	66.65	74.75	79.90	85.45
ART	12.60	24.55	37.30	46.60	57.05	66.35	73.10	80.15	84.60	88.45
ART+INT	9.45	21.75	33.90	47.10	59.05	70.10	76.75	84.05	88.95	92.95
Puri & Sen	6.15	11.75	16.90	23.40	26.95	34.50	39.75	45.25	51.60	56.05
v.d.Waerden	7.95	16.80	26.05	36.70	44.75	56.95	64.10	72.60	77.90	83.85
ATS	7.20	14.05	19.45	26.65	31.05	38.05	42.60	49.65	55.60	60.45



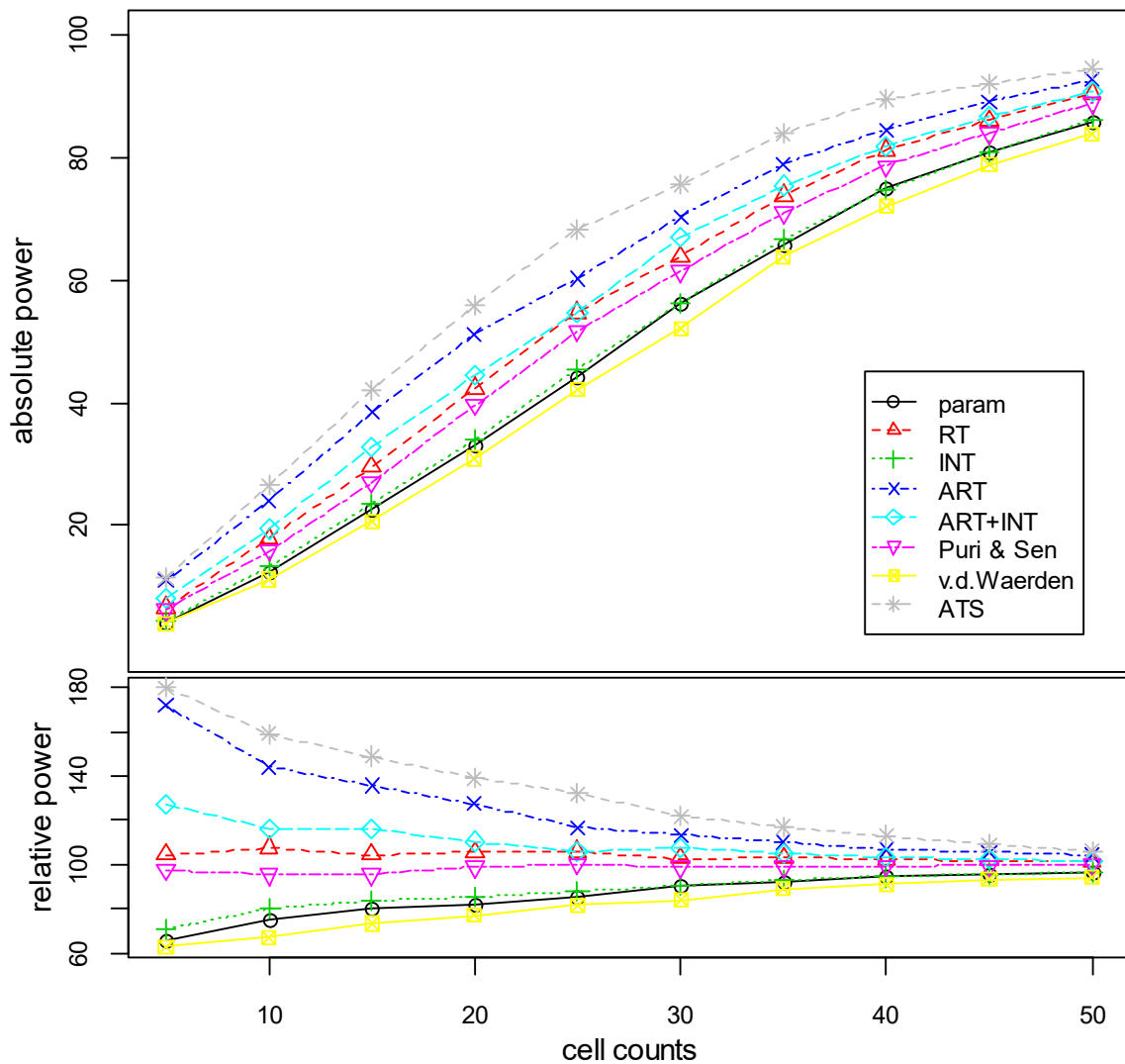
3. 8. 12 left skewed distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	13.90	23.70	31.85	42.30	49.45	61.15	66.95	73.85	79.15	84.30
RT	9.75	16.40	22.05	28.75	34.25	41.50	46.60	52.15	59.00	64.00
INT	11.20	19.95	26.95	35.15	41.55	50.70	57.40	64.20	70.40	76.50
ART	12.15	24.95	37.70	51.10	63.05	72.60	80.05	85.60	90.70	93.80
ART+INT	9.95	24.30	37.80	53.85	67.25	77.65	84.45	89.55	93.50	96.45
Puri & Sen	8.15	14.55	20.45	27.05	32.25	39.10	44.65	50.30	56.75	61.45
v.d.Waerden	9.80	17.40	24.55	32.35	39.30	48.10	54.95	61.70	68.55	74.30
ATS	7.10	14.15	20.40	27.95	32.95	39.75	45.90	51.50	58.45	62.50



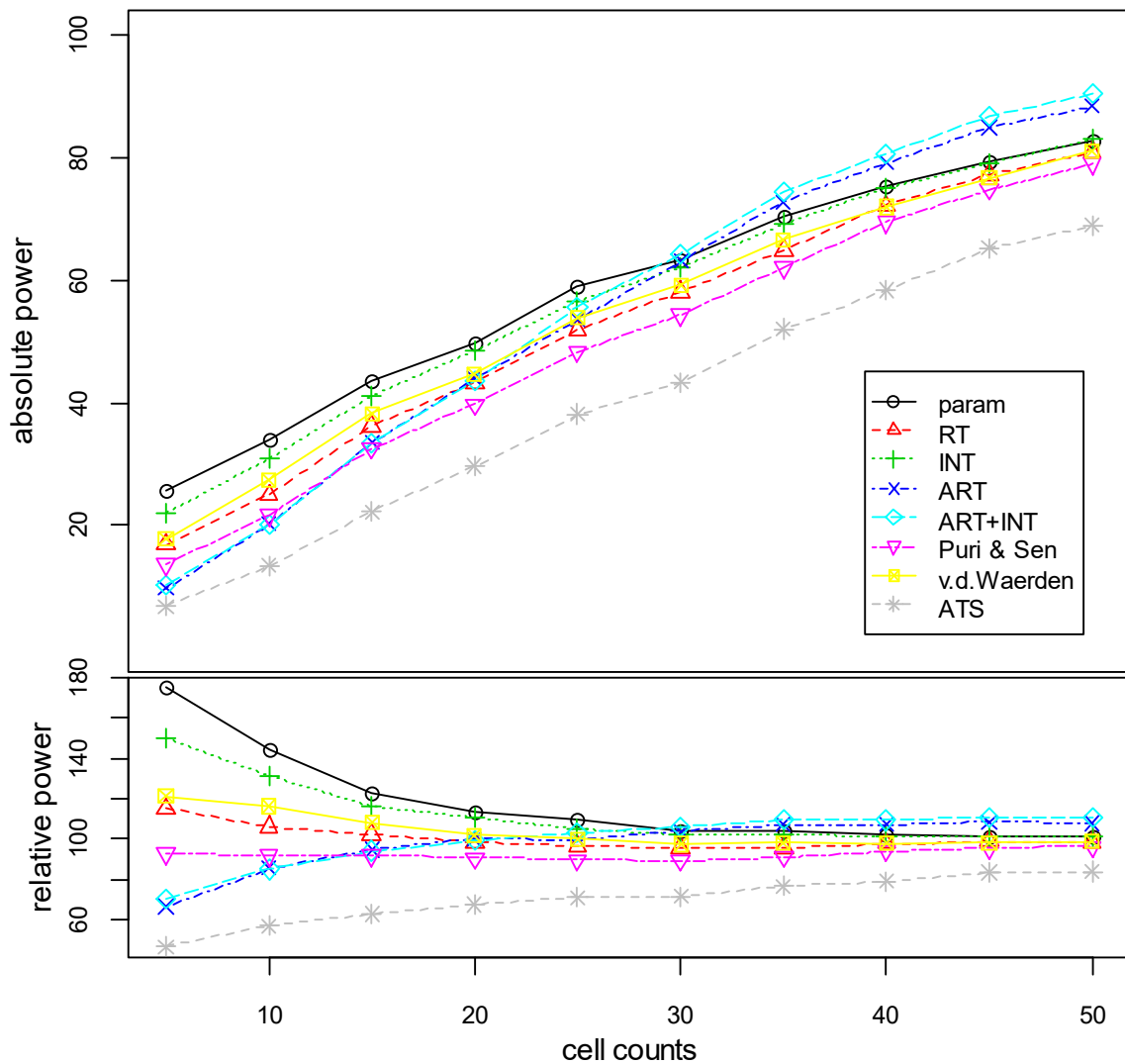
3. 8. 13 normal distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	4.15	12.55	22.55	32.95	44.20	56.05	65.85	74.90	80.70	85.65
RT	6.65	17.95	29.50	42.40	54.70	63.75	73.70	81.20	85.95	90.40
INT	4.50	13.40	23.60	34.10	45.35	56.05	66.60	74.60	80.95	86.05
ART	10.95	24.00	38.35	51.20	60.20	70.30	78.85	84.45	89.00	92.65
ART+INT	8.10	19.40	32.80	44.35	54.65	66.90	75.40	81.80	86.60	90.55
Puri & Sen	6.20	15.95	27.00	39.65	51.65	61.35	70.90	78.55	83.90	88.80
v.d.Waerden	4.00	11.20	20.70	30.95	42.10	52.10	63.75	71.95	78.70	83.80
ATS	11.45	26.55	42.05	55.80	68.15	75.60	83.85	89.45	92.00	94.40



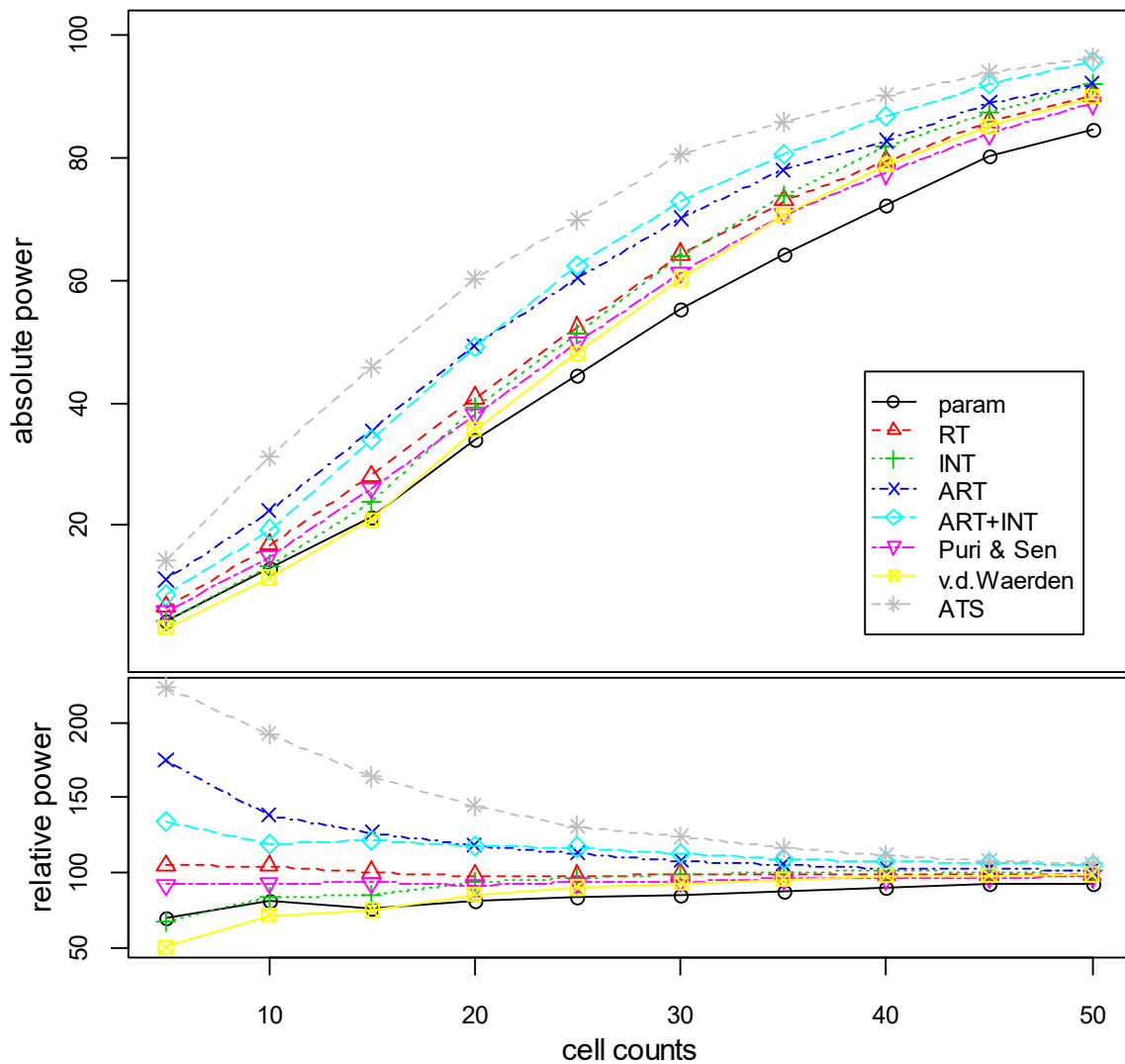
3. 8. 14 normal distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	25.60	34.00	43.45	49.75	58.80	63.30	70.45	75.35	79.25	82.80
RT	16.85	25.00	36.20	43.10	51.95	58.05	64.85	72.10	77.15	80.90
INT	21.90	30.90	41.20	48.50	56.60	62.05	69.25	74.90	78.95	82.90
ART	9.75	20.25	33.50	43.95	53.50	63.00	72.75	79.05	84.80	88.35
ART+INT	10.30	20.05	33.30	43.60	55.55	64.10	74.35	80.45	86.55	90.45
Puri & Sen	13.60	21.65	32.50	39.75	48.25	54.25	62.00	69.35	74.70	78.90
v.d.Waerden	17.75	27.45	38.20	44.70	53.80	59.20	66.50	71.90	76.65	81.05
ATS	6.85	13.45	22.25	29.70	38.15	43.35	52.00	58.30	65.15	68.85



3. 8. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	4.45	13.15	21.35	33.85	44.55	55.35	64.30	72.20	80.15	84.45
RT	6.70	16.90	28.00	40.75	52.15	64.25	72.90	79.40	85.75	90.05
INT	4.35	13.50	23.80	39.10	51.30	63.80	73.65	81.65	87.20	91.75
ART	11.20	22.40	35.50	49.30	60.25	70.05	77.90	82.65	88.95	92.05
ART+INT	8.60	19.35	33.90	49.00	62.45	72.90	80.50	86.60	91.80	95.65
Puri & Sen	5.90	15.05	26.10	38.10	49.75	61.15	70.75	77.45	83.90	88.75
v.d.Waerden	3.25	11.55	20.95	35.60	48.05	60.20	70.55	78.80	85.05	89.80
ATS	14.30	31.15	45.75	60.25	69.85	80.40	85.75	90.15	93.80	96.25

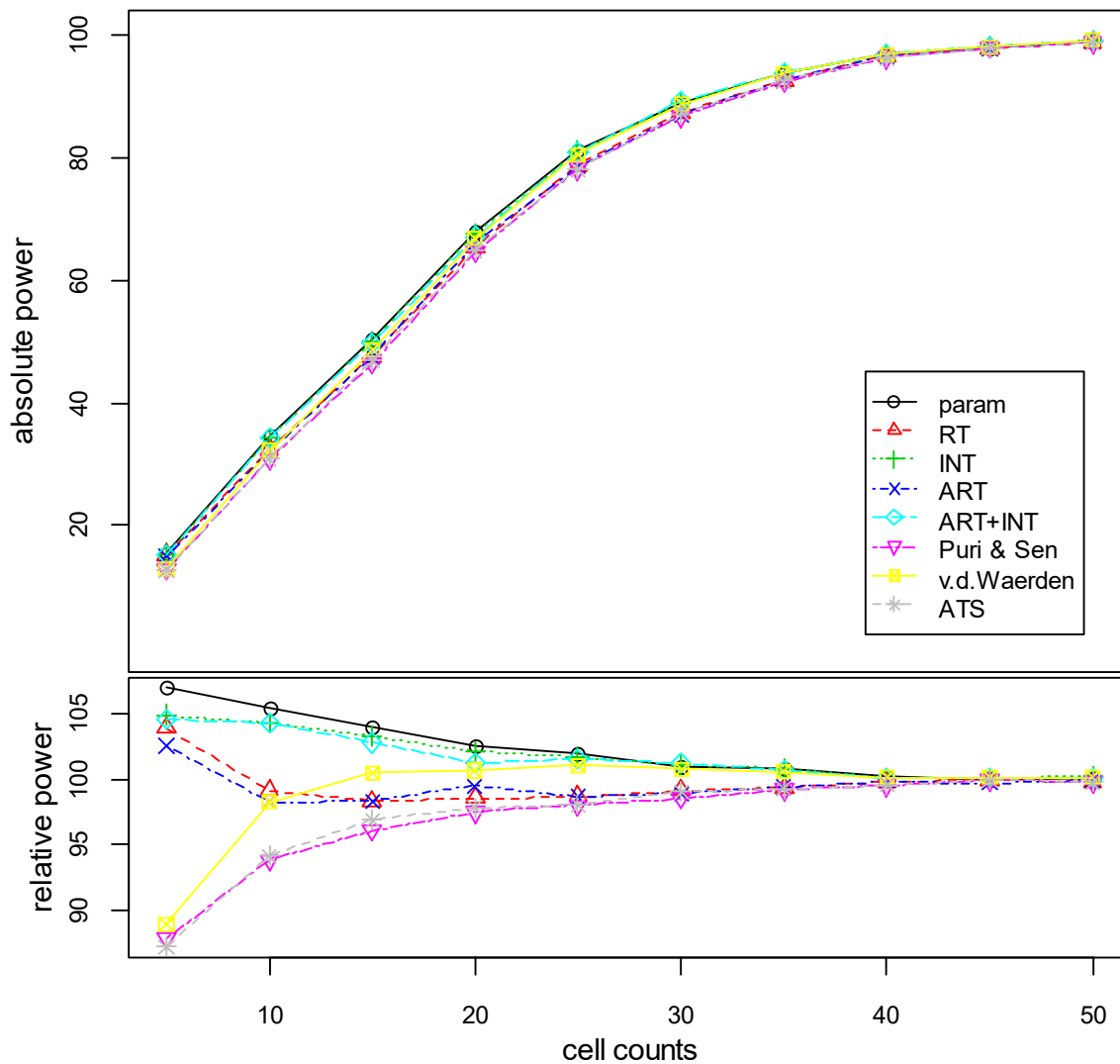


3. 9. Interaction AB

(effects $ab_{ij} = 0.4*s$ / equal n_i / # levels = $2*4$)

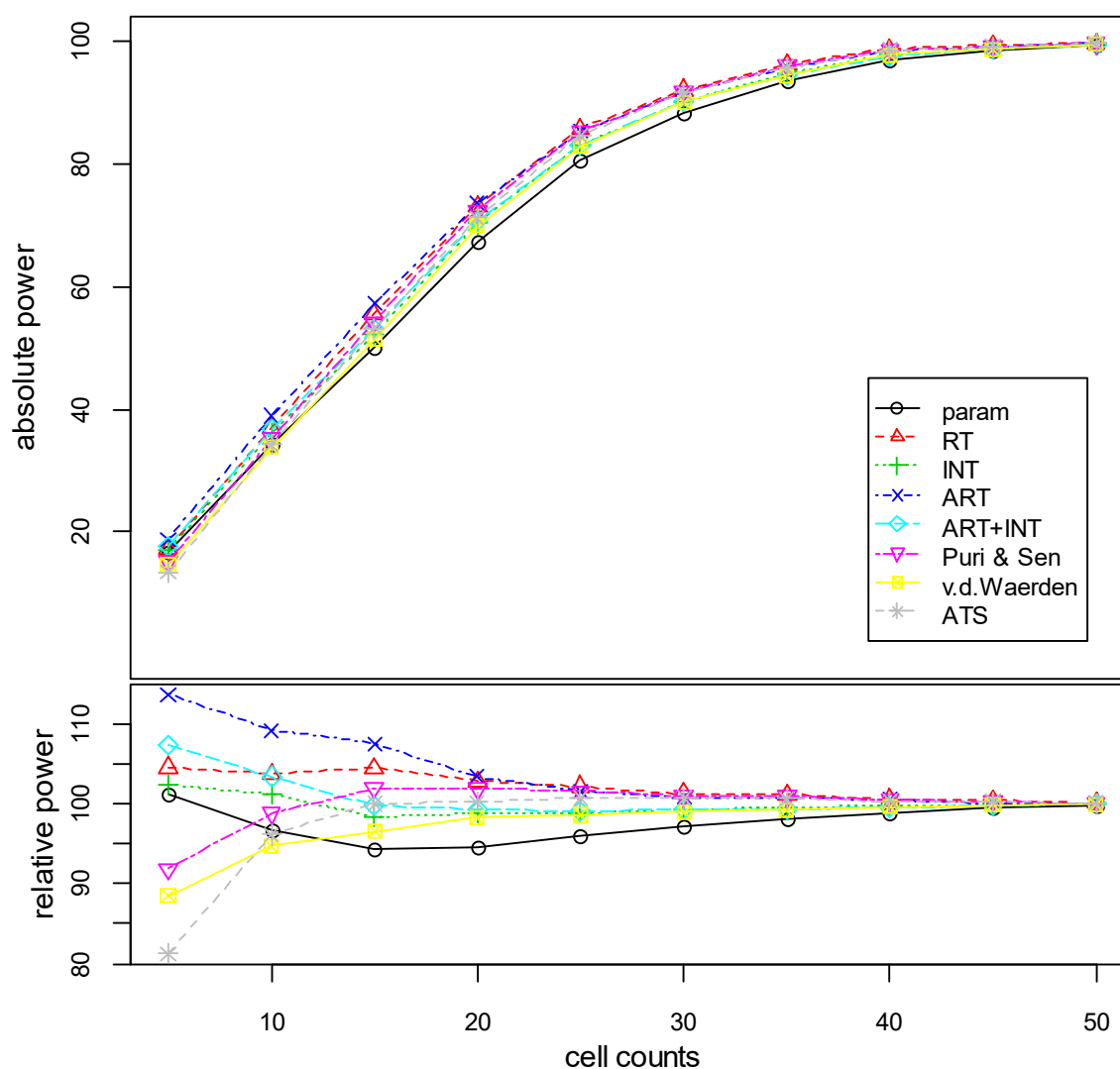
3. 9. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.65	34.60	50.25	67.95	81.10	88.75	93.85	96.80	97.9	99.05
RT	15.20	32.55	47.50	65.30	78.55	87.15	92.45	96.45	97.8	98.70
INT	15.35	34.25	49.90	67.65	80.95	88.90	93.80	96.75	98.0	99.10
ART	15.00	32.25	47.50	65.90	78.50	86.95	92.50	96.45	97.6	98.85
ART+INT	15.30	34.25	49.65	67.10	80.80	89.00	93.70	96.75	98.0	99.05
Puri & Sen	12.85	30.80	46.40	64.60	78.00	86.60	92.35	96.15	97.8	98.70
v.d.Waerden	13.00	32.25	48.55	66.70	80.40	88.60	93.60	96.75	98.0	99.05
ATS	12.75	30.90	46.80	64.80	78.00	87.05	92.40	96.20	97.8	98.70



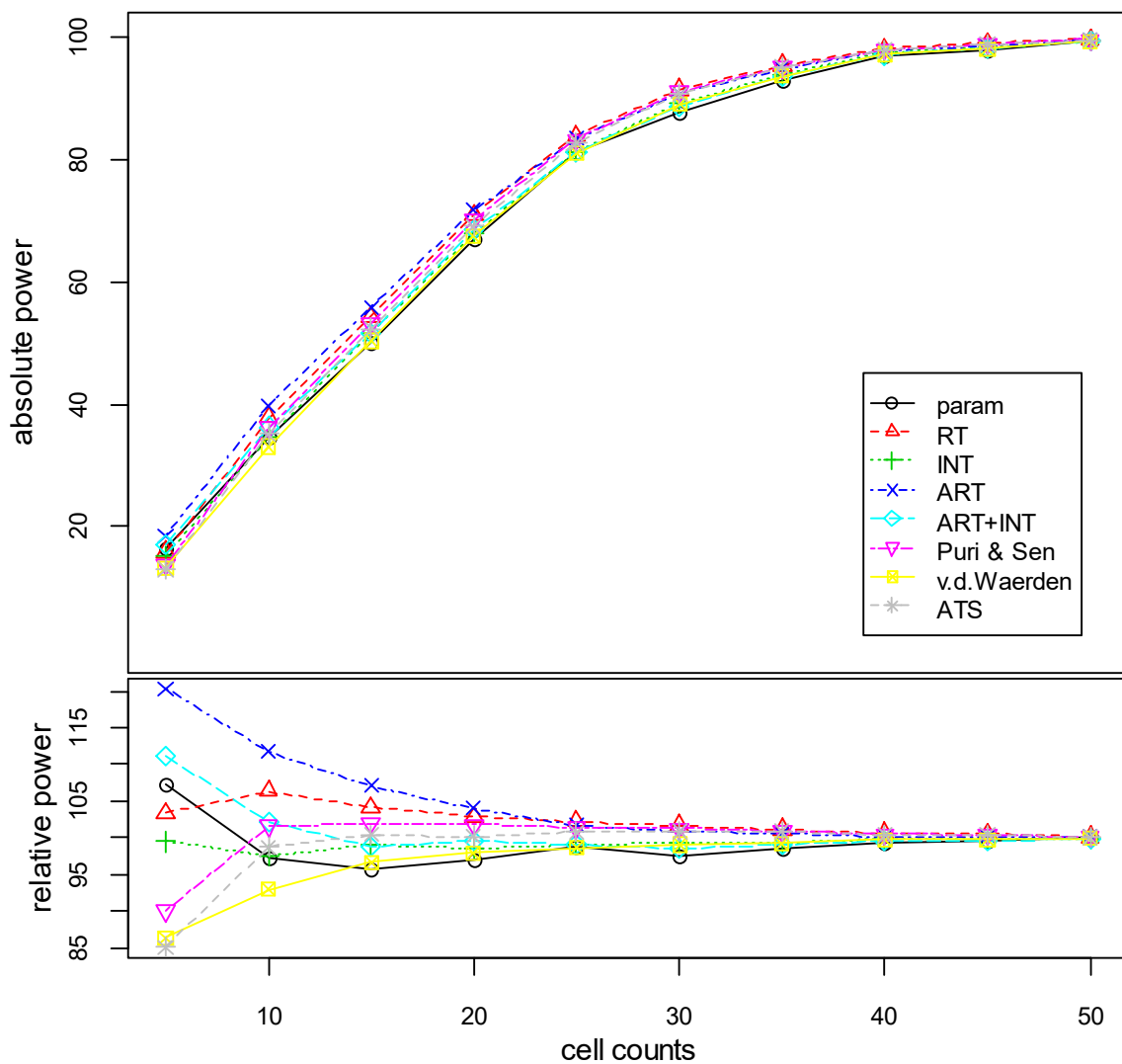
3. 9. 2 normal distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.75	34.45	50.10	67.25	80.5	88.30	93.35	96.85	98.25	99.25
RT	17.30	36.95	55.50	73.05	85.7	91.95	96.10	98.60	99.15	99.55
INT	16.95	36.05	52.25	70.20	82.9	90.10	94.55	97.75	98.60	99.45
ART	18.80	38.90	57.15	73.50	85.2	91.55	95.65	98.50	98.90	99.55
ART+INT	17.75	36.85	53.05	70.60	83.05	90.20	94.40	97.55	98.55	99.40
Puri & Sen	15.20	35.20	54.20	72.40	85.2	91.65	95.90	98.45	99.10	99.55
v.d.Waerden	14.65	33.75	51.30	69.85	82.7	89.90	94.25	97.65	98.60	99.40
ATS	13.45	34.25	53.15	71.20	84.5	91.45	95.60	98.35	99.10	99.55



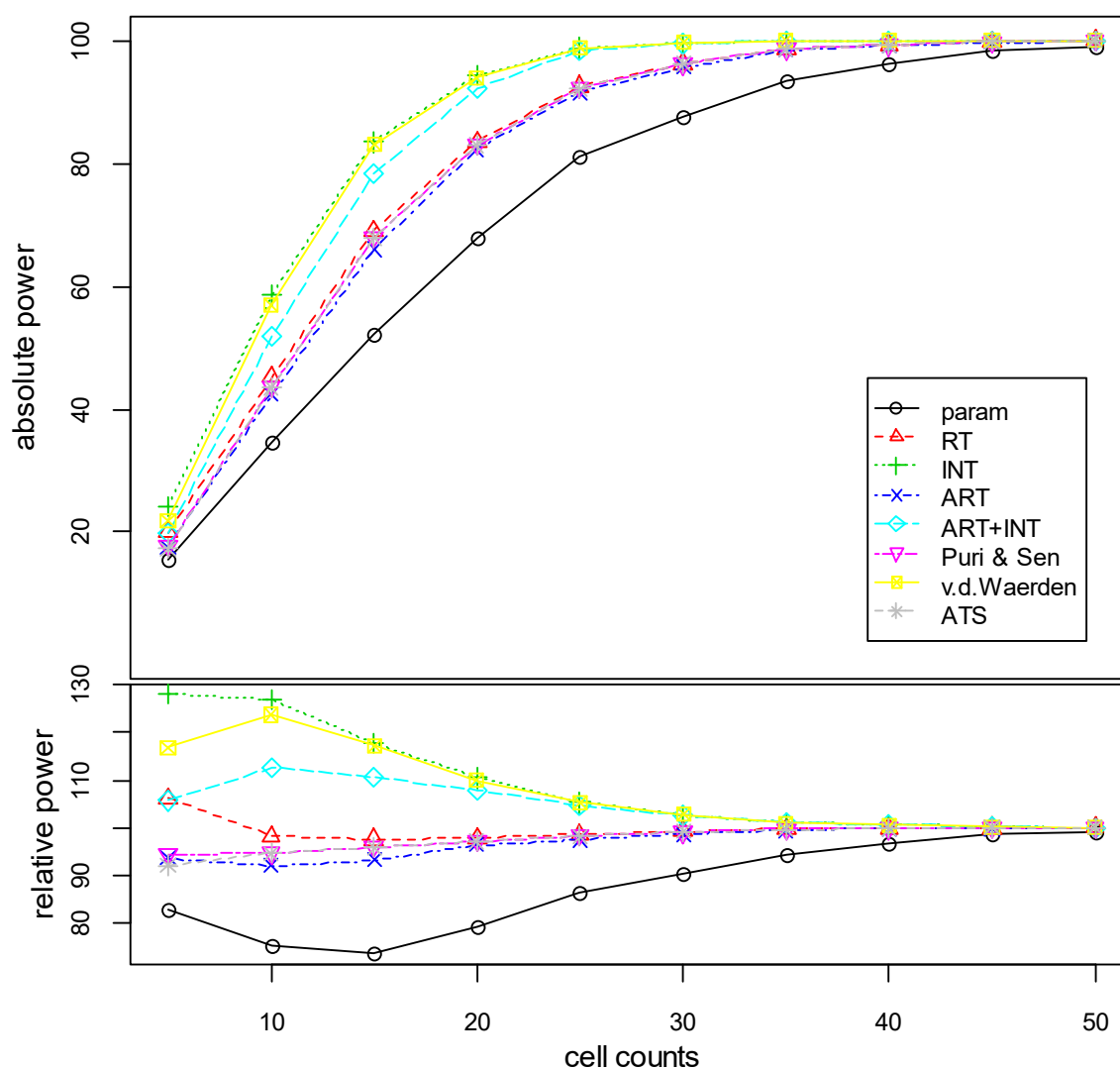
3.9.3 normal distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.45	34.55	49.90	66.90	81.05	87.60	92.80	96.80	97.90	99.30
RT	15.85	37.80	54.25	70.85	83.85	91.30	95.30	98.00	98.85	99.45
INT	15.25	34.70	51.60	67.95	81.15	89.20	93.70	97.30	98.10	99.25
ART	18.45	39.70	55.80	71.70	83.40	90.55	94.75	97.60	98.45	99.45
ART+INT	17.05	36.30	51.45	68.55	81.15	88.40	93.35	97.00	97.95	99.25
Puri & Sen	13.80	36.10	53.10	70.15	83.15	90.95	95.00	97.90	98.75	99.45
v.d.Waerden	13.25	33.05	50.35	67.50	80.90	88.95	93.55	97.15	98.00	99.25
ATS	13.05	35.10	52.30	69.05	82.65	90.55	95.05	97.75	98.70	99.40



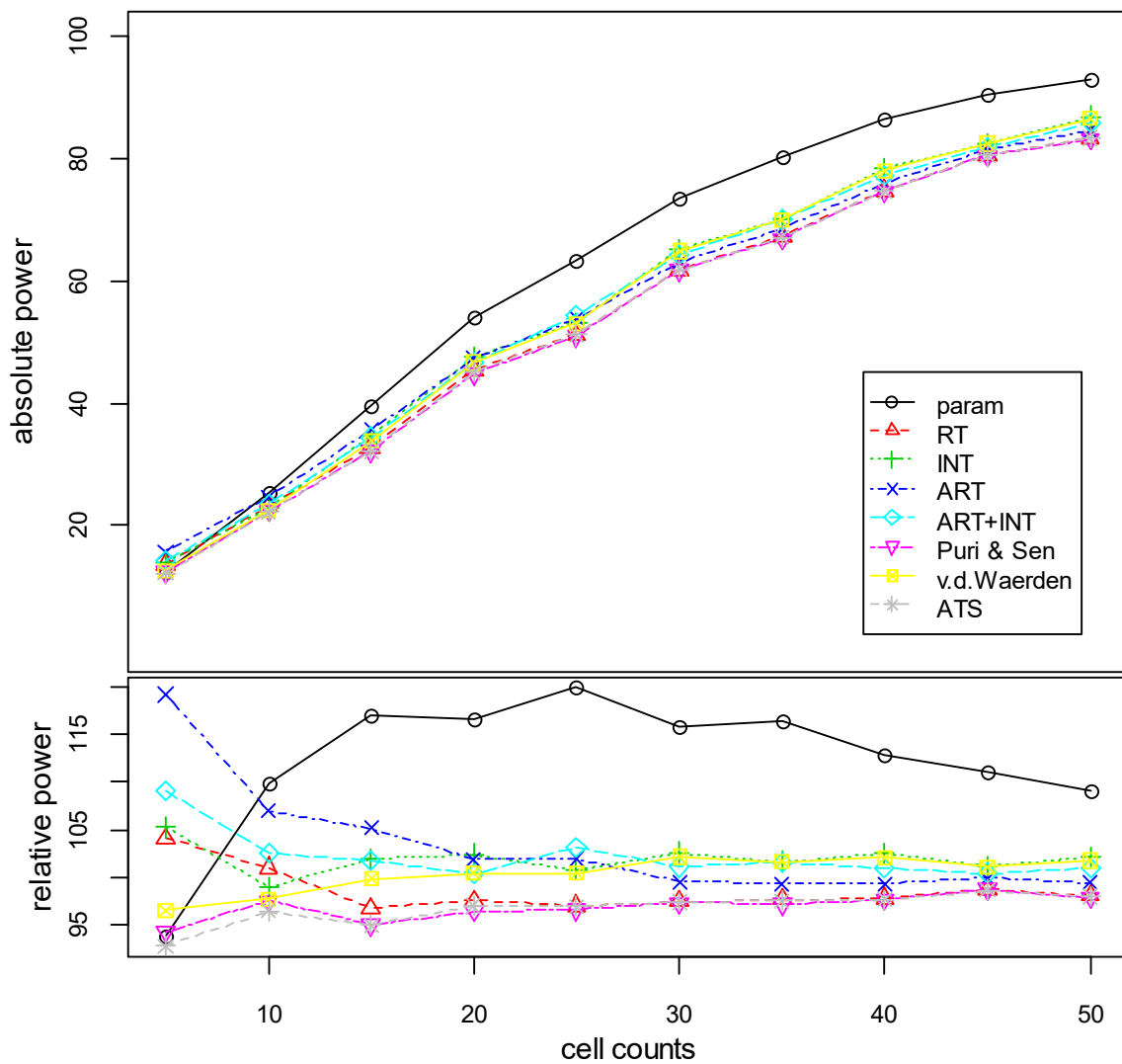
3.9.4 right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.55	34.70	52.05	67.75	81.05	87.45	93.35	96.10	98.5	98.9
RT	19.95	45.20	69.05	83.45	92.55	96.30	98.70	99.30	99.8	100.0
INT	24.05	58.50	83.45	94.35	98.80	99.70	99.95	100.0	100.0	100.0
ART	17.60	42.40	66.00	82.30	91.50	95.65	98.45	99.20	99.7	100.0
ART+INT	19.85	51.80	78.45	92.25	98.30	99.45	99.90	100.0	100.0	100.0
Puri & Sen	17.75	43.60	67.95	83.05	92.35	96.15	98.65	99.25	99.8	100.0
v.d.Waerden	21.95	57.00	83.05	93.90	98.80	99.75	99.95	100.0	100.0	100.0
ATS	17.30	43.55	67.85	82.95	92.15	96.20	98.60	99.25	99.8	100.0



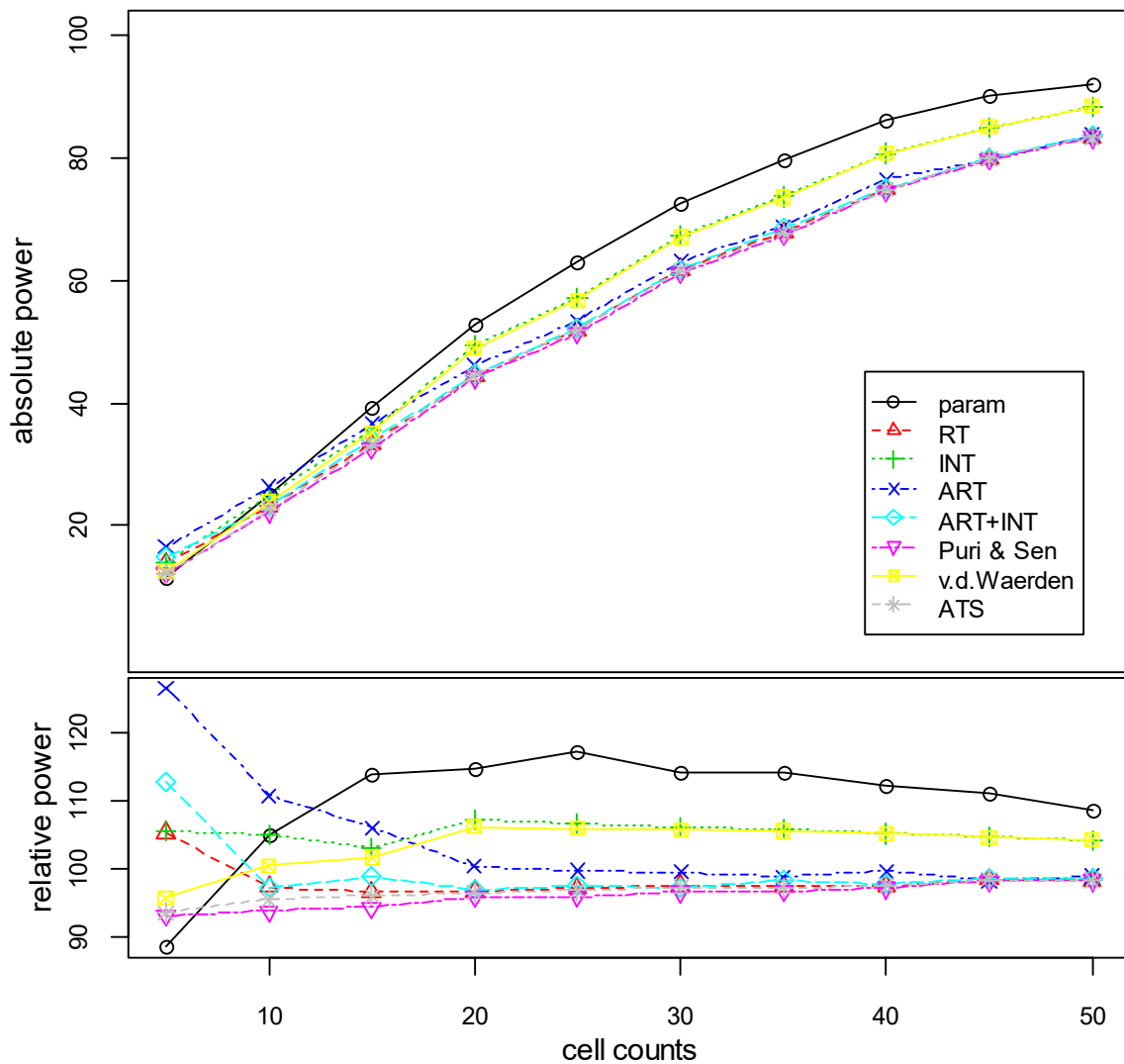
3.9.5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	12.35	25.30	39.65	54.15	63.30	73.50	80.25	86.25	90.50	92.75
RT	13.70	23.25	32.75	45.25	51.15	61.80	67.20	74.65	80.40	83.30
INT	13.85	22.80	34.55	47.55	53.15	65.10	69.95	78.25	82.35	86.80
ART	15.70	24.65	35.65	47.30	53.75	63.10	68.35	75.85	81.35	84.50
ART+INT	14.35	23.60	34.45	46.60	54.40	64.10	69.90	77.15	81.80	85.75
Puri & Sen	12.40	22.45	32.15	44.75	50.90	61.70	66.85	74.55	80.40	83.10
v.d.Waerden	12.70	22.50	33.80	46.60	52.95	64.80	69.95	77.95	82.35	86.45
ATS	12.20	22.20	32.15	45.00	51.10	61.75	67.10	74.55	80.35	83.25



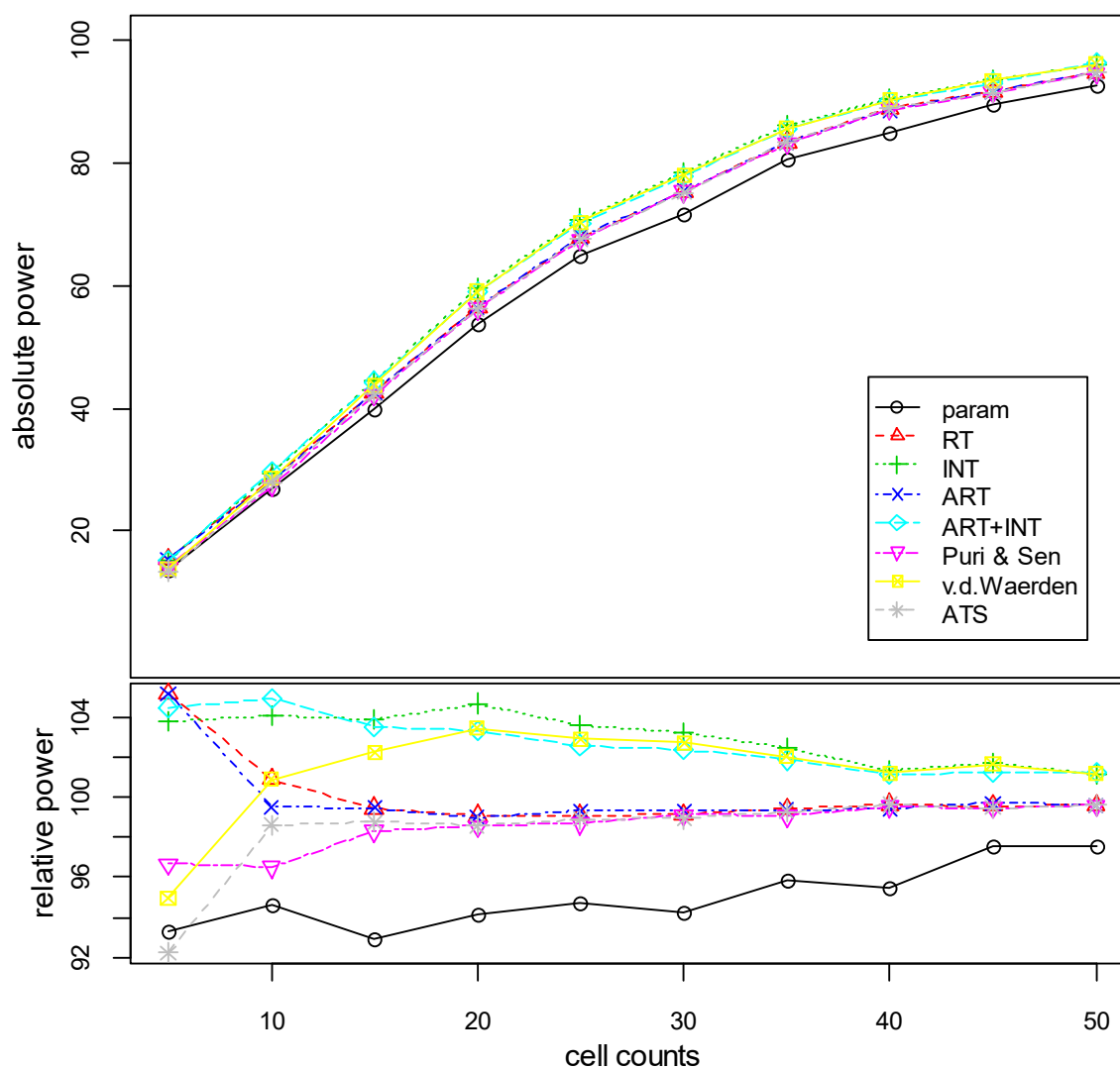
3.9.6 exponential distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	11.60	24.95	39.30	52.75	62.80	72.35	79.50	86.05	90.20	92.05
RT	13.80	23.10	33.35	44.50	51.95	61.75	67.80	74.80	79.85	83.20
INT	13.85	24.95	35.55	49.30	57.10	67.20	73.60	80.65	84.90	88.25
ART	16.60	26.30	36.60	46.15	53.35	63.00	68.70	76.40	79.70	83.70
ART+INT	14.80	23.10	34.15	44.60	52.15	61.60	68.45	75.05	80.00	83.50
Puri & Sen	12.20	22.25	32.55	44.10	51.30	61.15	67.30	74.55	79.65	83.20
v.d.Waerden	12.55	23.85	35.10	48.85	56.70	66.95	73.45	80.65	84.90	88.25
ATS	12.25	22.65	33.15	44.35	51.80	61.55	67.65	74.75	79.85	83.20



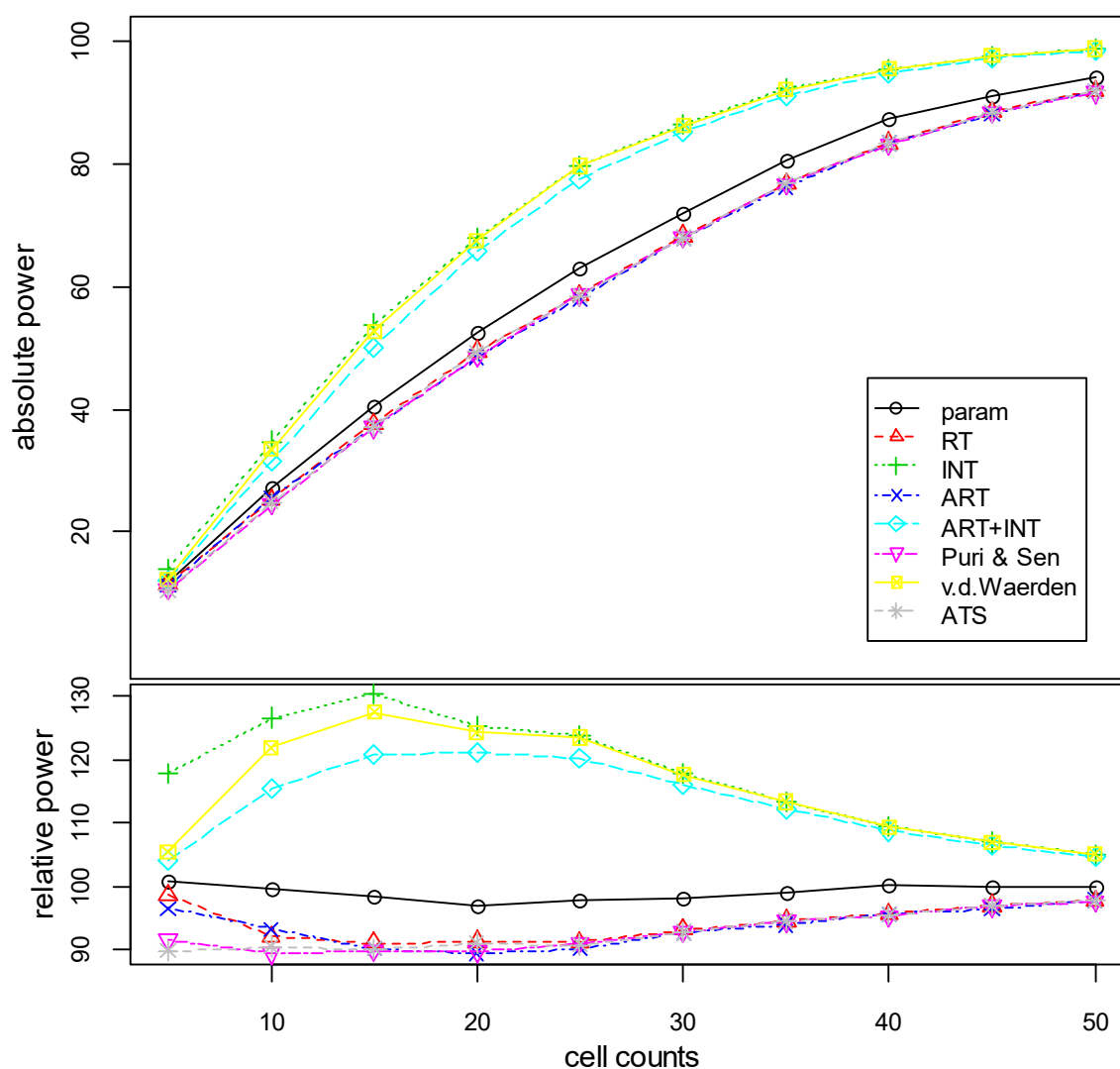
3.9.7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	13.65	26.80	39.75	53.65	64.70	71.50	80.35	84.95	89.55	92.60
RT	15.40	28.60	42.55	56.45	67.70	75.25	83.35	88.70	91.45	94.55
INT	15.20	29.50	44.45	59.65	70.80	78.35	85.90	90.25	93.40	96.05
ART	15.40	28.20	42.55	56.40	67.85	75.40	83.30	88.50	91.55	94.55
ART+INT	15.30	29.75	44.30	58.85	70.10	77.70	85.40	90.05	92.95	96.15
Puri & Sen	14.15	27.35	42.05	56.15	67.40	75.25	83.05	88.60	91.35	94.55
v.d.Waerden	13.90	28.60	43.75	58.95	70.30	78.00	85.55	90.10	93.35	96.05
ATS	13.50	27.95	42.25	56.15	67.55	75.10	83.25	88.70	91.35	94.55



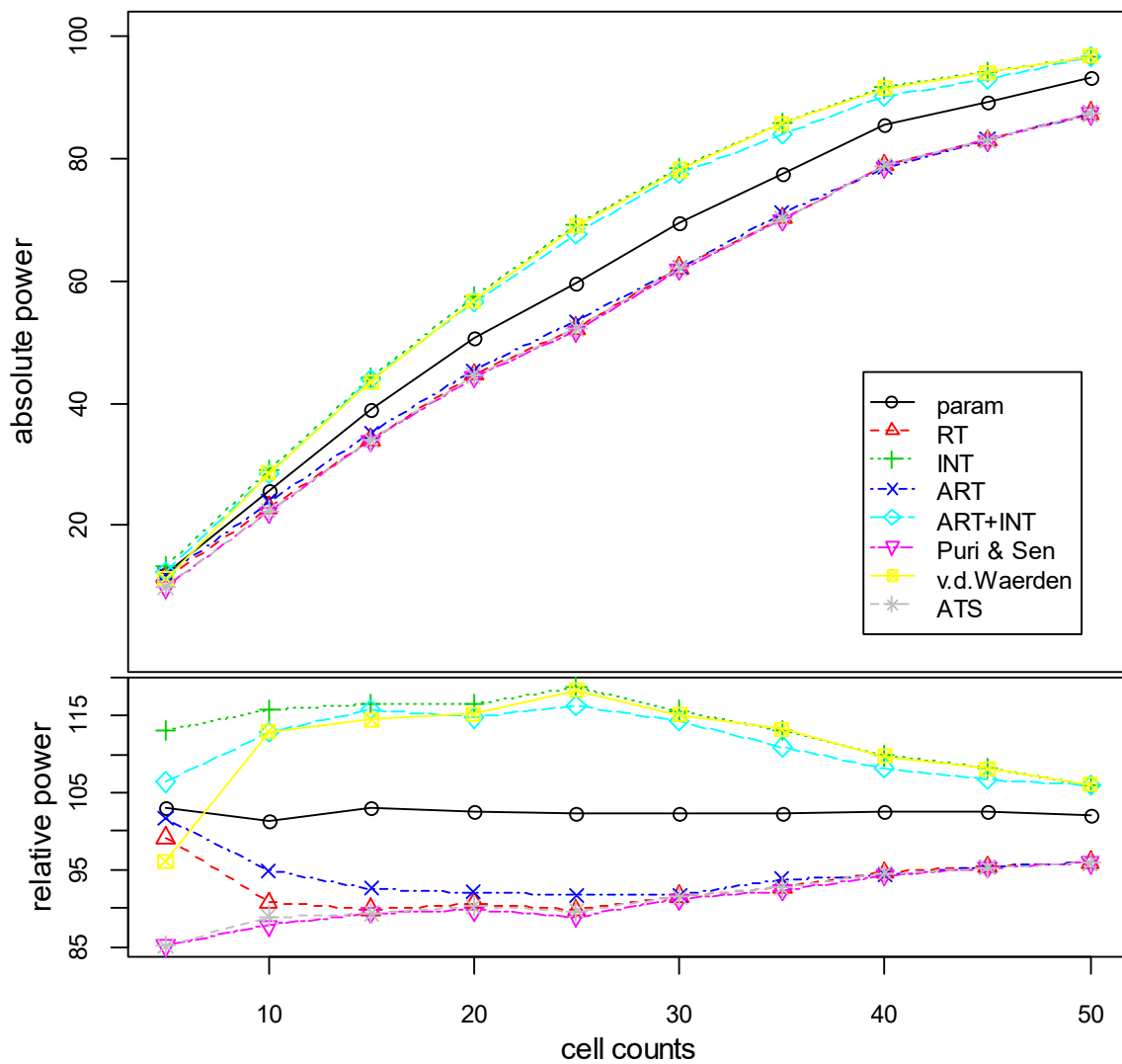
3.9.8 uniform distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	11.85	27.30	40.60	52.45	63.00	71.90	80.35	87.35	91.05	93.95
RT	11.60	25.25	37.60	49.45	58.60	68.20	76.75	83.35	88.40	91.75
INT	13.85	34.75	53.85	67.90	79.70	86.30	92.10	95.40	97.55	98.70
ART	11.35	25.55	37.20	48.45	57.95	67.90	76.20	83.30	87.95	91.85
ART+INT	12.25	31.65	49.90	65.65	77.40	85.05	91.00	94.80	97.15	98.25
Puri & Sen	10.75	24.50	37.10	48.60	58.55	67.95	76.70	83.05	88.30	91.60
v.d.Waerden	12.40	33.45	52.70	67.45	79.55	86.15	92.05	95.35	97.55	98.70
ATS	10.55	24.80	37.20	49.35	58.40	67.90	76.70	83.25	88.35	91.75



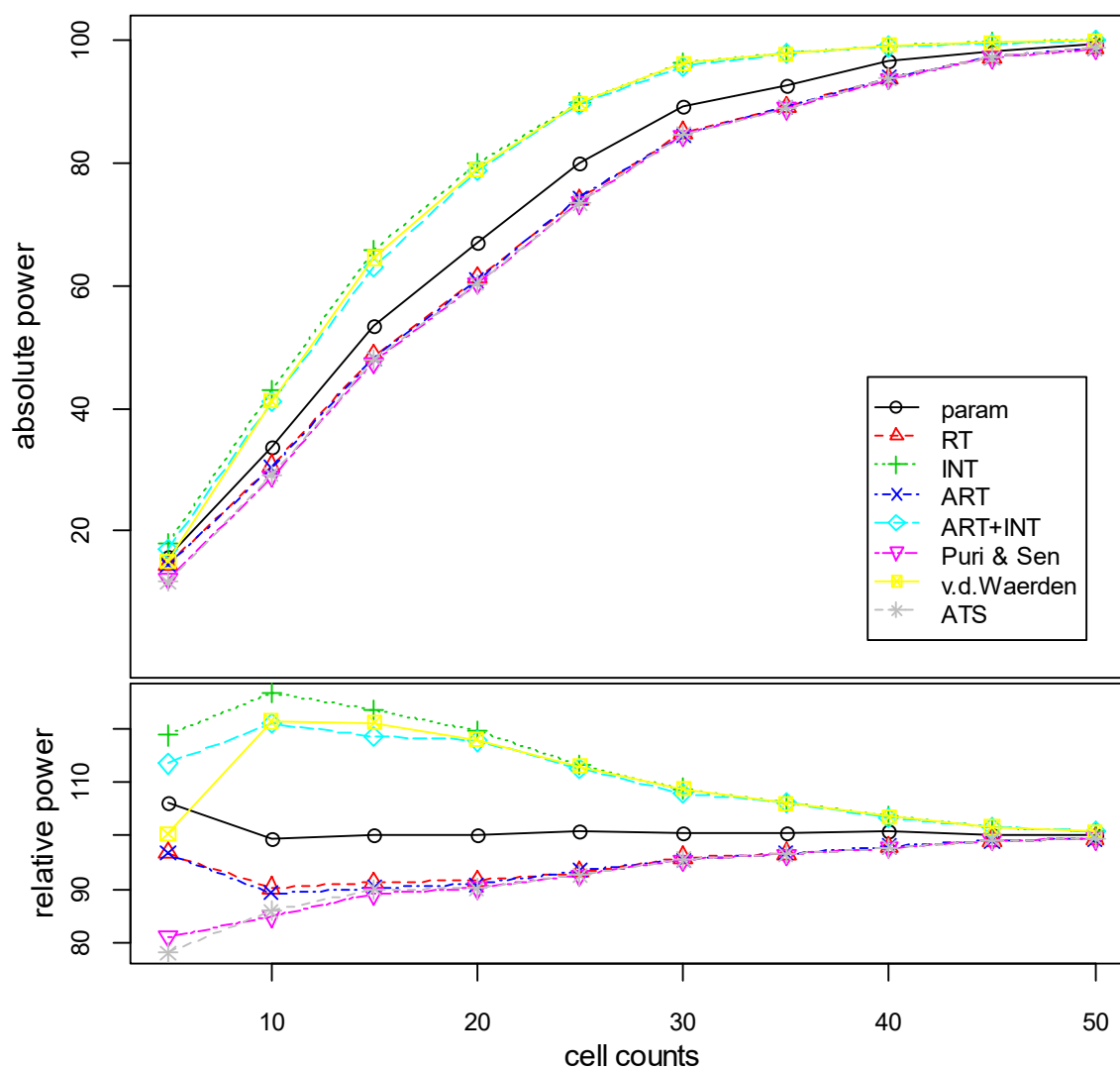
3.9.9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	12.10	25.60	39.05	50.50	59.50	69.40	77.50	85.35	89.10	93.00
RT	11.65	22.90	34.05	44.65	52.25	62.05	70.15	78.80	82.90	87.35
INT	13.30	29.20	44.15	57.45	69.05	78.40	85.65	91.45	94.05	96.55
ART	11.95	23.95	35.10	45.35	53.35	62.15	71.00	78.50	82.95	87.30
ART+INT	12.50	28.50	43.90	56.50	67.65	77.50	84.00	90.20	92.85	96.45
Puri & Sen	10.00	22.15	33.90	44.20	51.75	61.80	69.90	78.55	82.85	87.30
v.d.Waerden	11.30	28.50	43.40	56.75	68.85	78.05	85.70	91.40	94.00	96.55
ATS	10.00	22.45	33.85	44.45	52.15	62.00	70.10	78.75	82.85	87.30



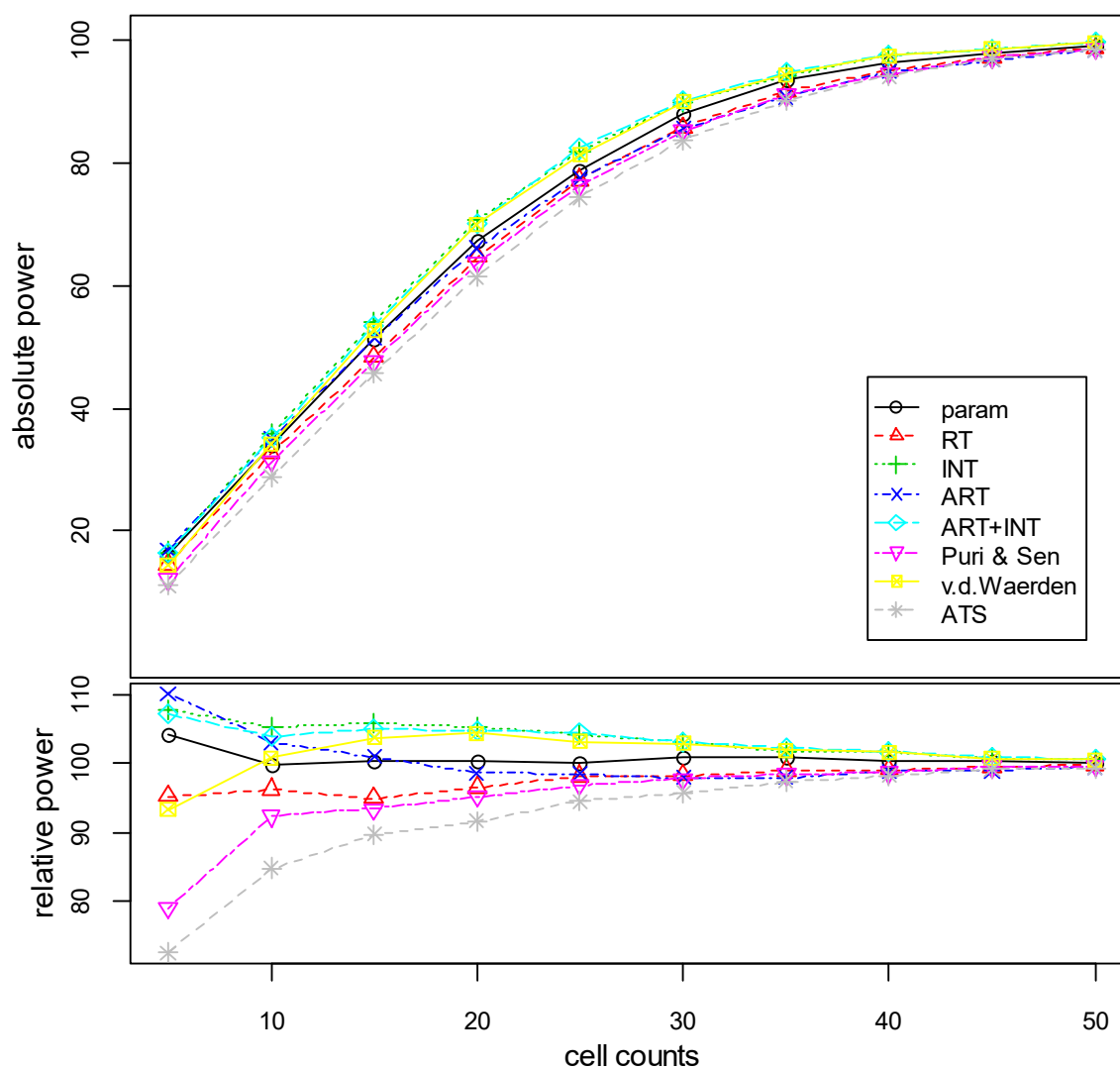
3.9.10 left/right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.95	33.75	53.30	66.90	79.95	89.00	92.60	96.60	98.20	99.40
RT	14.55	30.60	48.60	61.20	74.00	84.85	89.00	93.65	97.05	98.60
INT	17.85	42.90	65.70	79.90	89.85	96.25	97.70	99.10	99.50	99.85
ART	14.55	30.30	48.10	60.80	74.20	84.45	89.00	93.80	97.00	98.55
ART+INT	17.05	41.00	63.05	78.70	89.35	95.55	97.70	98.85	99.40	99.85
Puri & Sen	12.20	28.80	47.45	60.30	73.45	84.40	88.80	93.55	97.05	98.50
v.d.Waerden	15.10	41.15	64.50	78.90	89.70	96.15	97.60	99.10	99.45	99.85
ATS	11.75	29.15	47.90	60.25	73.45	84.55	88.85	93.60	97.05	98.60



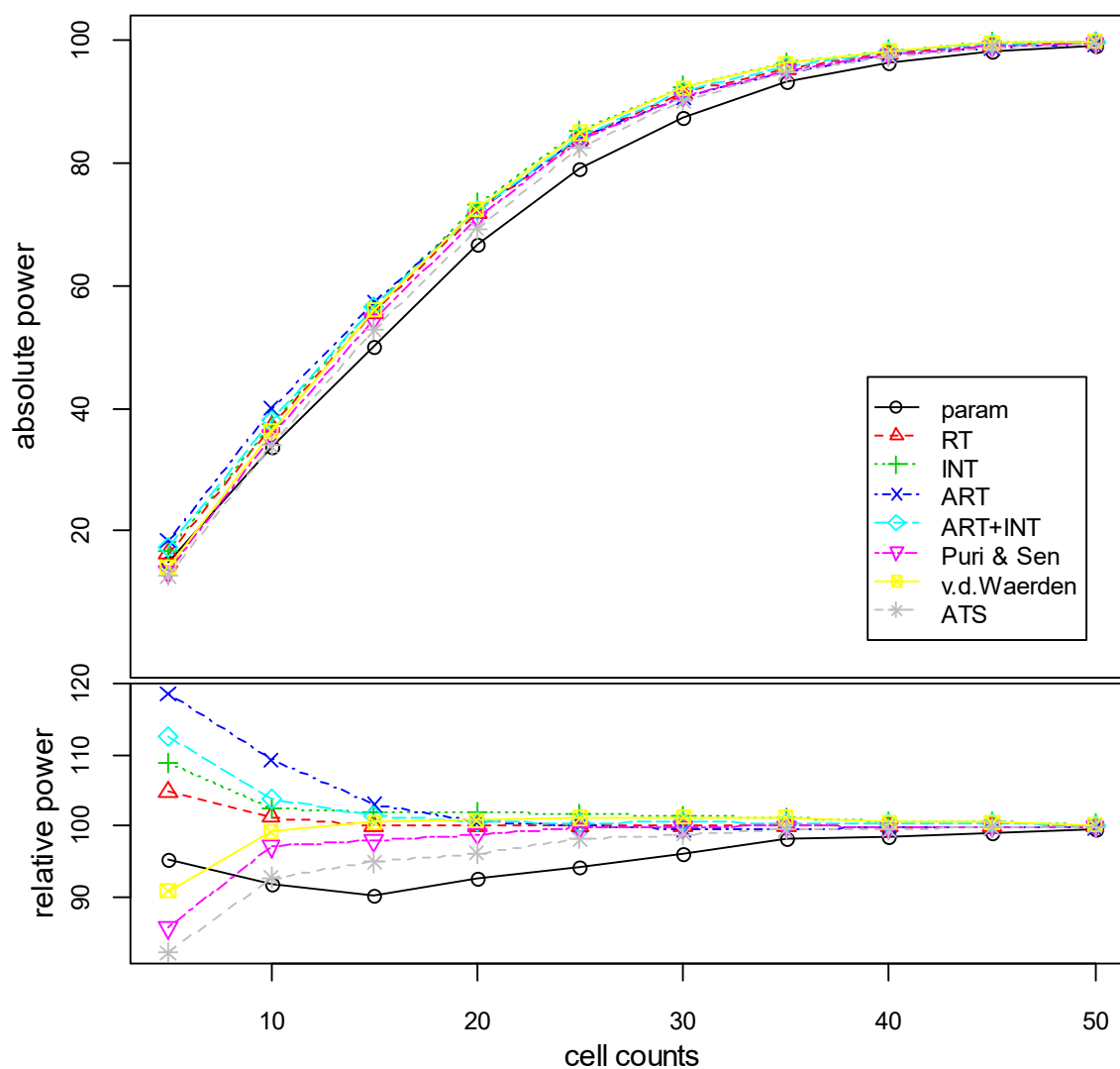
3. 9. 11 left skewed distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.05	33.95	51.10	67.25	78.75	88.00	93.30	96.10	97.90	99.05
RT	14.65	32.70	48.30	64.60	77.15	85.70	91.55	94.85	97.20	98.55
INT	16.60	35.80	53.90	70.50	81.85	89.85	94.20	97.30	98.40	99.45
ART	16.95	35.00	51.35	66.05	77.40	85.40	90.65	94.70	96.55	98.30
ART+INT	16.50	35.30	53.45	70.15	82.20	89.95	94.55	97.35	98.45	99.55
Puri & Sen	12.15	31.35	47.50	63.70	76.10	85.25	91.00	94.50	97.15	98.50
v.d.Waerden	14.35	34.25	52.75	69.90	81.15	89.80	94.25	97.30	98.40	99.45
ATS	11.15	28.80	45.60	61.35	74.25	83.55	90.15	94.00	96.85	98.25



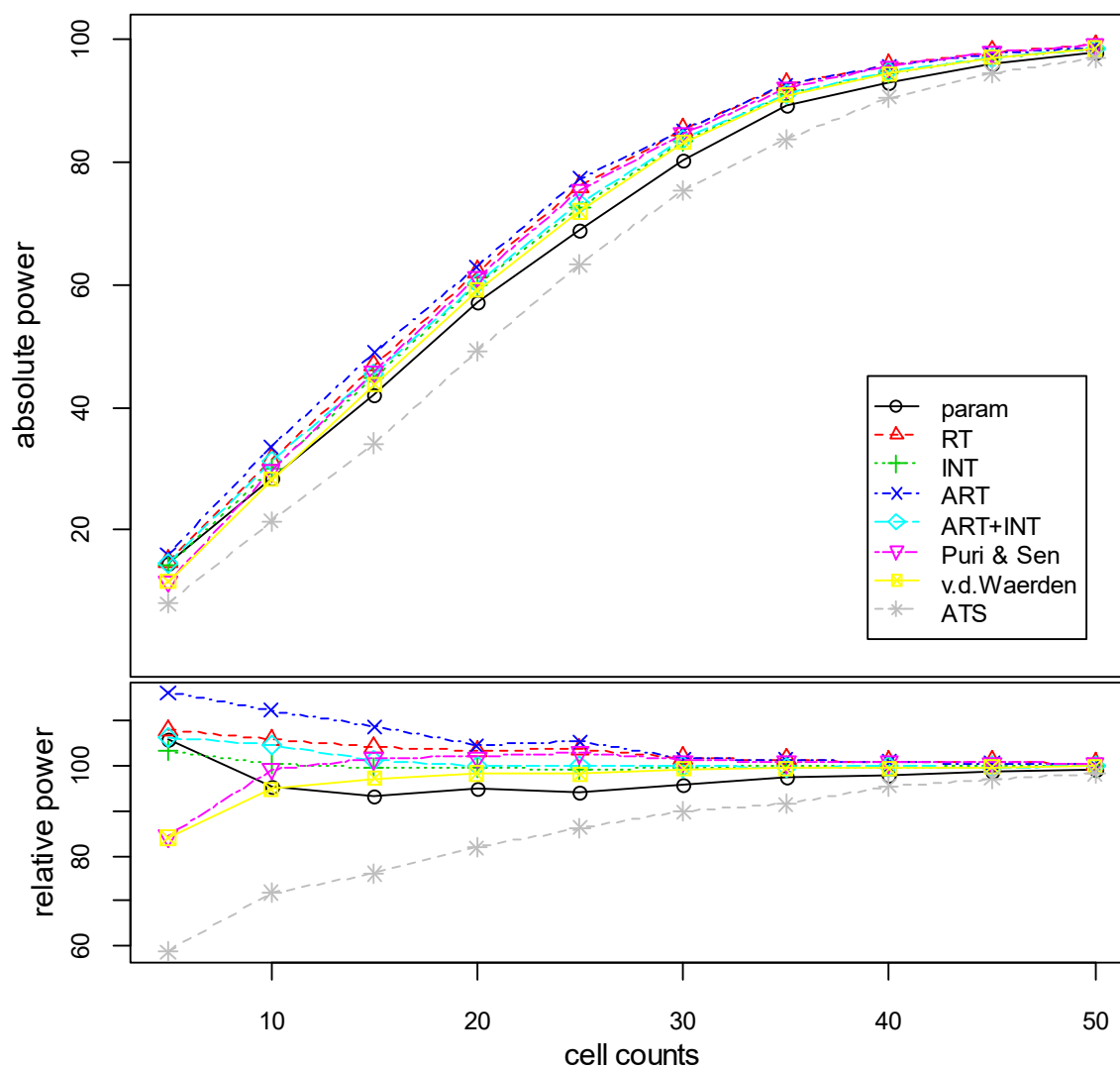
3. 9. 12 left skewed distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.80	33.55	50.15	66.60	79.00	87.40	93.25	96.15	98.05	99.00
RT	16.25	37.00	55.55	71.90	83.80	91.15	95.15	97.60	98.90	99.45
INT	16.90	37.45	56.60	73.25	85.15	92.35	96.25	98.20	99.50	99.65
ART	18.40	39.95	57.25	72.25	83.90	90.60	94.55	97.55	98.70	99.15
ART+INT	17.45	37.95	56.40	72.30	84.05	91.50	95.45	98.05	99.30	99.60
Puri & Sen	13.30	35.50	54.45	71.05	83.60	90.80	95.05	97.50	98.85	99.40
v.d.Waerden	14.10	36.25	55.90	72.45	84.80	92.10	96.15	98.20	99.45	99.65
ATS	12.75	33.90	52.75	69.15	82.30	89.95	94.60	97.20	98.75	99.35



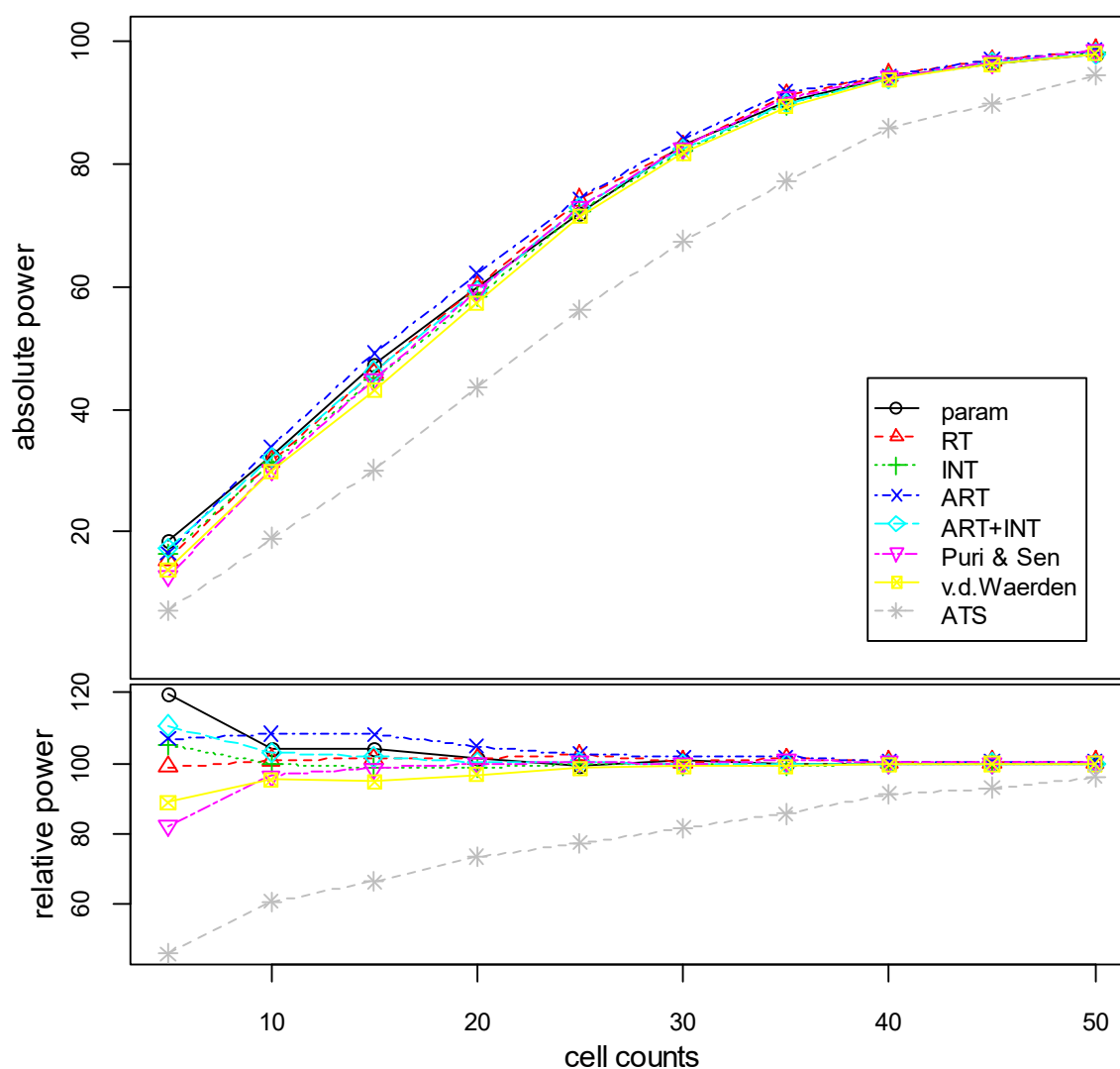
3. 10. 2 normal distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.60	28.50	41.90	57.15	68.85	80.10	89.15	92.90	95.90	97.60
RT	14.90	31.60	46.75	62.10	75.95	85.10	92.55	95.65	97.90	98.95
INT	14.25	30.00	44.80	59.85	72.55	83.40	91.10	94.50	96.95	98.35
ART	16.05	33.55	48.85	62.85	77.20	85.05	92.45	95.55	97.50	98.80
ART+INT	14.70	31.25	45.50	60.10	73.20	83.55	91.00	94.55	96.90	98.40
Puri & Sen	11.65	29.65	45.65	61.25	75.35	84.65	92.05	95.50	97.75	98.95
v.d.Waerden	11.60	28.30	43.65	59.10	71.90	83.05	90.80	94.25	96.90	98.35
ATS	8.10	21.45	34.15	49.20	63.20	75.20	83.50	90.45	94.35	96.85



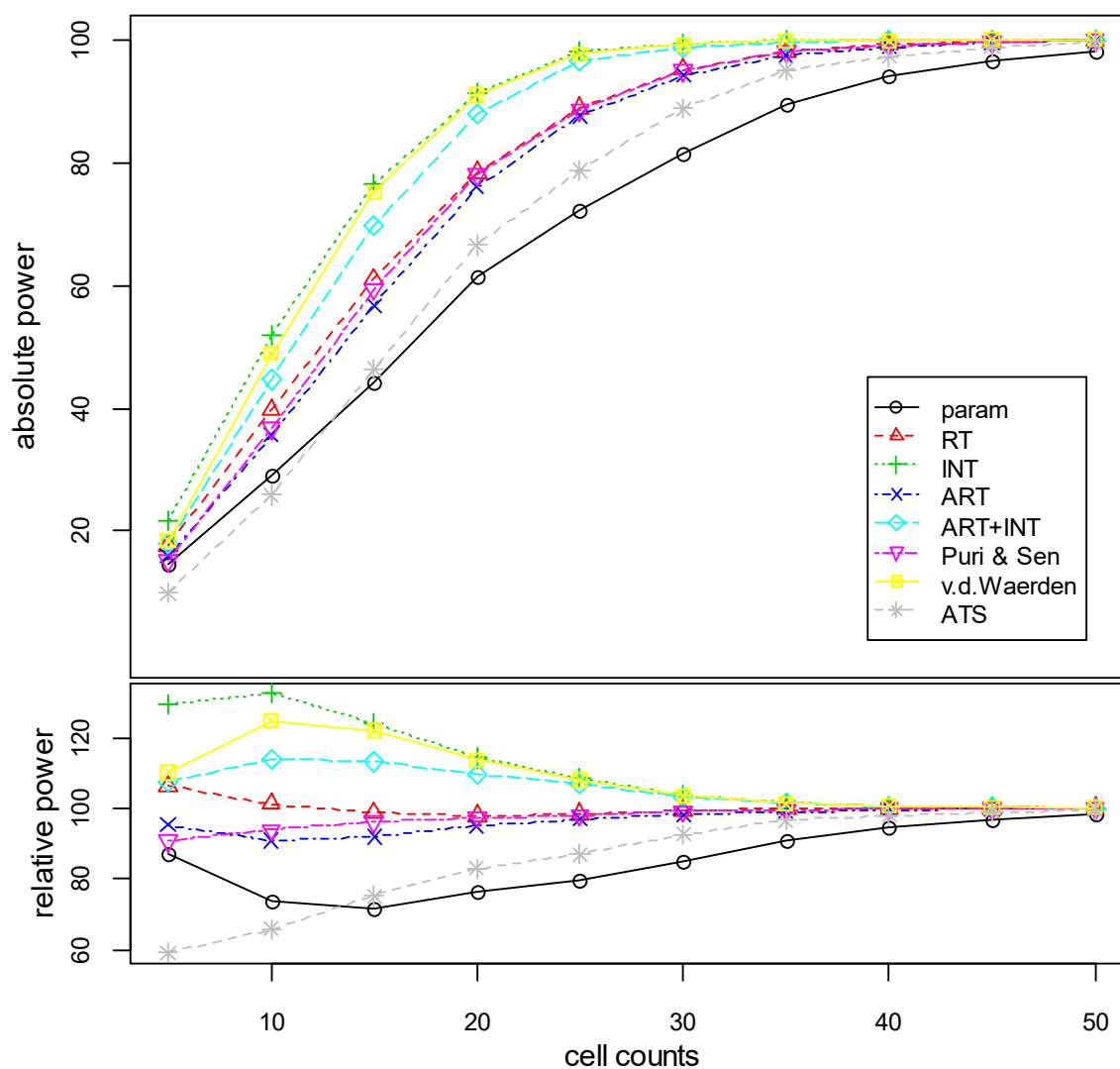
3. 10. 3 normal distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	18.65	32.55	47.30	59.95	71.85	83.10	90.00	94.00	96.20	97.90
RT	15.45	31.60	45.90	59.95	74.05	82.80	91.10	94.45	96.70	98.40
INT	16.40	31.25	44.70	58.45	72.15	82.15	89.60	93.95	96.20	97.95
ART	16.70	33.95	49.10	62.15	74.25	83.95	91.65	94.30	96.85	98.45
ART+INT	17.30	32.20	46.15	59.30	72.75	82.40	89.70	93.75	96.40	97.90
Puri & Sen	12.85	30.20	44.70	59.25	72.75	82.55	90.75	94.20	96.50	98.30
v.d.Waerden	13.90	29.85	43.00	57.35	71.30	81.75	89.20	93.65	96.15	97.80
ATS	7.20	19.05	30.15	43.55	56.10	67.40	77.10	85.85	89.70	94.40



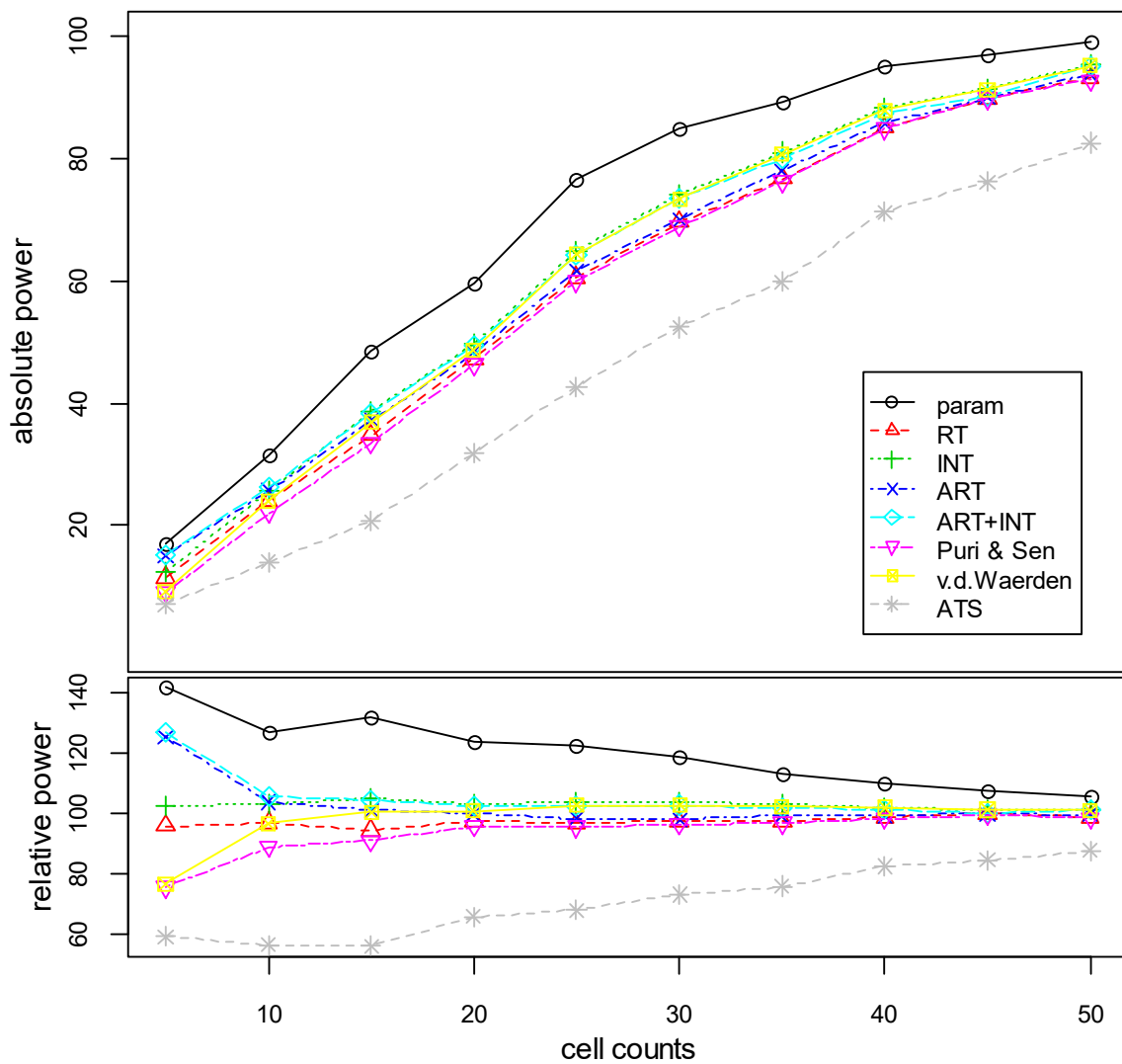
3. 10. 4 right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.55	28.95	44.30	61.30	72.10	81.35	89.40	94.10	96.60	98.15
RT	17.75	39.70	60.95	78.40	88.85	95.10	98.10	99.20	99.65	99.85
INT	21.60	51.90	76.60	91.40	97.95	99.25	99.80	99.85	100.0	100.0
ART	15.95	35.65	56.70	76.00	87.60	94.10	97.45	98.80	99.50	99.85
ART+INT	17.95	44.65	69.75	87.85	96.45	98.80	99.70	99.85	100.0	100.0
Puri & Sen	15.20	36.80	59.30	78.00	88.50	95.00	98.00	99.10	99.60	99.85
v.d.Waerden	18.40	48.90	75.20	91.00	97.60	99.15	99.80	99.85	100.0	100.0
ATS	9.90	25.85	46.35	66.50	78.65	88.70	94.95	97.25	98.75	99.50



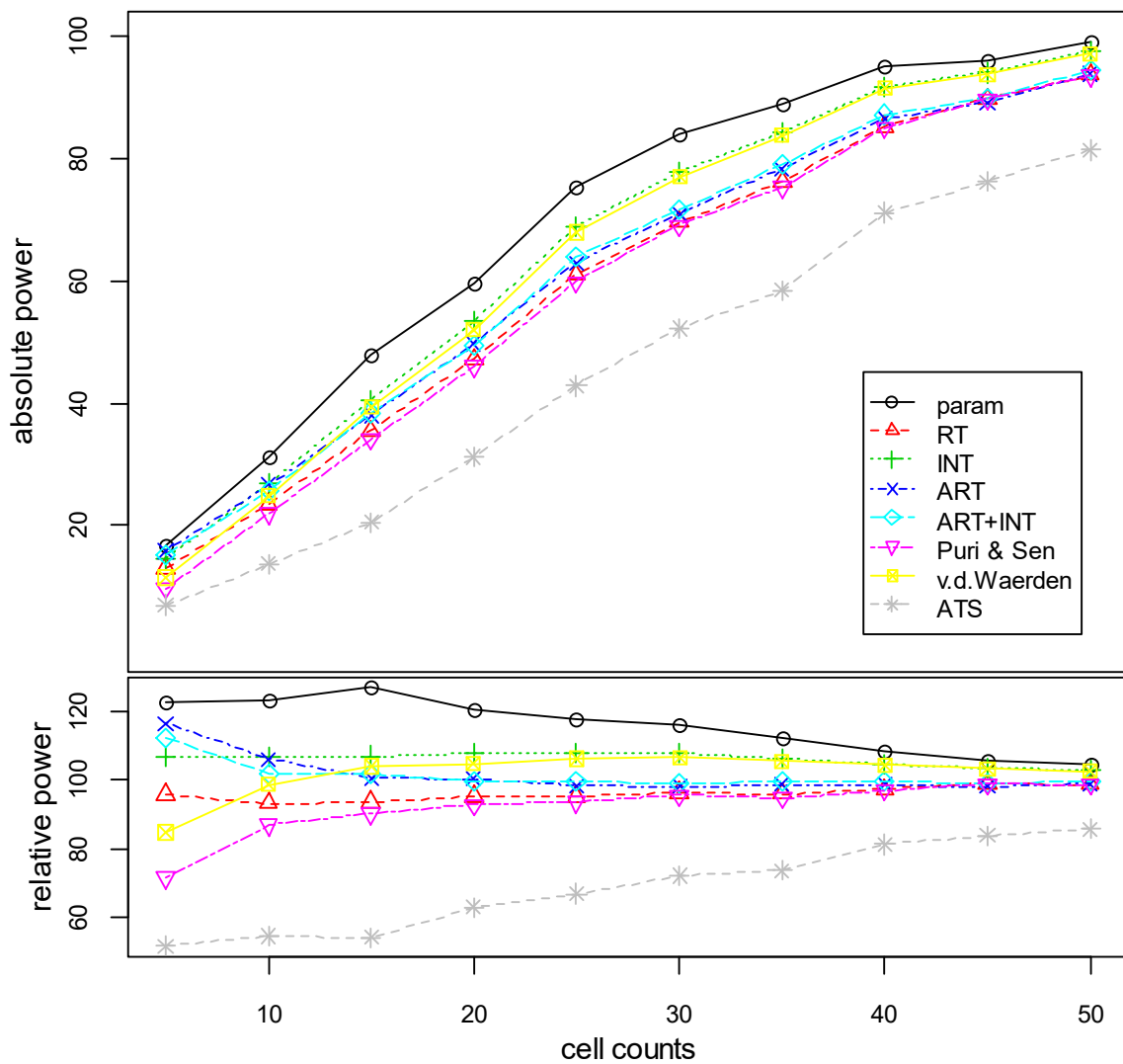
3. 10. 5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	17.05	31.60	48.45	59.70	76.55	84.75	89.10	95.10	96.70	99.10
RT	11.55	24.10	34.75	47.20	60.55	69.55	76.60	84.95	89.80	93.00
INT	12.35	25.70	38.65	49.80	64.85	74.05	80.95	88.05	91.40	95.35
ART	15.10	25.80	37.15	48.25	61.55	70.00	78.00	85.60	89.85	93.75
ART+INT	15.25	26.25	38.40	49.50	64.15	73.45	80.00	87.25	89.95	95.10
Puri & Sen	9.10	22.10	33.45	46.30	59.85	68.95	76.10	84.75	89.65	92.70
v.d.Waerden	9.25	24.05	36.90	48.70	64.30	73.35	80.55	87.85	91.20	95.10
ATS	7.15	14.05	20.65	31.80	42.55	52.35	59.75	71.20	76.15	82.50



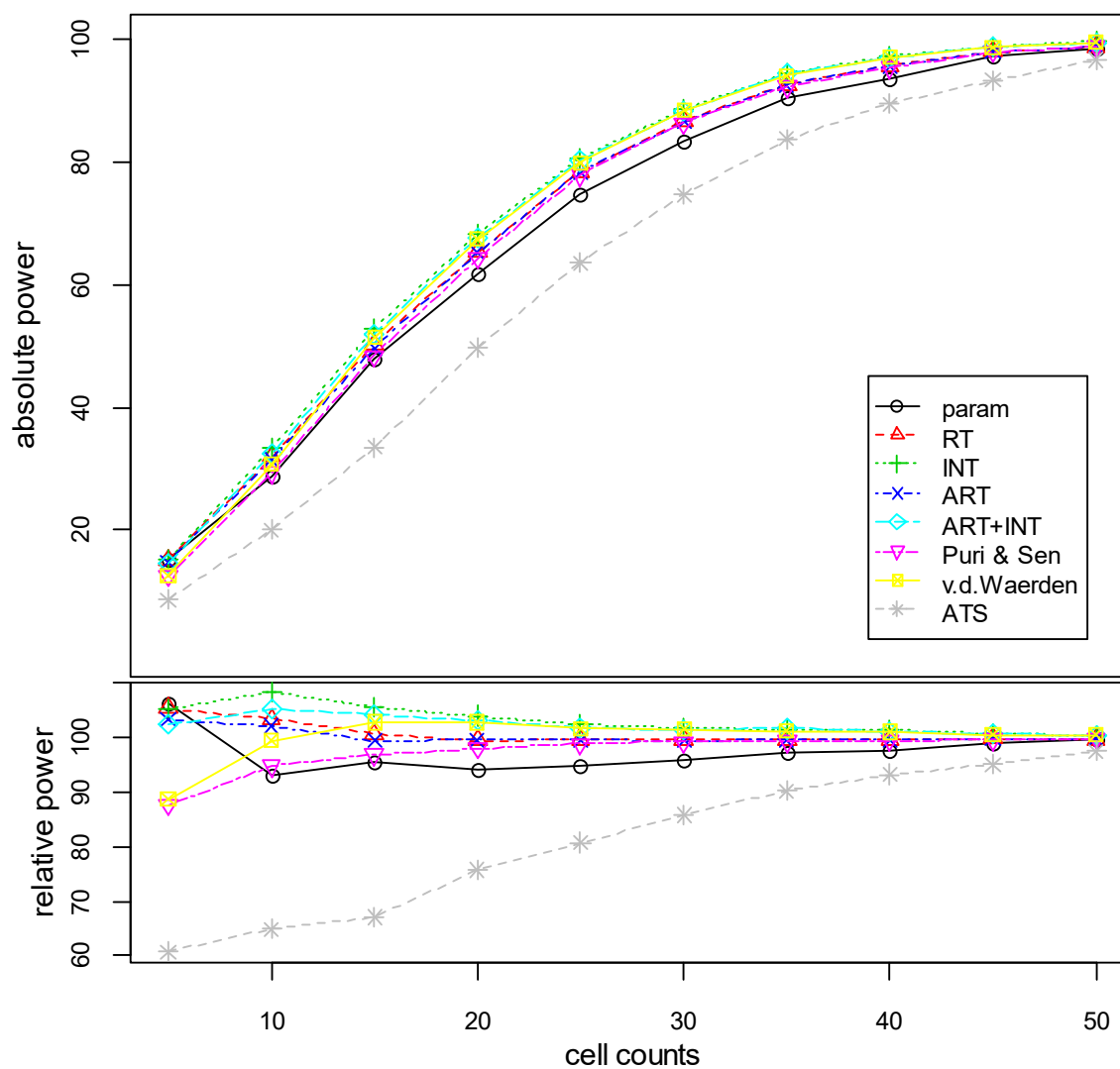
3. 10. 6 exponential distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	16.70	31.10	47.95	59.65	75.30	83.85	88.90	95.00	96.05	98.95
RT	13.05	23.55	35.40	47.20	60.95	69.55	76.05	85.10	89.70	93.55
INT	14.55	26.95	40.45	53.40	68.85	77.75	84.10	91.50	93.90	97.30
ART	15.85	26.75	38.00	49.70	62.90	70.85	78.20	86.35	89.00	93.75
ART+INT	15.30	25.75	38.45	49.40	63.80	71.45	79.00	87.10	89.65	94.30
Puri & Sen	9.75	21.95	34.10	46.00	59.75	69.00	75.25	84.85	89.60	93.40
v.d.Waerden	11.55	24.90	39.30	51.90	67.85	76.95	83.65	91.35	93.60	97.10
ATS	7.05	13.80	20.50	31.25	42.80	52.15	58.40	71.10	76.10	81.30



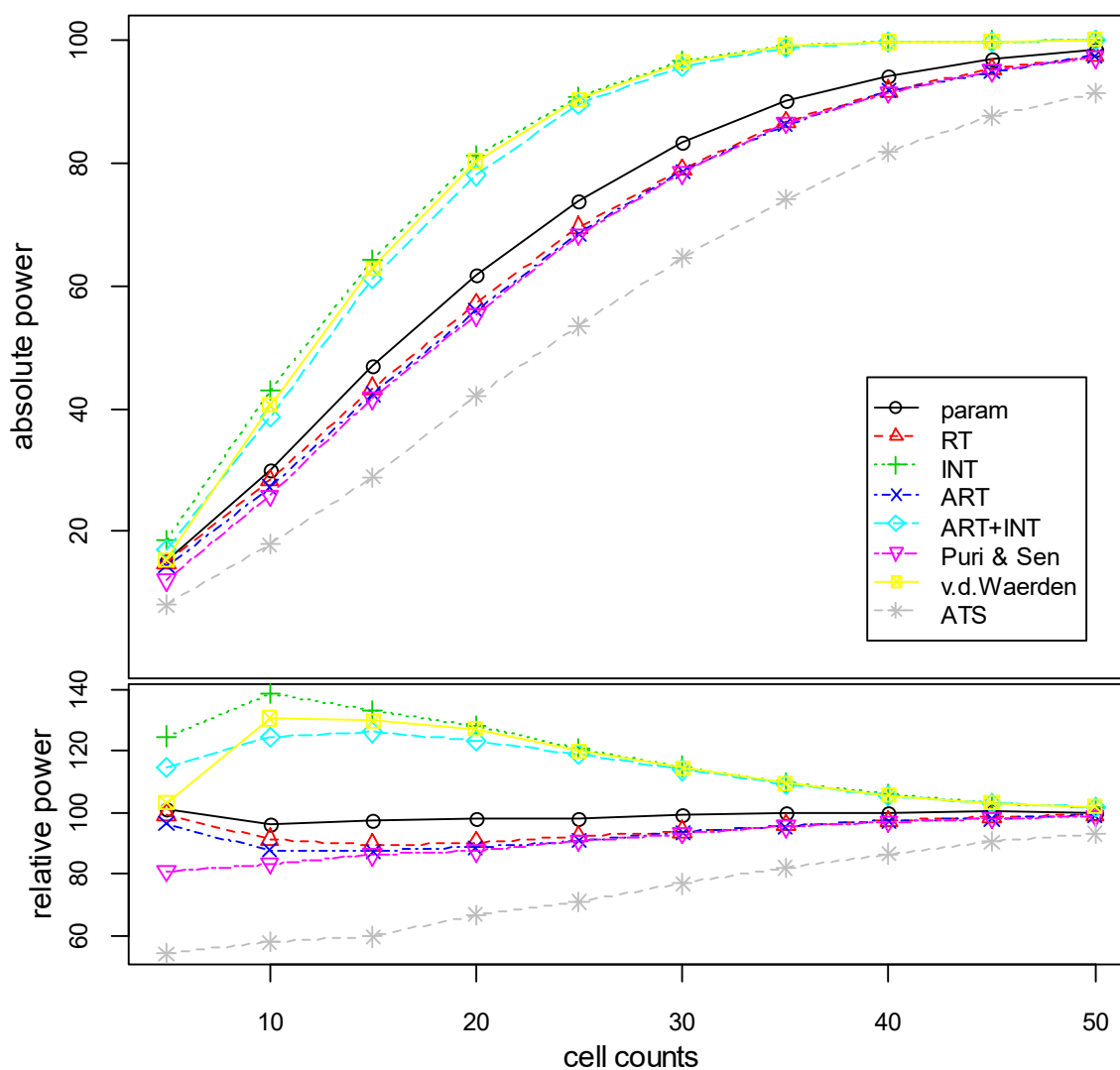
3. 10. 7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.25	28.75	47.75	61.75	74.50	83.40	90.40	93.45	97.00	98.50
RT	15.10	31.95	50.20	65.20	78.40	86.70	92.45	95.55	97.90	98.70
INT	15.10	33.45	52.70	68.20	80.55	88.55	94.25	97.20	98.70	99.45
ART	14.80	31.55	49.65	65.25	78.25	86.45	92.40	95.45	97.85	98.80
ART+INT	14.70	32.50	51.95	67.55	80.05	88.25	94.30	96.85	98.70	99.35
Puri & Sen	12.55	29.30	48.35	64.25	77.65	86.25	92.20	95.30	97.80	98.70
v.d.Waerden	12.70	30.75	51.30	67.40	79.85	88.30	93.95	96.90	98.60	99.40
ATS	8.70	20.05	33.45	49.65	63.45	74.60	83.70	89.35	93.25	96.50



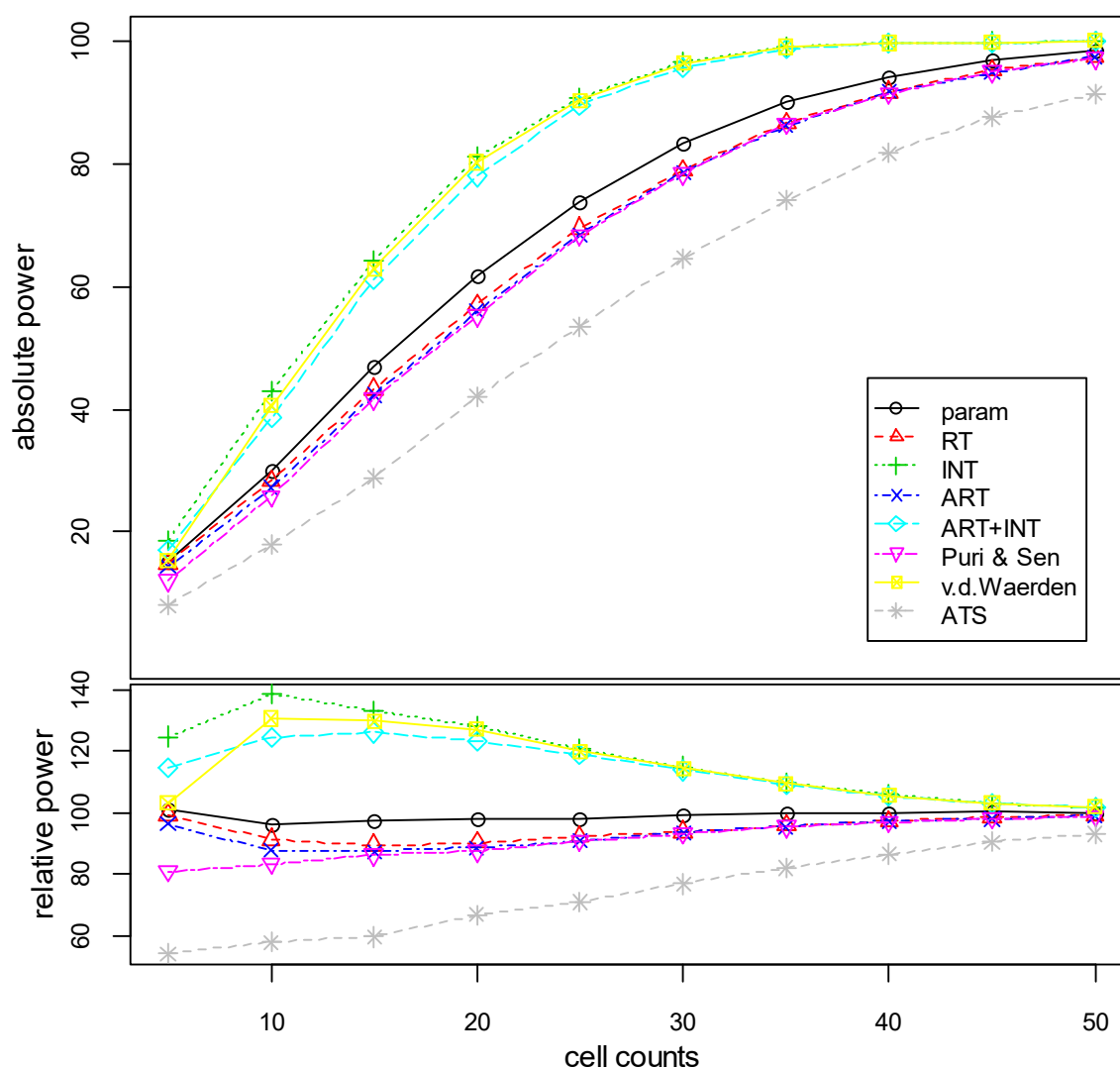
3. 10. 8 uniform distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.15	29.95	47.05	61.70	73.60	83.30	90.05	94.15	96.90	98.25
RT	14.85	28.35	43.30	56.95	69.45	78.90	86.60	91.65	95.20	97.25
INT	18.65	43.00	64.30	81.00	90.70	96.60	99.00	99.65	99.75	99.95
ART	14.40	27.25	42.30	55.90	68.35	78.55	86.15	91.70	94.80	97.30
ART+INT	17.10	38.75	61.00	77.90	89.55	95.60	98.65	99.55	99.70	99.90
Puri & Sen	12.10	25.90	41.70	55.20	68.25	78.35	86.40	91.35	95.00	97.10
v.d.Waerden	15.40	40.60	62.90	80.20	90.25	96.30	98.95	99.60	99.75	99.95
ATS	8.10	17.95	28.85	42.10	53.40	64.60	74.10	81.65	87.55	91.40



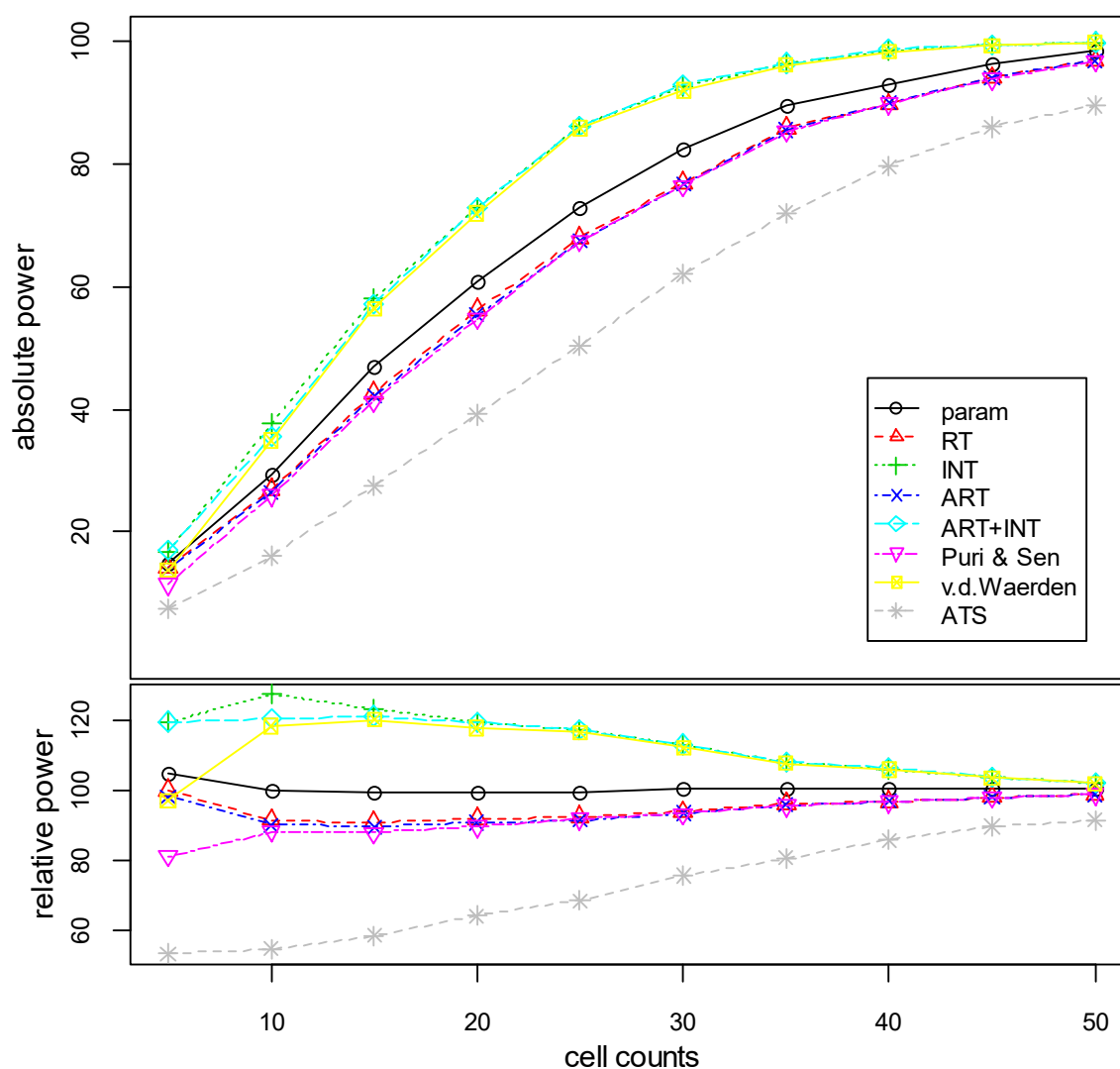
3. 10. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.15	28.95	44.10	58.85	71.15	81.30	88.05	93.00	96.10	97.90
RT	13.60	25.15	38.95	51.50	62.40	72.90	80.95	86.75	91.05	94.70
INT	16.05	33.85	53.40	69.30	81.95	90.20	95.80	98.10	98.80	99.45
ART	14.10	26.15	39.50	52.25	64.20	74.65	82.15	88.15	91.65	95.15
ART+INT	16.60	34.65	53.00	70.10	81.85	90.15	95.55	98.00	98.90	99.45
Puri & Sen	11.15	23.20	37.35	50.30	61.80	72.10	80.40	86.40	90.90	94.65
v.d.Waerden	13.30	32.00	52.15	68.15	81.65	89.65	95.55	98.05	98.80	99.45
ATS	7.85	15.75	26.55	36.30	46.70	56.65	67.05	75.40	82.15	86.70



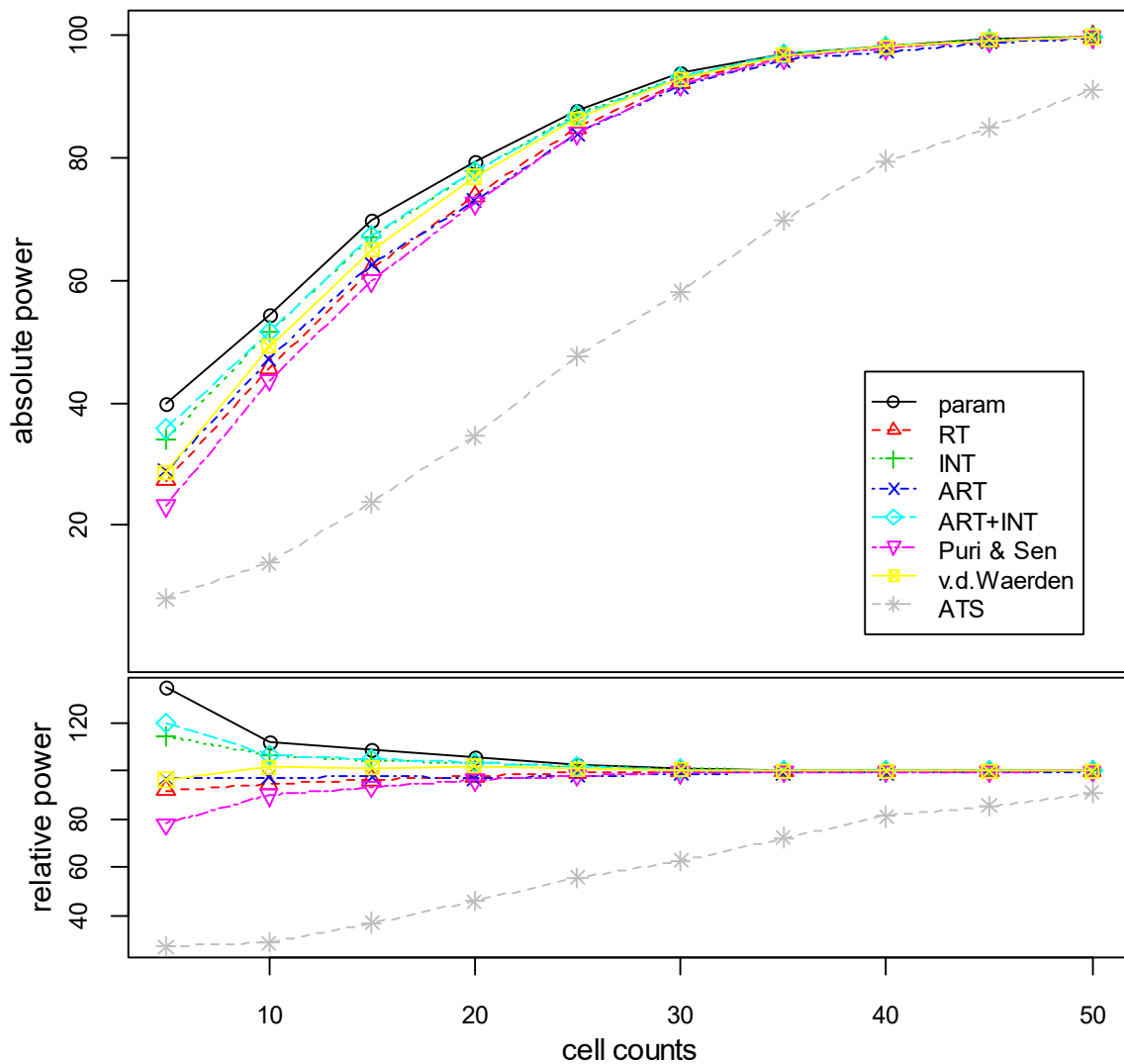
3. 10. 10 left/right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.85	29.50	46.85	60.70	72.95	82.25	89.50	92.95	96.15	98.25
RT	14.15	27.00	42.65	56.15	67.90	76.85	85.80	89.70	93.90	96.70
INT	16.90	37.55	57.90	72.80	86.10	92.45	96.25	98.35	99.25	99.75
ART	13.90	26.55	42.05	55.40	67.30	76.55	85.40	89.85	93.95	96.70
ART+INT	16.95	35.55	57.00	72.90	86.10	92.70	96.35	98.65	99.40	99.75
Puri & Sen	11.50	26.00	41.30	54.75	67.40	76.40	85.25	89.65	93.75	96.60
v.d.Waerden	13.75	34.90	56.45	71.90	85.75	91.90	96.05	98.10	99.25	99.75
ATS	7.55	16.10	27.50	39.10	50.25	61.90	71.95	79.50	85.90	89.45



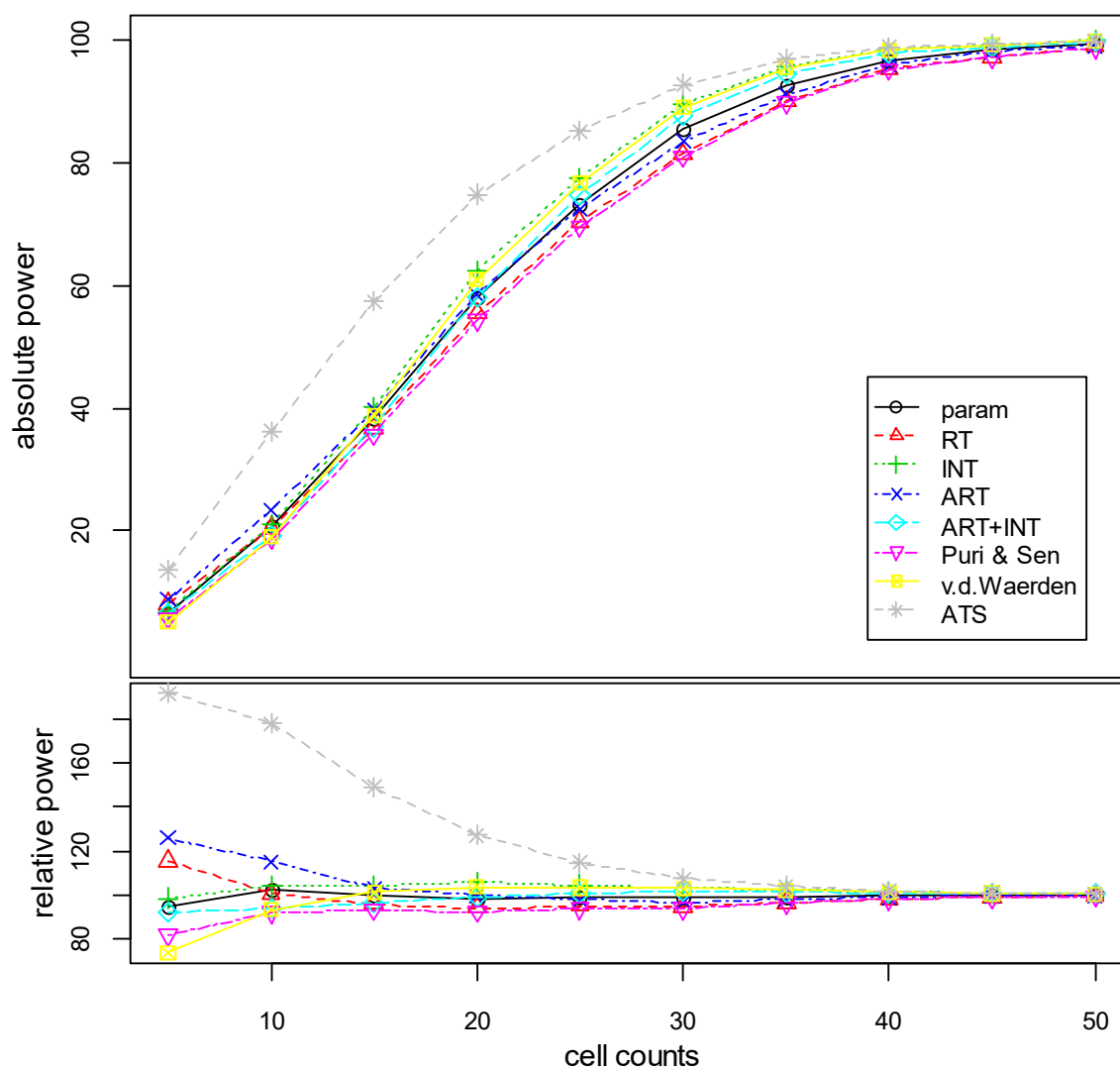
3. 10. 14 normal distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	40.00	54.40	69.60	79.30	87.50	93.60	96.95	98.10	99.20	99.60
RT	27.35	45.70	61.80	73.65	84.90	92.15	96.50	97.95	98.95	99.65
INT	34.10	51.70	66.85	77.85	86.95	93.25	96.80	98.05	99.15	99.60
ART	28.85	47.10	62.50	72.85	83.85	91.50	95.85	97.20	98.75	99.40
ART+INT	35.70	51.65	67.25	77.70	86.80	93.00	96.80	98.00	99.10	99.55
Puri & Sen	23.20	43.60	59.80	72.50	83.85	91.75	96.15	97.70	98.85	99.60
v.d.Waerden	28.65	49.20	64.90	76.80	86.25	92.75	96.60	98.00	99.10	99.60
ATS	8.05	13.90	23.70	34.50	47.60	58.05	69.85	79.40	84.70	90.85



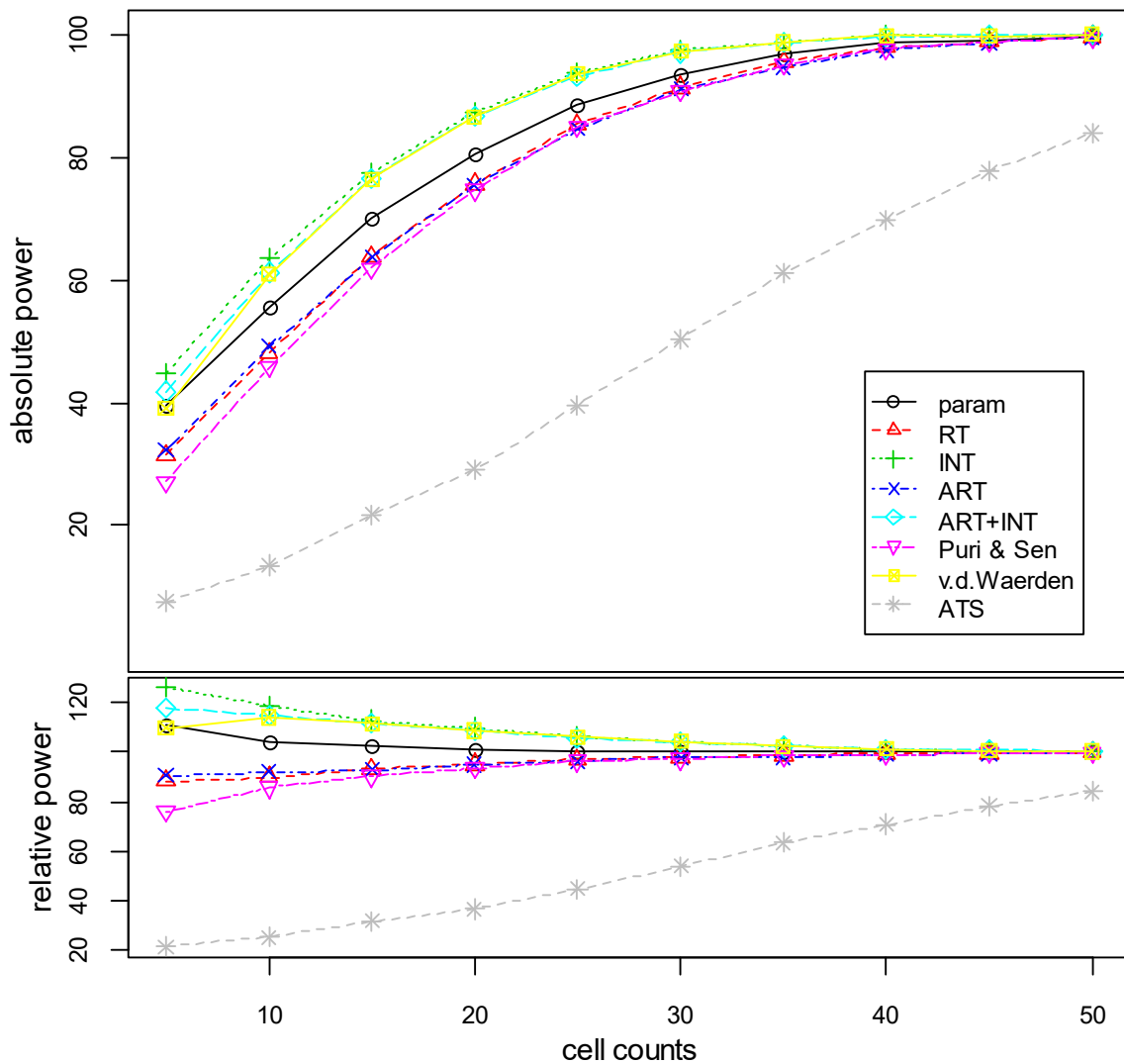
3. 10. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	6.65	20.75	38.25	57.95	73.20	85.35	92.40	96.65	98.25	99.40
RT	8.15	20.45	36.80	55.35	70.35	81.35	90.00	95.20	97.20	98.80
INT	6.95	21.10	40.05	62.20	77.50	89.35	95.50	98.30	99.10	99.80
ART	8.90	23.40	39.60	58.55	72.45	83.40	91.10	95.75	97.95	99.00
ART+INT	6.50	19.10	36.95	58.10	74.55	87.50	94.30	97.75	98.80	99.65
Puri & Sen	5.75	18.70	35.75	54.25	69.55	80.90	89.70	95.10	97.10	98.70
v.d.Waerden	5.20	18.95	38.85	60.90	76.55	88.85	95.35	98.30	99.05	99.80
ATS	13.55	36.25	57.35	74.80	85.05	92.65	96.70	98.75	99.25	99.70



3. 10. 16 left skewed distribution - unequal variances (small n_i - large s_j)

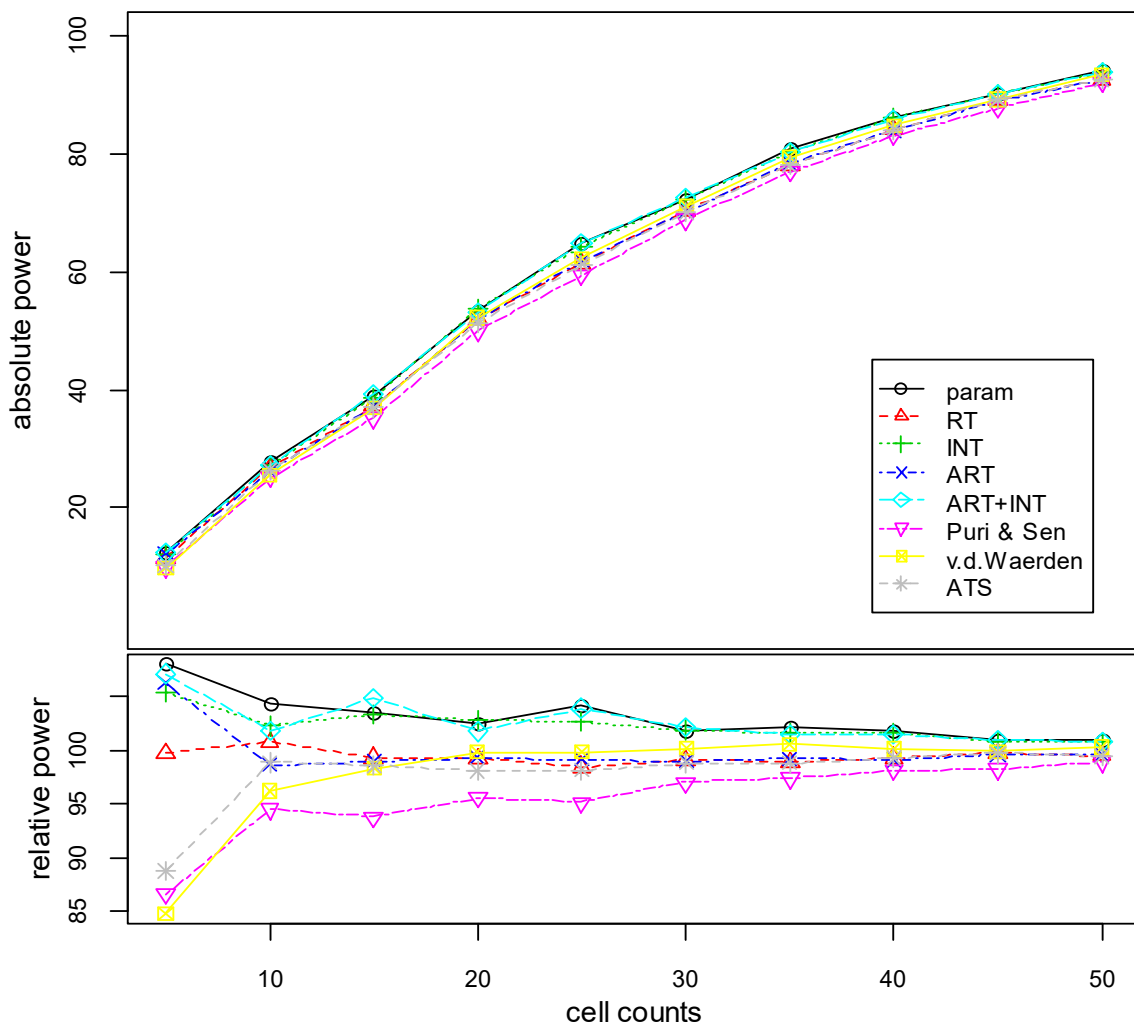
method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	39.55	55.55	70.10	80.65	88.60	93.55	96.75	98.65	99.05	99.70
RT	31.45	48.05	63.75	75.55	85.35	91.35	95.45	97.85	98.80	99.60
INT	44.80	63.50	77.30	87.40	93.85	97.35	98.70	99.80	99.75	100.00
ART	32.25	49.15	63.65	75.50	84.65	91.10	94.65	97.45	98.60	99.45
ART+INT	41.85	61.25	76.40	86.55	93.25	97.00	98.70	99.70	99.80	100.00
Puri & Sen	27.10	45.75	61.90	74.60	84.85	90.75	95.10	97.60	98.75	99.50
v.d.Waerden	39.00	60.90	76.40	86.55	93.50	97.25	98.70	99.80	99.75	100.00
ATS	7.65	13.50	21.80	29.15	39.50	50.35	61.20	69.80	77.70	83.90



3. 11. Interaction AB - A significant (effects $ab_{ij} = 0.4*s$ $a_i = 0.3*s$ / equal n_i / # levels = $2*4$)

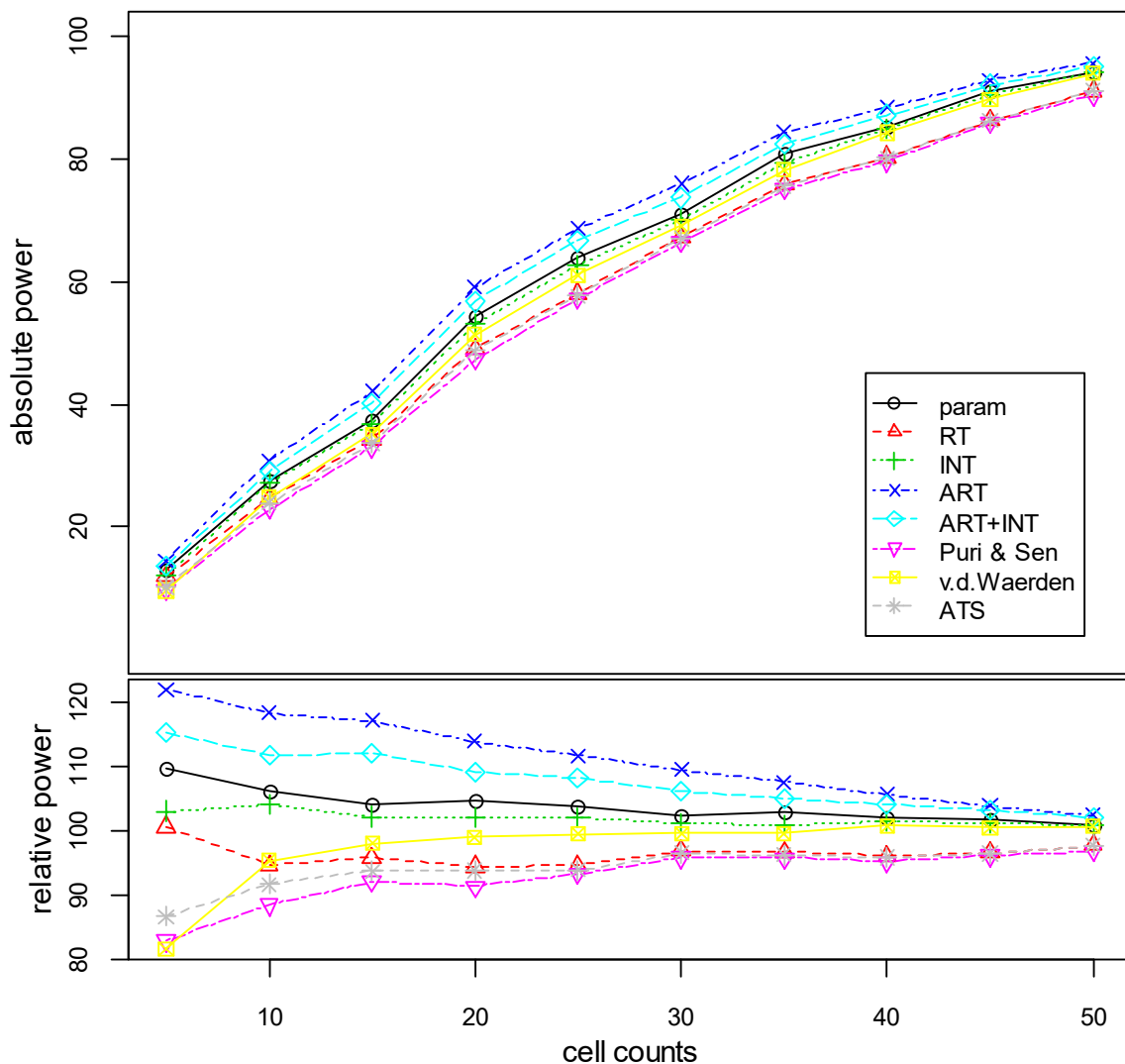
3. 11. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	12.40	27.80	38.80	53.55	64.95	72.20	80.70	86.10	90.15	93.90
RT	11.45	26.85	37.20	51.90	61.40	70.20	78.05	84.00	89.00	92.55
INT	12.10	27.25	38.70	53.75	64.05	72.20	80.25	85.95	90.00	93.75
ART	12.20	26.30	37.10	51.95	61.85	70.15	78.35	83.85	88.90	92.65
ART+INT	12.30	27.15	39.30	53.20	64.80	72.40	80.10	85.85	90.10	93.70
Puri & Sen	9.95	25.20	35.15	50.00	59.35	68.75	76.90	83.05	87.70	92.00
v.d.Waerden	9.75	25.65	36.85	52.20	62.25	71.00	79.40	84.70	89.15	93.30
ATS	10.20	26.35	36.95	51.30	61.20	70.05	78.00	84.00	89.00	92.50



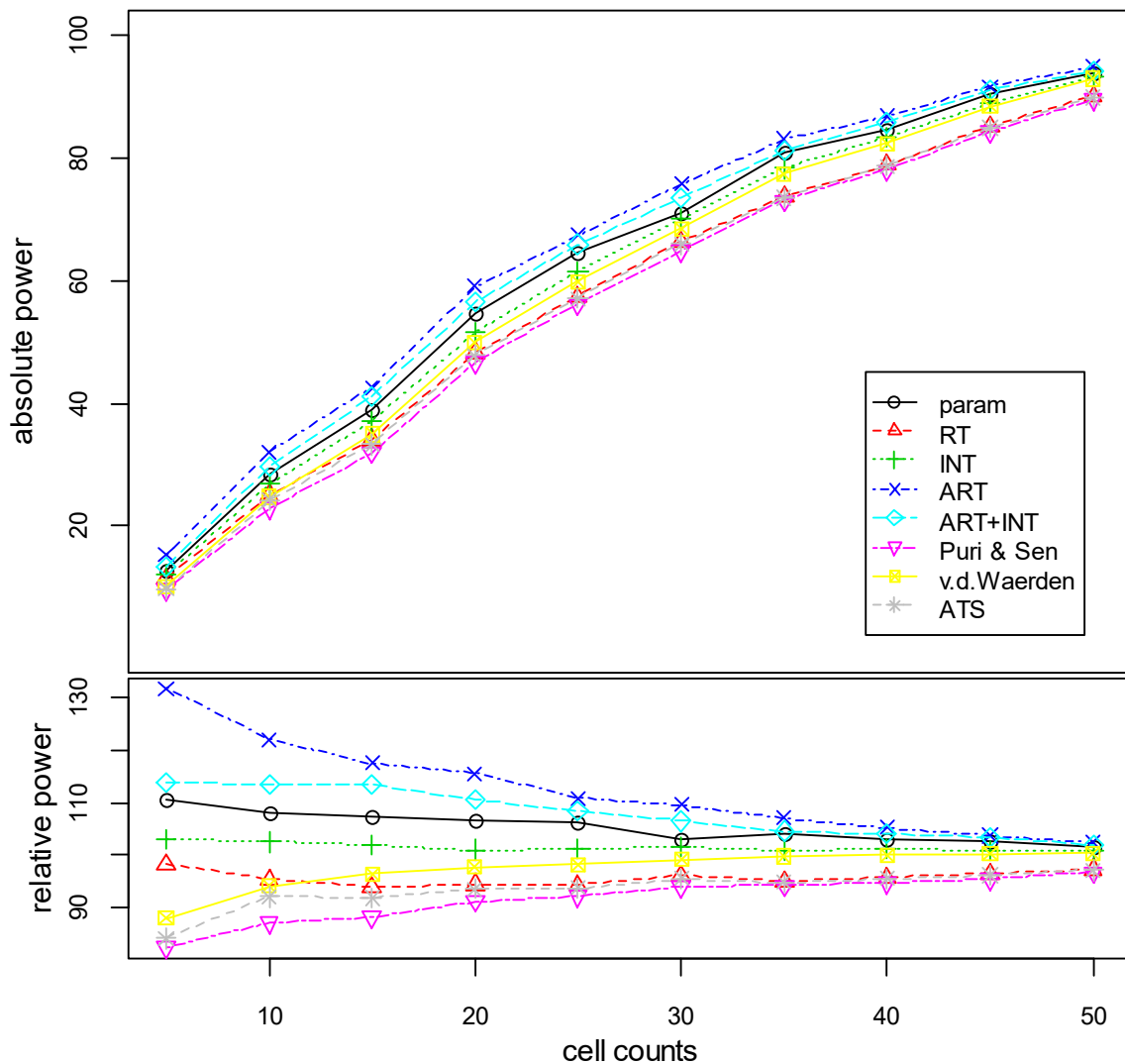
3. 11. 2 normal distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	13.05	27.65	37.35	54.30	63.80	71.05	80.75	85.20	90.90	93.95
RT	11.95	24.65	34.35	48.95	58.10	67.15	75.80	80.25	86.20	91.05
INT	12.25	27.15	36.65	52.95	62.70	70.15	79.15	84.70	90.35	93.90
ART	14.50	30.85	42.05	59.10	68.55	75.90	84.35	88.30	92.75	95.45
ART+INT	13.70	29.15	40.20	56.65	66.50	73.60	82.45	87.10	92.05	94.95
Puri & Sen	9.85	23.05	33.05	47.35	57.25	66.40	75.10	79.50	85.85	90.25
v.d.Waerden	9.70	24.85	35.15	51.35	61.05	69.05	78.15	84.20	89.70	93.80
ATS	10.30	23.90	33.60	48.65	57.65	66.95	75.45	80.10	86.10	91.05



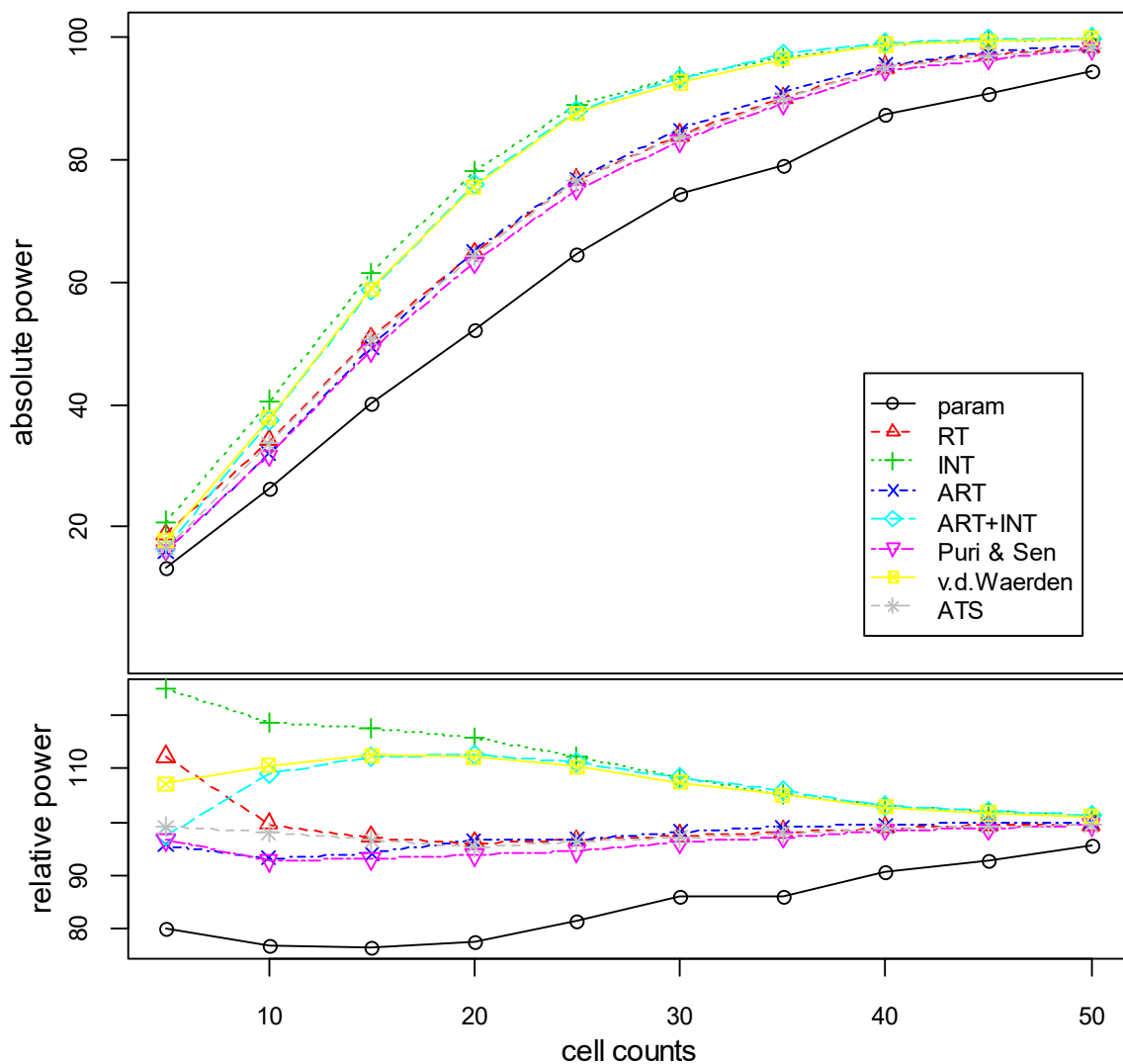
3. 11. 3 normal distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	12.90	28.40	38.90	54.60	64.60	71.10	80.75	84.60	90.50	93.85
RT	11.45	25.05	34.00	48.25	57.30	66.25	73.65	78.75	85.00	89.90
INT	12.00	26.95	36.95	51.65	61.50	70.10	78.20	83.25	88.85	93.15
ART	15.35	32.10	42.55	59.10	67.40	75.65	82.95	86.65	91.50	94.70
ART+INT	13.25	29.80	41.05	56.60	65.85	73.45	81.10	85.60	91.05	94.15
Puri & Sen	9.60	22.90	31.90	46.65	56.05	64.80	73.00	77.90	84.20	89.45
v.d.Waerden	10.25	24.75	34.90	49.95	59.75	68.45	77.35	82.30	88.35	92.85
ATS	9.80	24.20	33.25	47.80	57.00	65.90	73.45	78.60	84.80	89.75



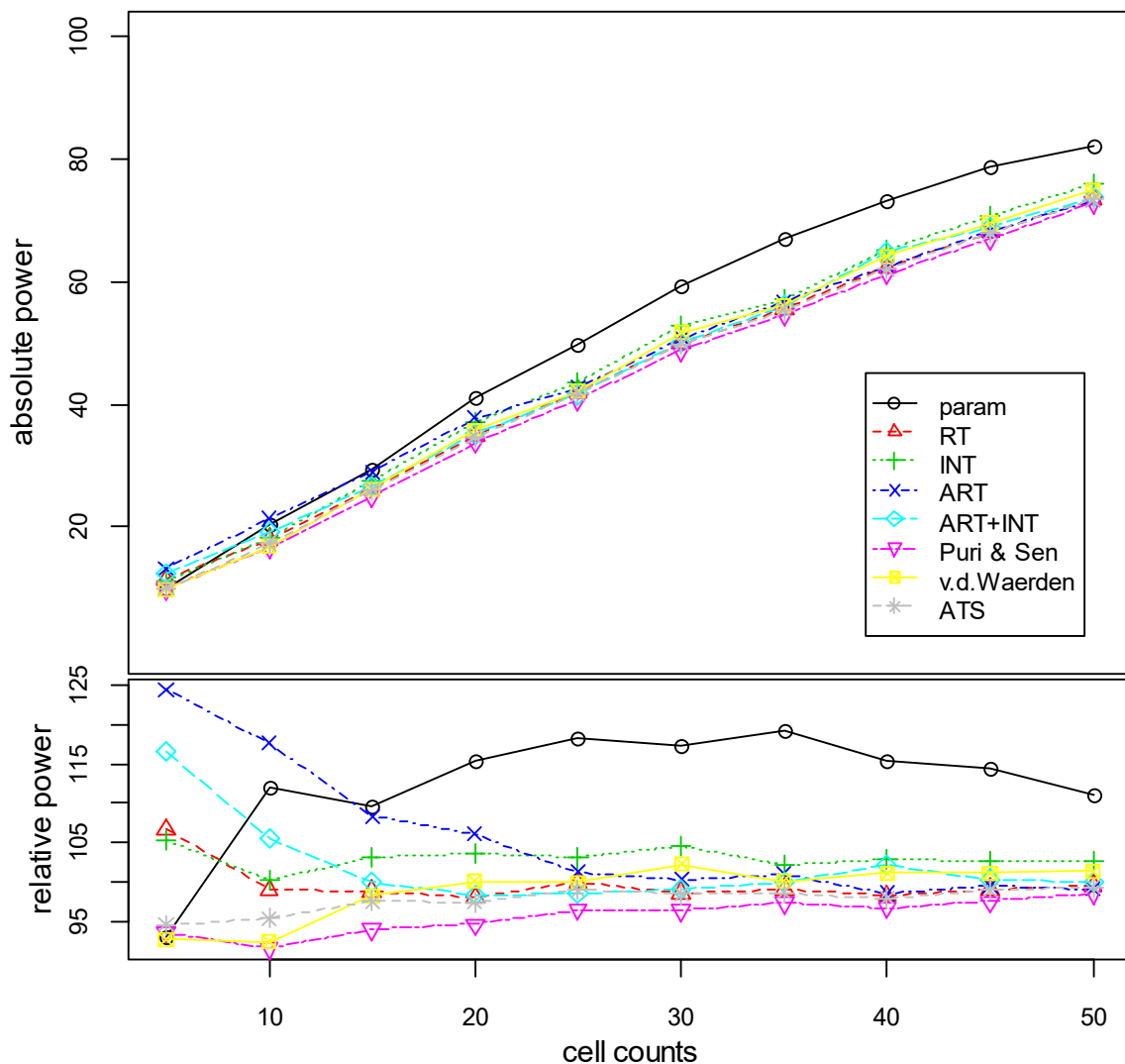
3. 11. 4 right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	13.45	26.40	40.05	52.20	64.60	74.20	79.10	87.15	90.70	94.25
RT	18.80	34.10	50.85	64.70	76.60	83.95	90.00	94.95	97.00	98.15
INT	20.90	40.60	61.40	77.90	88.85	93.40	96.50	98.80	99.40	99.75
ART	16.05	31.95	49.25	65.00	76.75	84.70	90.90	95.35	97.40	98.55
ART+INT	16.30	37.35	58.75	75.85	88.00	93.20	97.00	98.95	99.45	99.75
Puri & Sen	16.20	31.75	48.75	63.15	75.00	82.90	89.05	94.50	96.30	98.00
v.d.Waerden	17.95	37.85	58.80	75.50	87.50	92.50	96.30	98.65	99.20	99.65
ATS	16.60	33.55	50.50	64.20	76.35	83.70	89.80	94.90	96.95	98.10



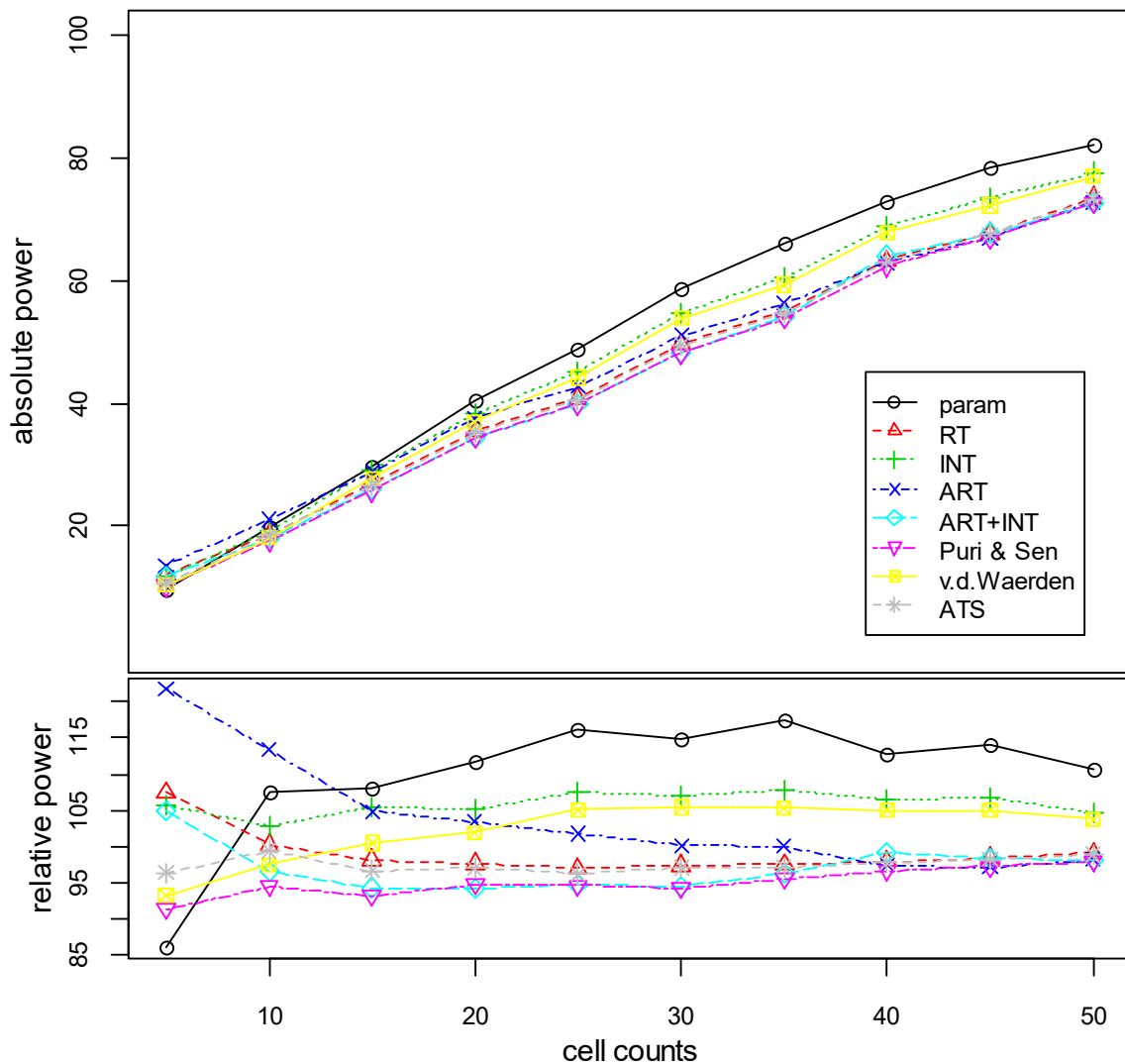
3. 11. 5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	9.95	20.40	29.30	41.20	49.85	59.25	66.90	73.20	78.60	82.05
RT	11.40	18.00	26.40	34.95	42.10	49.80	55.50	62.25	68.00	73.50
INT	11.25	18.25	27.55	37.00	43.40	52.80	57.20	65.15	70.50	75.75
ART	13.30	21.40	28.95	37.85	42.65	50.70	56.65	62.45	68.30	73.20
ART+INT	12.45	19.20	26.70	35.10	41.55	50.05	56.00	64.75	68.85	73.80
Puri & Sen	10.00	16.65	25.10	33.75	40.65	48.70	54.55	61.25	66.90	72.80
v.d.Waerden	9.90	16.80	26.25	35.70	42.10	51.65	56.10	64.05	69.40	74.85
ATS	10.10	17.35	26.05	34.75	41.70	49.75	55.30	62.05	67.90	73.35



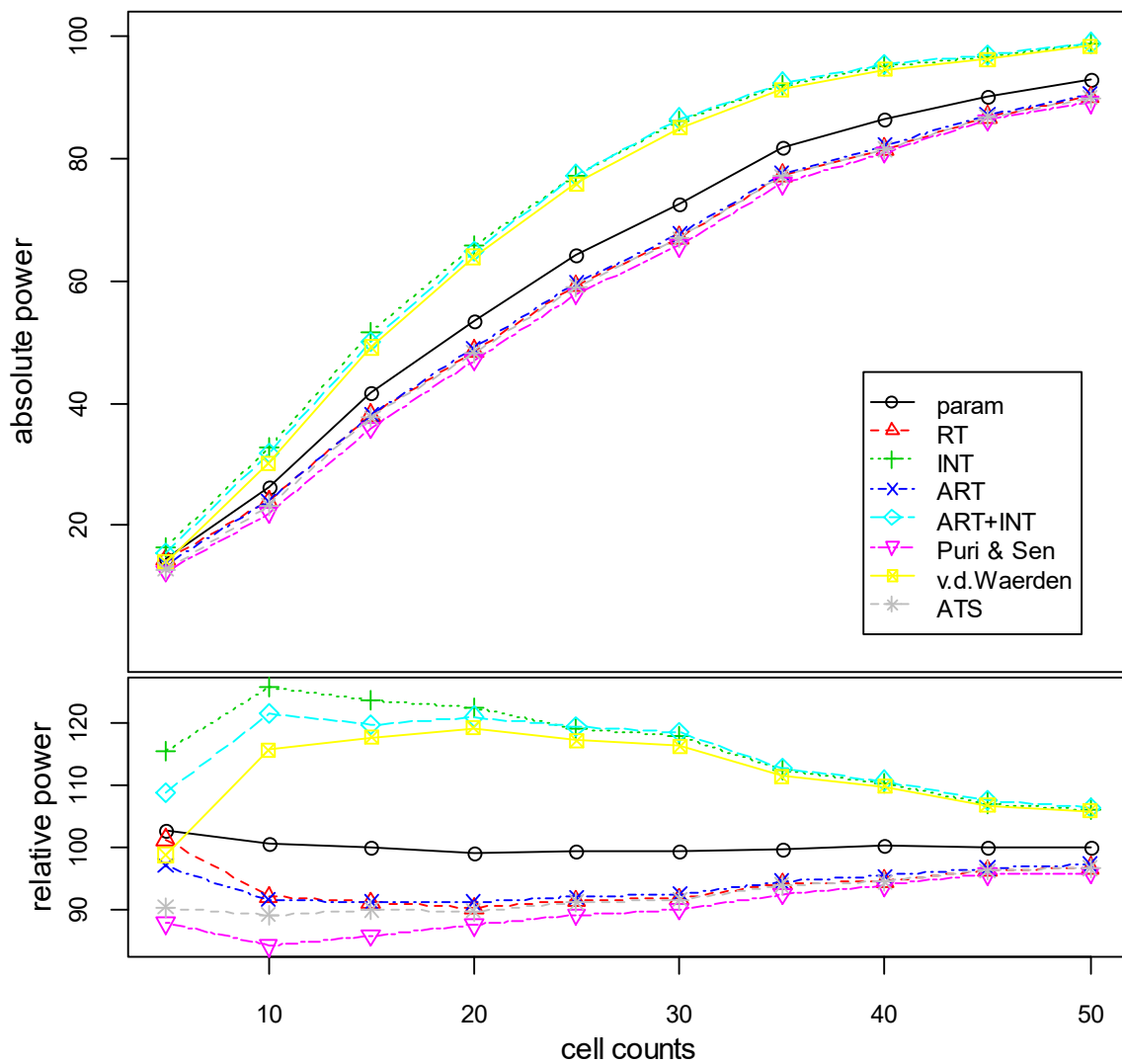
3. 11. 6 exponential distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	9.60	19.95	29.80	40.60	48.80	58.60	66.00	72.75	78.40	82.05
RT	12.00	18.60	27.05	35.45	40.75	49.65	54.80	63.20	67.65	73.40
INT	11.80	19.10	29.05	38.20	45.15	54.60	60.60	68.65	73.40	77.55
ART	13.60	21.05	28.90	37.60	42.75	51.05	56.25	62.85	66.80	72.75
ART+INT	11.70	17.90	26.00	34.25	39.80	48.10	54.15	64.00	67.70	72.65
Puri & Sen	10.20	17.55	25.70	34.45	39.75	48.05	53.75	62.35	66.85	72.55
v.d.Waerden	10.40	18.10	27.70	37.05	44.15	53.75	59.25	67.75	72.20	76.85
ATS	10.75	18.45	26.65	35.25	40.40	49.50	54.60	63.10	67.50	73.25



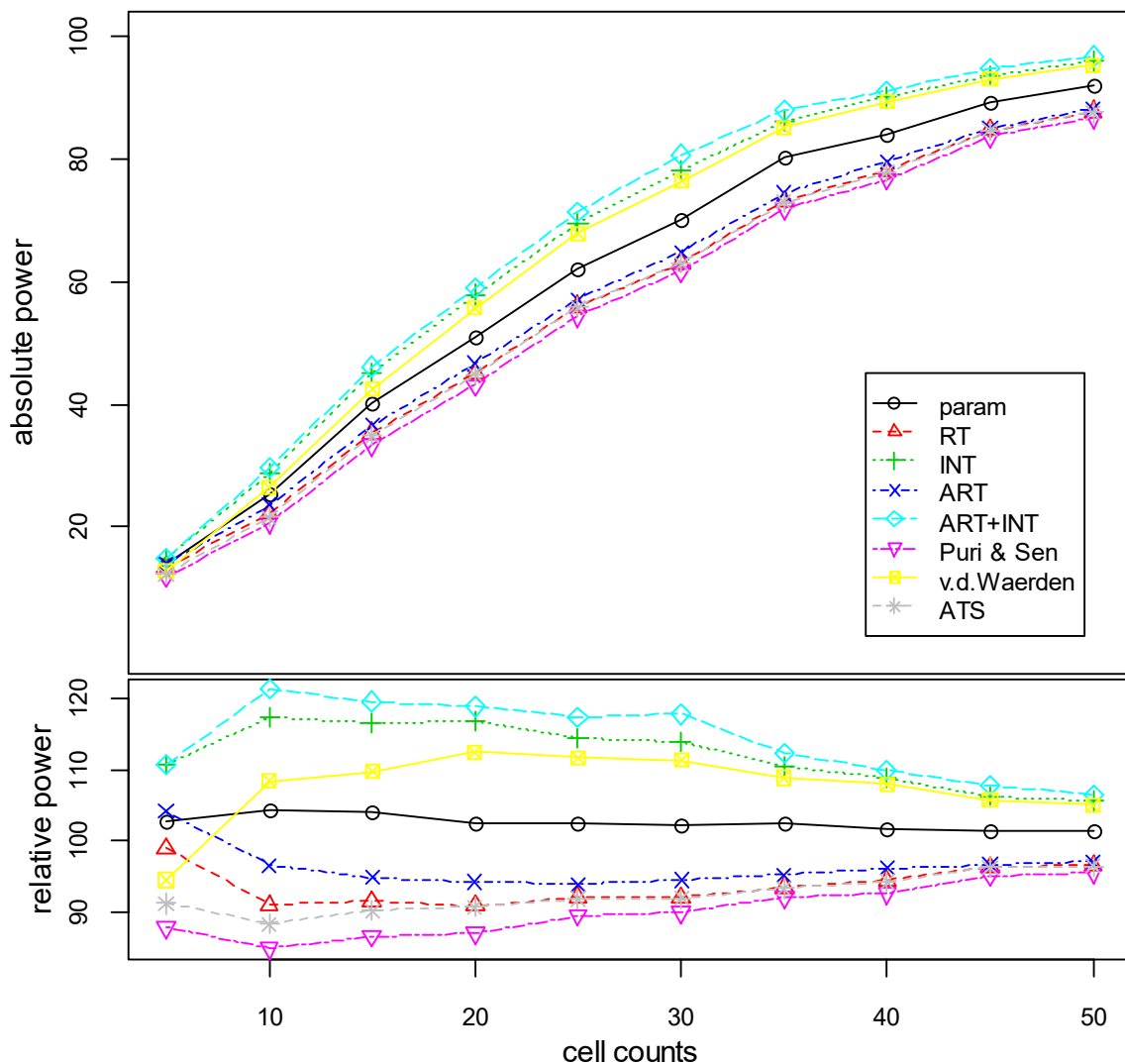
3. 11. 8 uniform distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.60	26.30	41.75	53.25	64.25	72.50	81.65	86.30	90.15	92.95
RT	14.40	24.10	38.05	48.45	59.15	66.95	77.20	81.45	86.75	89.90
INT	16.40	32.85	51.55	65.60	77.05	86.05	92.00	95.05	96.45	98.65
ART	13.80	24.00	38.10	48.95	59.55	67.55	77.50	82.15	87.10	90.40
ART+INT	15.45	31.80	49.90	64.90	77.25	86.50	92.35	95.35	96.75	98.80
Puri & Sen	12.50	22.05	35.90	47.00	57.75	65.75	75.80	80.85	86.25	89.05
v.d.Waerden	14.05	30.25	49.10	63.90	75.80	84.85	91.25	94.50	96.15	98.30
ATS	12.85	23.35	37.60	48.20	59.05	66.90	77.00	81.40	86.75	89.85



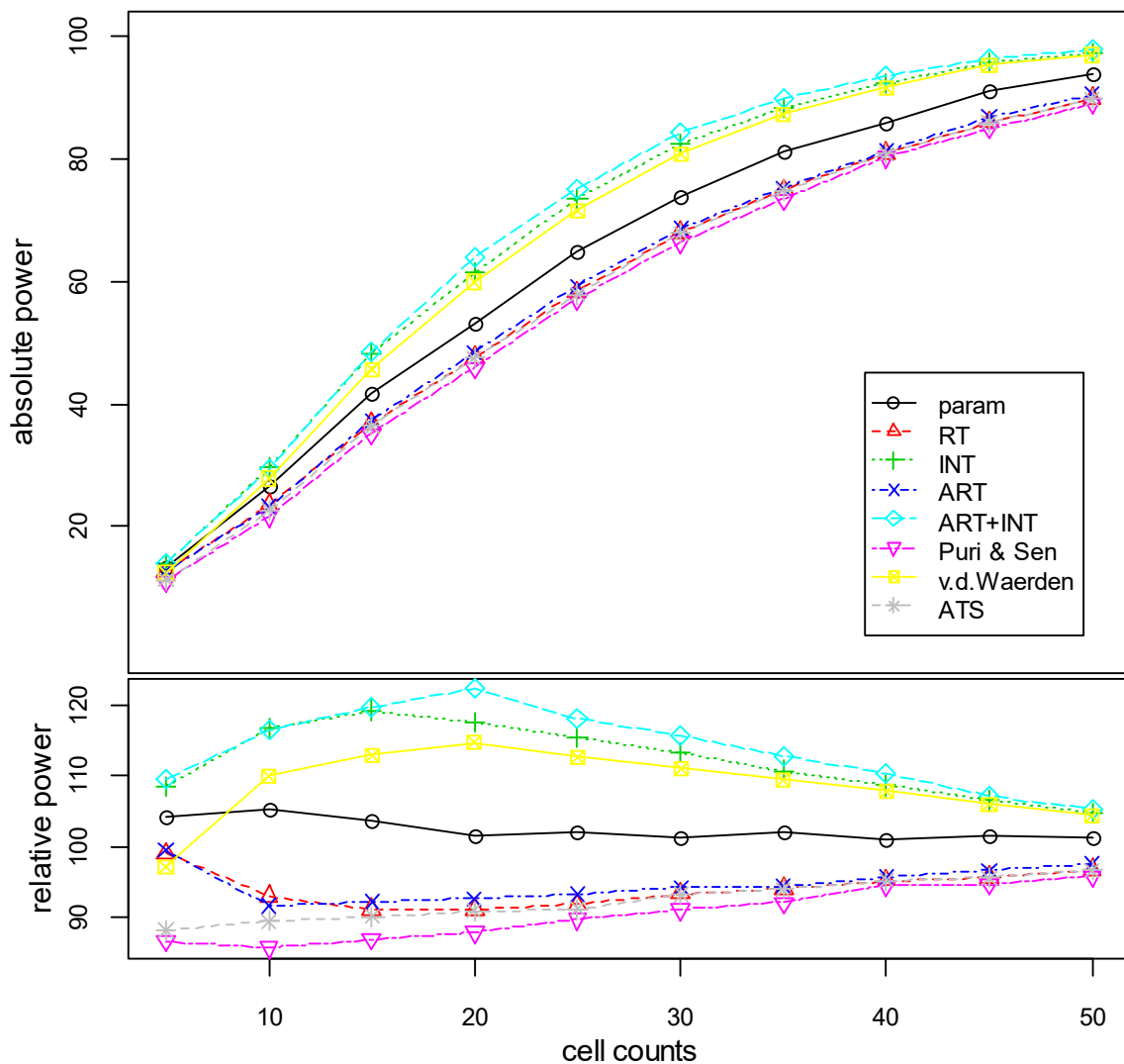
3. 11. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	13.90	25.50	40.15	50.80	62.15	70.05	80.05	83.95	89.15	92.05
RT	13.40	22.25	35.30	45.00	55.95	63.00	73.00	78.00	84.60	87.60
INT	15.00	28.70	45.00	57.85	69.40	77.95	86.20	89.95	93.35	95.75
ART	14.10	23.60	36.60	46.65	57.00	64.70	74.35	79.50	84.90	88.10
ART+INT	15.00	29.65	46.15	58.85	71.30	80.65	87.75	90.85	94.70	96.65
Puri & Sen	11.90	20.75	33.40	43.10	54.35	61.60	71.90	76.55	83.55	86.65
v.d.Waerden	12.80	26.50	42.35	55.70	67.80	76.25	85.00	89.20	92.90	95.25
ATS	12.35	21.60	34.80	44.90	55.75	62.90	72.85	77.85	84.60	87.45



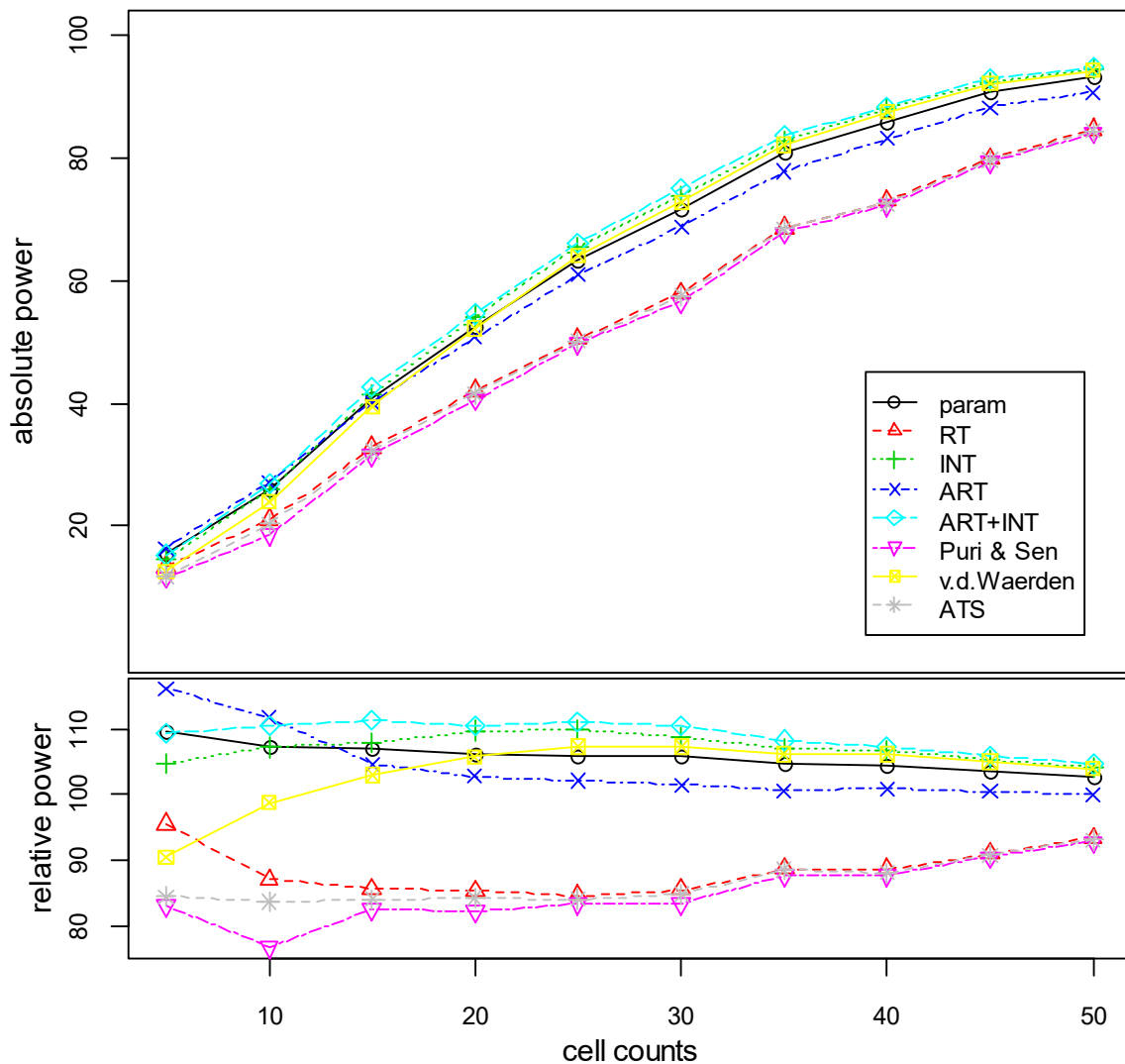
3. 11. 10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	13.35	26.65	41.85	52.95	64.80	73.60	81.15	85.75	91.05	93.80
RT	12.70	23.55	36.80	47.60	58.25	67.85	74.85	80.80	85.85	89.75
INT	13.90	29.55	48.20	61.40	73.30	82.30	88.15	92.15	95.55	97.05
ART	12.75	23.20	37.25	48.35	59.15	68.50	75.15	81.15	86.75	90.45
ART+INT	14.05	29.50	48.40	63.85	75.00	84.10	89.70	93.55	96.20	97.60
Puri & Sen	11.10	21.70	35.10	45.90	56.95	66.25	73.30	80.15	84.95	88.85
v.d.Waerden	12.45	27.85	45.65	59.90	71.50	80.75	87.15	91.55	95.15	96.85
ATS	11.30	22.65	36.40	47.45	57.85	67.80	74.80	80.75	85.80	89.65



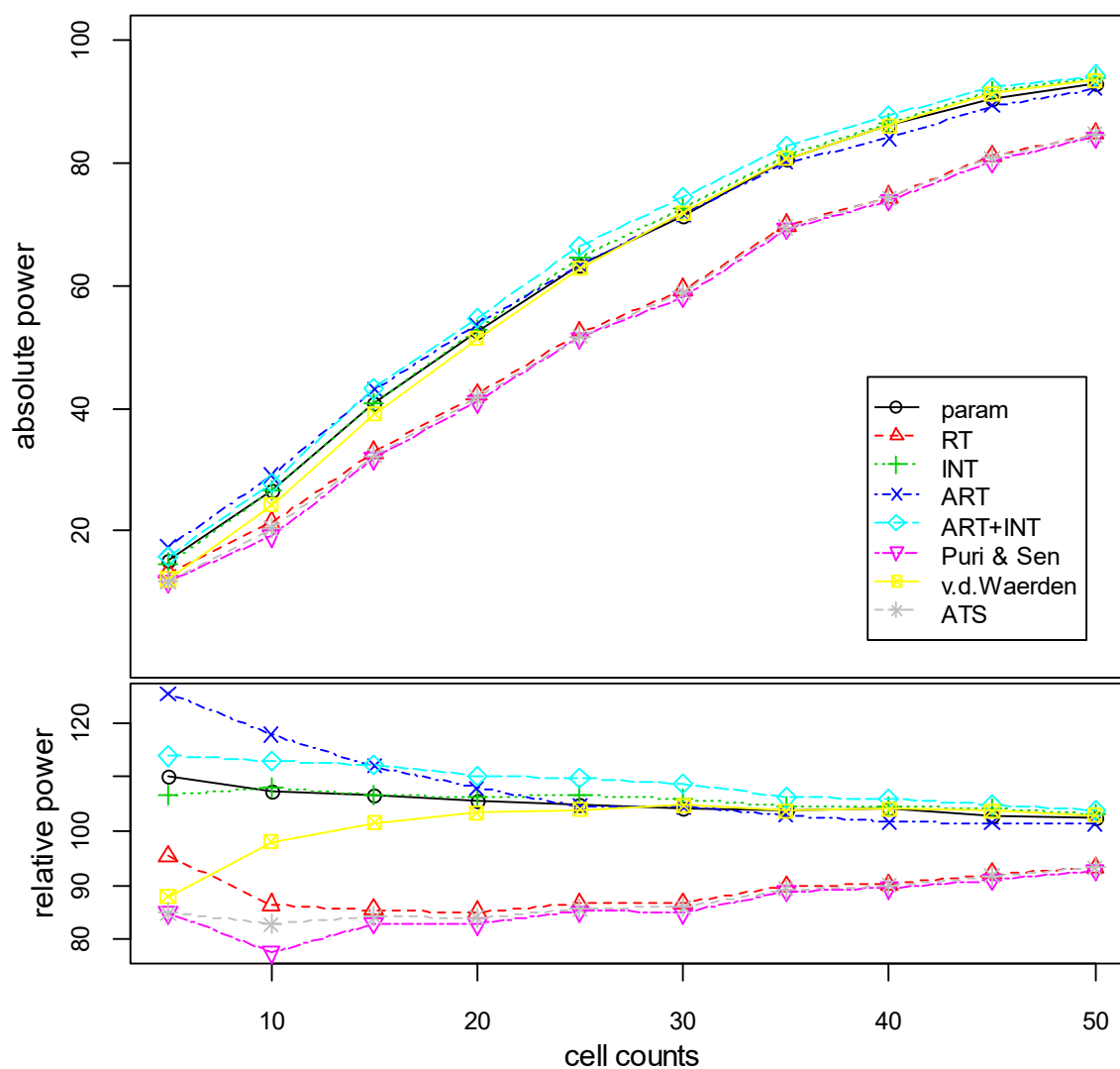
3. 11. 11 left skewed distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.40	26.00	40.90	52.40	63.15	71.65	80.85	85.85	90.75	93.00
RT	13.40	21.10	32.75	42.10	50.45	57.95	68.55	72.95	79.75	84.50
INT	14.70	26.00	41.25	54.15	65.50	73.70	82.65	87.90	92.25	94.35
ART	16.30	27.10	40.05	50.70	60.85	68.75	77.75	83.00	88.10	90.60
ART+INT	15.35	26.80	42.65	54.50	66.15	74.85	83.70	88.30	92.70	94.70
Puri & Sen	11.65	18.60	31.55	40.55	49.65	56.45	67.75	72.15	79.30	84.00
v.d.Waerden	12.70	23.95	39.40	52.20	63.95	72.70	82.05	87.35	92.05	94.15
ATS	11.85	20.30	32.15	41.55	50.10	57.45	68.45	72.45	79.60	84.25



3. 11. 12 left skewed distribution - unequal variances (on A and B)

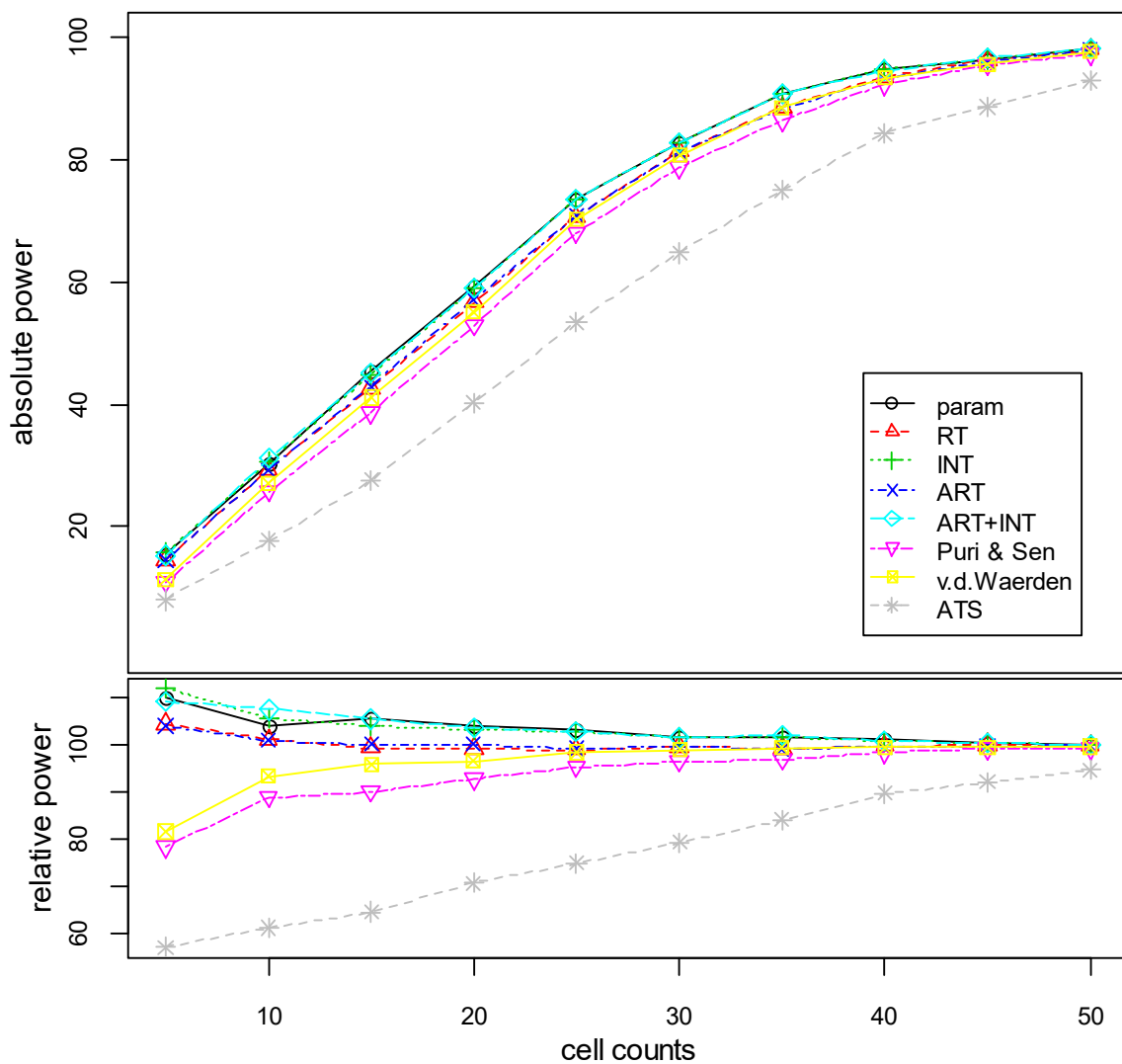
method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.25	26.55	40.90	52.35	63.40	71.35	80.65	85.95	90.45	92.85
RT	13.20	21.35	32.80	42.20	52.30	59.25	69.80	74.40	81.00	84.60
INT	14.75	26.70	40.90	52.75	64.35	72.45	81.20	86.35	91.60	93.60
ART	17.35	29.10	43.00	53.60	63.15	71.55	80.00	83.90	89.25	91.95
ART+INT	15.75	27.90	43.10	54.65	66.35	74.45	82.55	87.50	92.30	94.20
Puri & Sen	11.75	19.15	31.85	41.10	51.45	58.10	69.15	73.85	80.05	84.10
v.d.Waerden	12.15	24.20	39.00	51.30	62.75	71.75	80.65	85.95	91.20	93.30
ATS	11.75	20.45	32.30	41.70	51.70	58.80	69.40	74.25	80.70	84.50



3. 12. Interaction AB - A significant (effects $ab_{ij} = 0.4*s$ $a_i = 0.3*s$ / unequal n_i / # levels = 4*5)

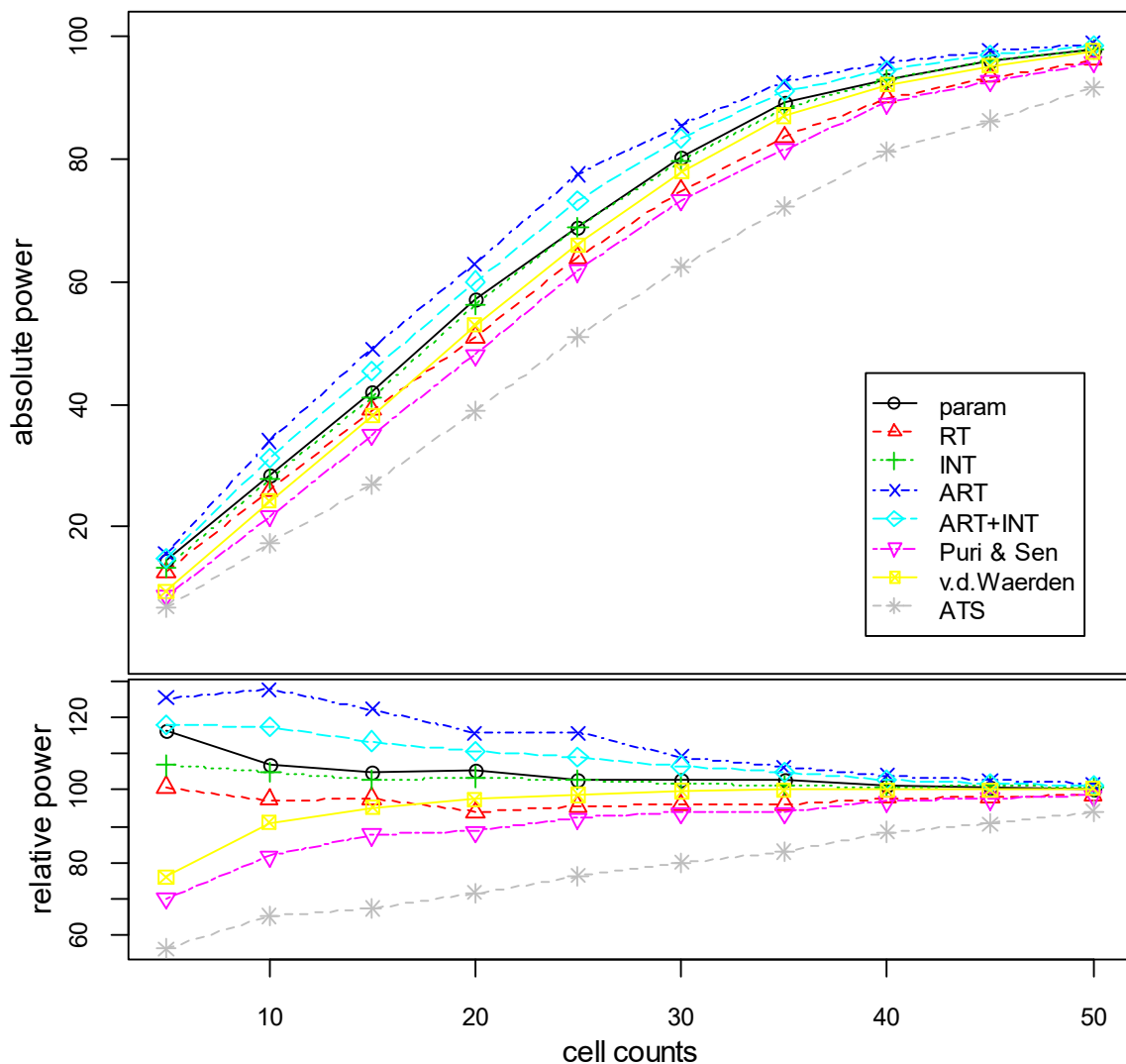
3. 12. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.45	30.25	45.30	59.20	73.50	82.75	90.65	94.70	96.30	98.00
RT	14.65	29.35	42.60	56.60	70.55	81.25	88.40	93.50	96.10	97.85
INT	15.70	30.65	44.65	58.90	73.30	82.70	90.55	94.55	96.35	98.05
ART	14.60	29.30	42.90	57.10	70.75	81.10	88.30	93.25	95.85	97.85
ART+INT	15.35	31.20	45.20	59.05	73.30	82.70	90.75	94.50	96.45	98.10
Puri & Sen	11.00	25.80	38.65	52.90	67.95	78.65	86.30	92.20	95.35	97.10
v.d.Waerden	11.45	27.10	41.10	55.05	70.15	80.65	88.45	93.20	95.55	97.55
ATS	8.00	17.75	27.65	40.25	53.35	64.65	74.90	84.10	88.50	92.80



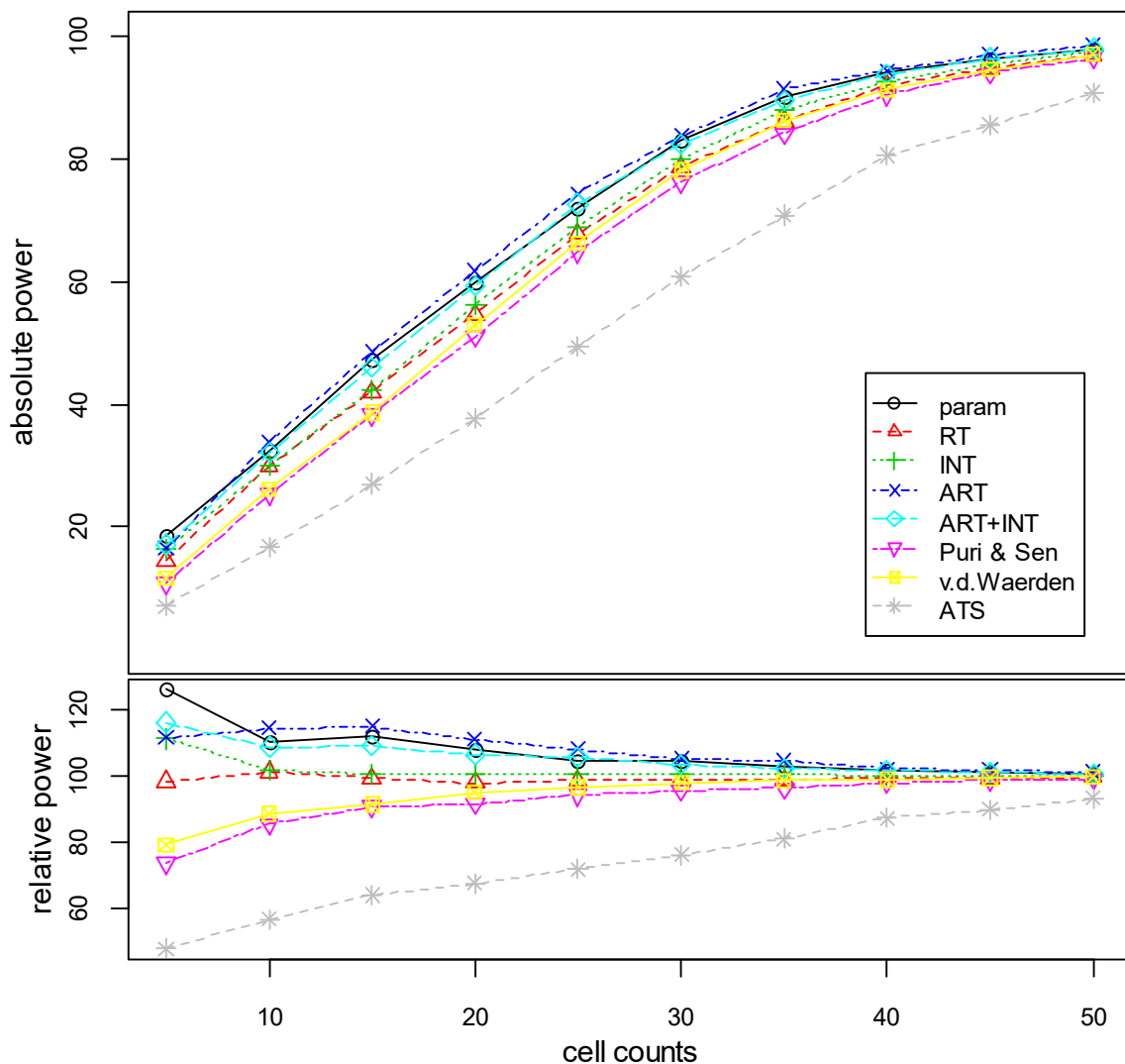
3. 12. 2 normal distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.60	28.50	41.90	57.15	68.85	80.10	89.15	92.90	95.90	97.60
RT	12.65	25.90	39.05	50.95	63.95	74.80	83.50	89.85	93.25	96.00
INT	13.40	27.90	41.15	56.25	68.75	79.55	88.10	92.75	96.05	97.70
ART	15.75	34.00	48.95	62.80	77.40	85.30	92.45	95.55	97.55	98.80
ART+INT	14.80	31.30	45.45	60.00	73.00	83.30	91.10	94.45	96.85	98.40
Puri & Sen	8.80	21.75	35.05	48.05	61.65	73.15	81.50	89.00	92.65	95.70
v.d.Waerden	9.55	24.20	38.05	52.85	65.95	77.80	86.95	91.95	95.10	97.45
ATS	7.05	17.35	26.95	38.85	51.00	62.40	72.10	81.20	86.20	91.50



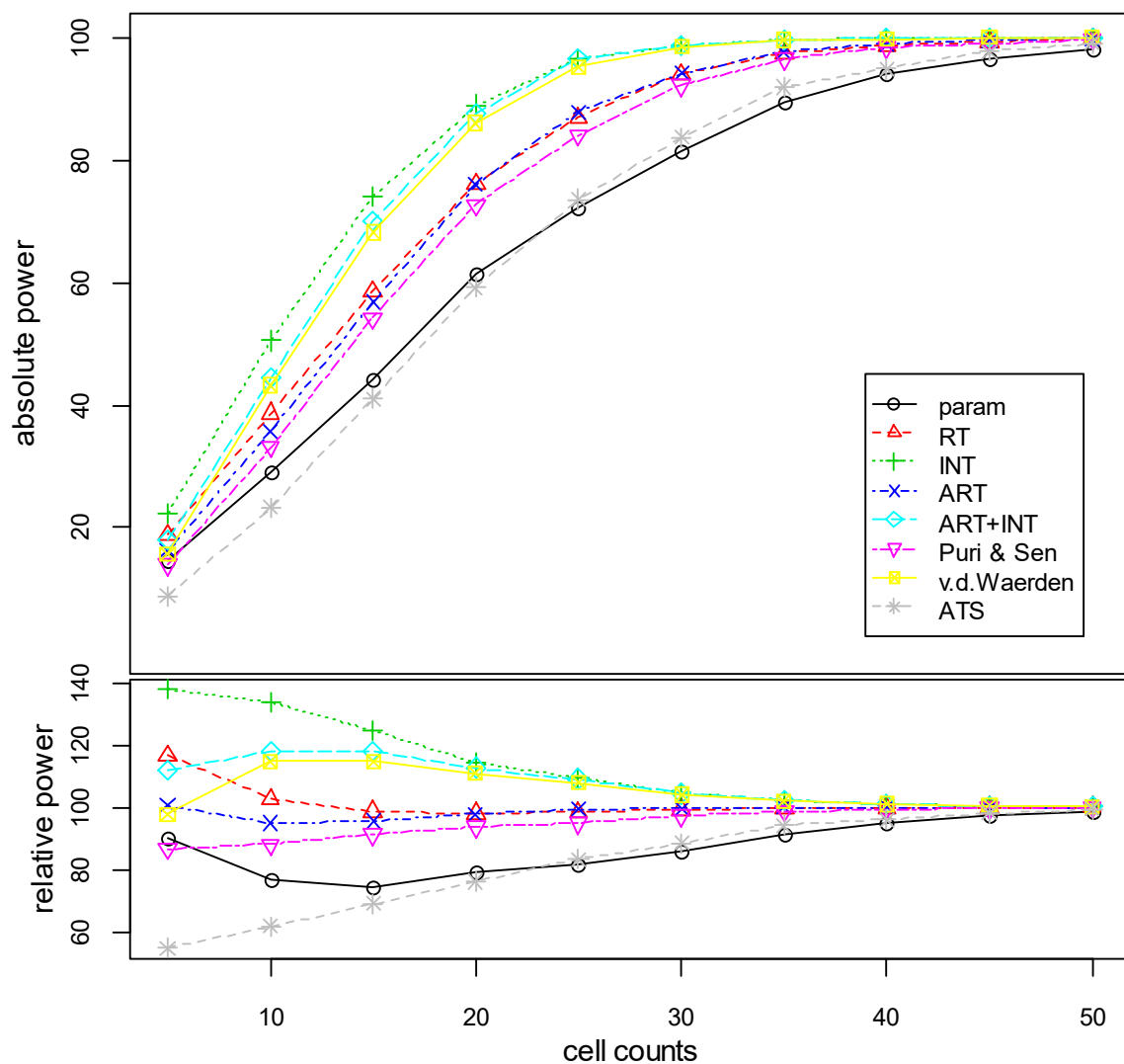
3. 12. 3 normal distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	18.65	32.55	47.30	59.95	71.85	83.10	90.00	94.00	96.20	97.90
RT	14.55	29.95	41.90	54.50	67.70	78.55	86.10	91.95	94.60	96.85
INT	16.45	30.10	42.40	56.05	68.95	80.00	87.90	92.40	95.30	97.45
ART	16.50	33.85	48.50	61.70	74.25	83.70	91.30	94.25	96.80	98.35
ART+INT	17.20	32.20	46.05	59.25	72.65	82.30	89.45	93.65	96.35	97.90
Puri & Sen	10.90	25.30	38.30	51.00	64.75	76.15	84.10	90.35	93.90	96.30
v.d.Waerden	11.75	26.20	38.60	52.90	66.25	78.05	86.20	91.20	94.50	96.95
ATS	7.10	16.80	27.05	37.65	49.35	60.70	70.80	80.50	85.40	90.65



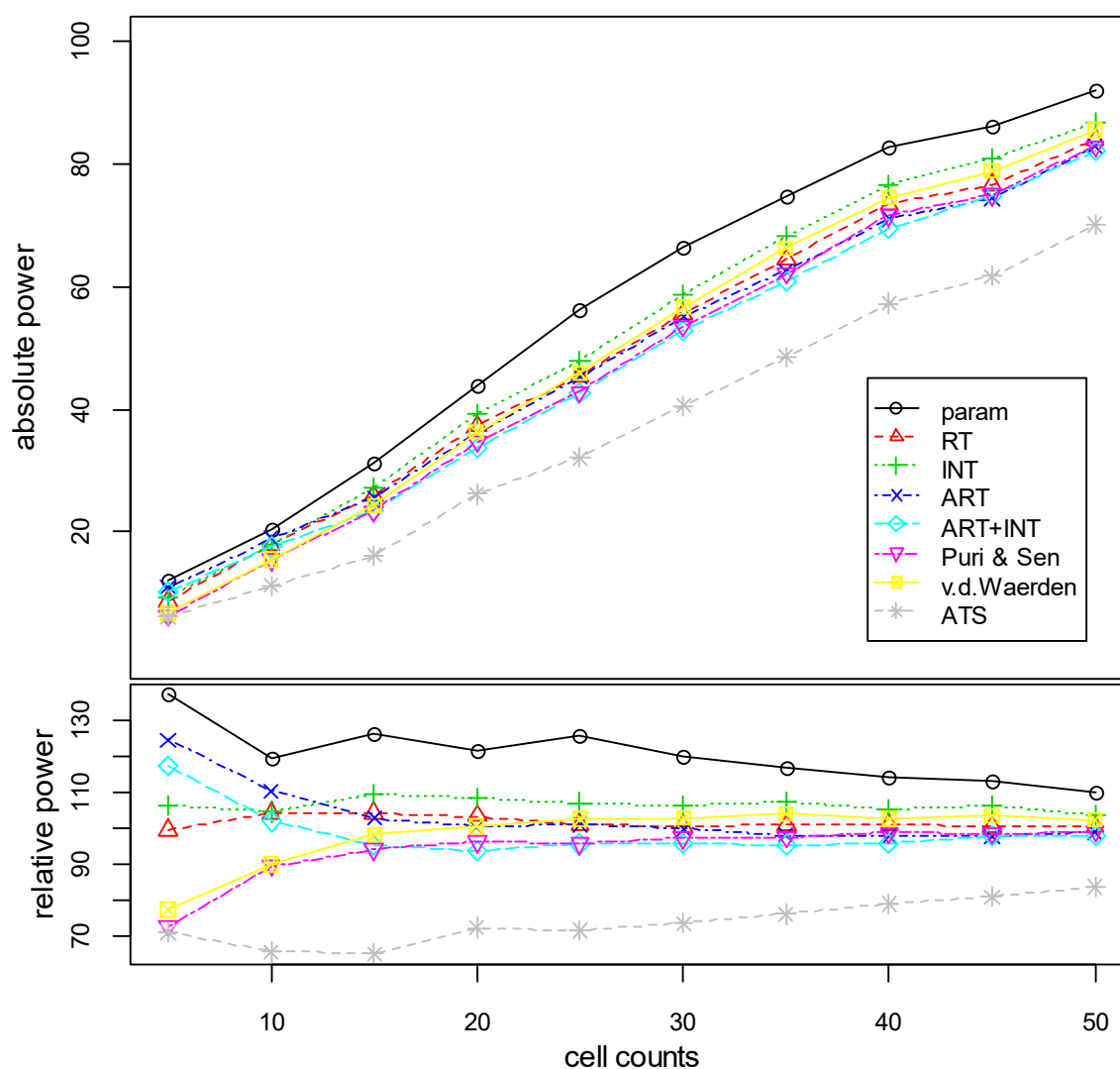
3. 12. 4 right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.55	28.95	44.30	61.30	72.10	81.35	89.40	94.10	96.60	98.15
RT	18.85	38.70	58.60	76.10	86.90	93.90	97.30	98.60	99.35	99.80
INT	22.25	50.50	74.05	88.95	96.60	98.70	99.60	99.80	100.0	100.0
ART	16.25	35.80	56.80	75.95	87.75	94.15	97.60	98.85	99.55	99.85
ART+INT	18.05	44.45	70.00	87.60	96.50	98.70	99.65	99.85	100.0	100.0
Puri & Sen	14.00	33.20	54.20	72.70	83.95	92.15	96.45	98.30	99.05	99.70
v.d.Waerden	15.80	43.25	68.20	86.05	95.25	98.40	99.60	99.75	100.0	100.0
ATS	8.85	23.30	41.05	59.15	73.55	83.70	91.90	94.85	97.65	99.05



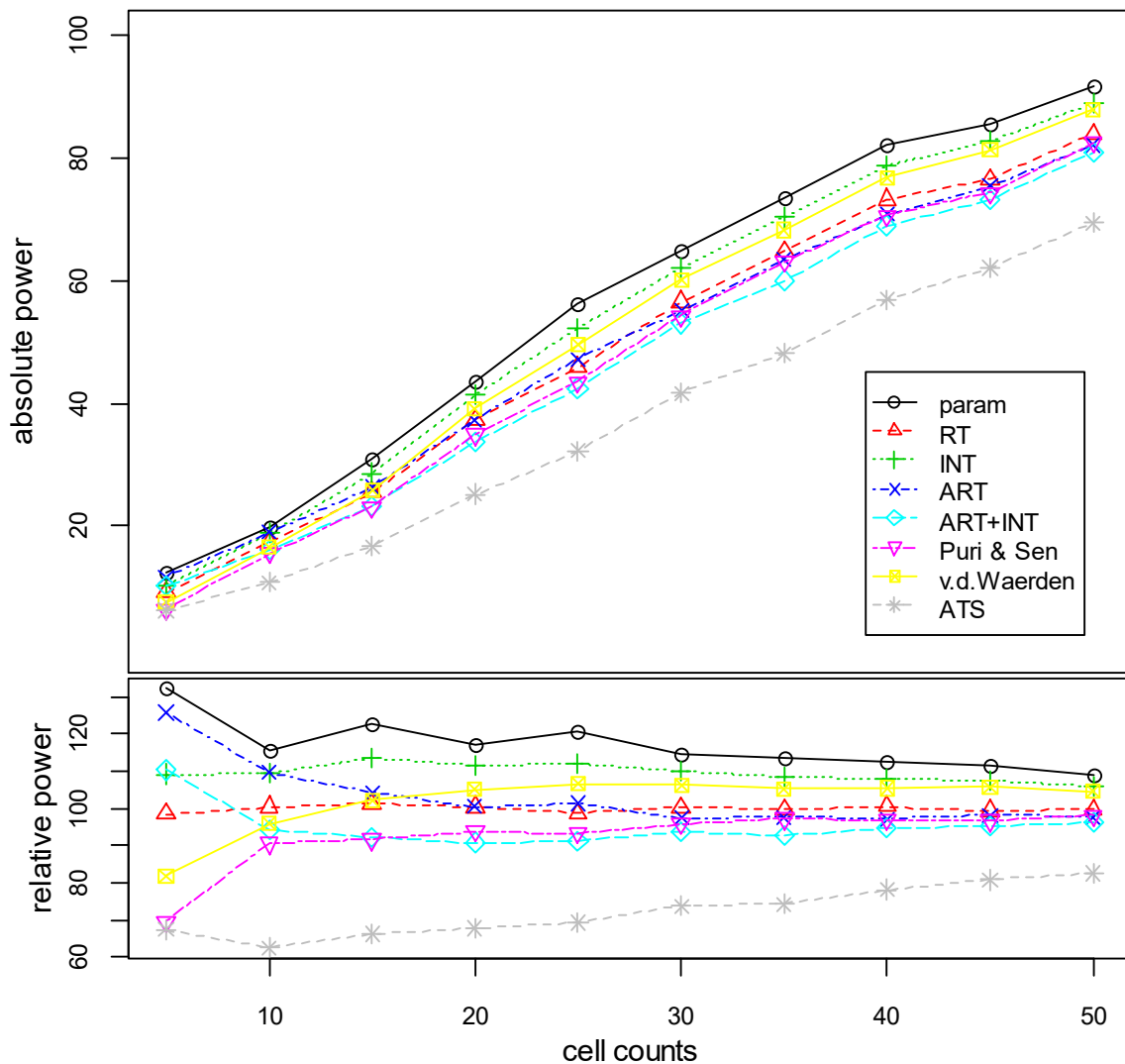
3. 12. 5 exponential distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	12.05	20.60	31.35	43.90	56.25	66.20	74.60	82.55	86.00	92.00
RT	8.75	17.95	25.90	37.35	45.25	55.45	64.40	73.30	76.50	83.95
INT	9.35	18.00	27.15	39.15	47.90	58.55	68.30	76.35	80.70	86.65
ART	10.95	19.00	25.55	36.25	45.20	55.00	62.55	70.95	74.35	82.75
ART+INT	10.30	17.55	23.65	33.80	42.75	52.70	60.90	69.50	74.55	81.95
Puri & Sen	6.40	15.45	23.40	34.75	42.80	53.55	62.15	71.55	74.95	82.85
v.d.Waerden	6.80	15.50	24.40	36.30	45.90	56.60	66.30	74.40	78.75	85.45
ATS	6.25	11.30	16.20	26.15	32.05	40.55	48.55	57.25	61.65	70.05



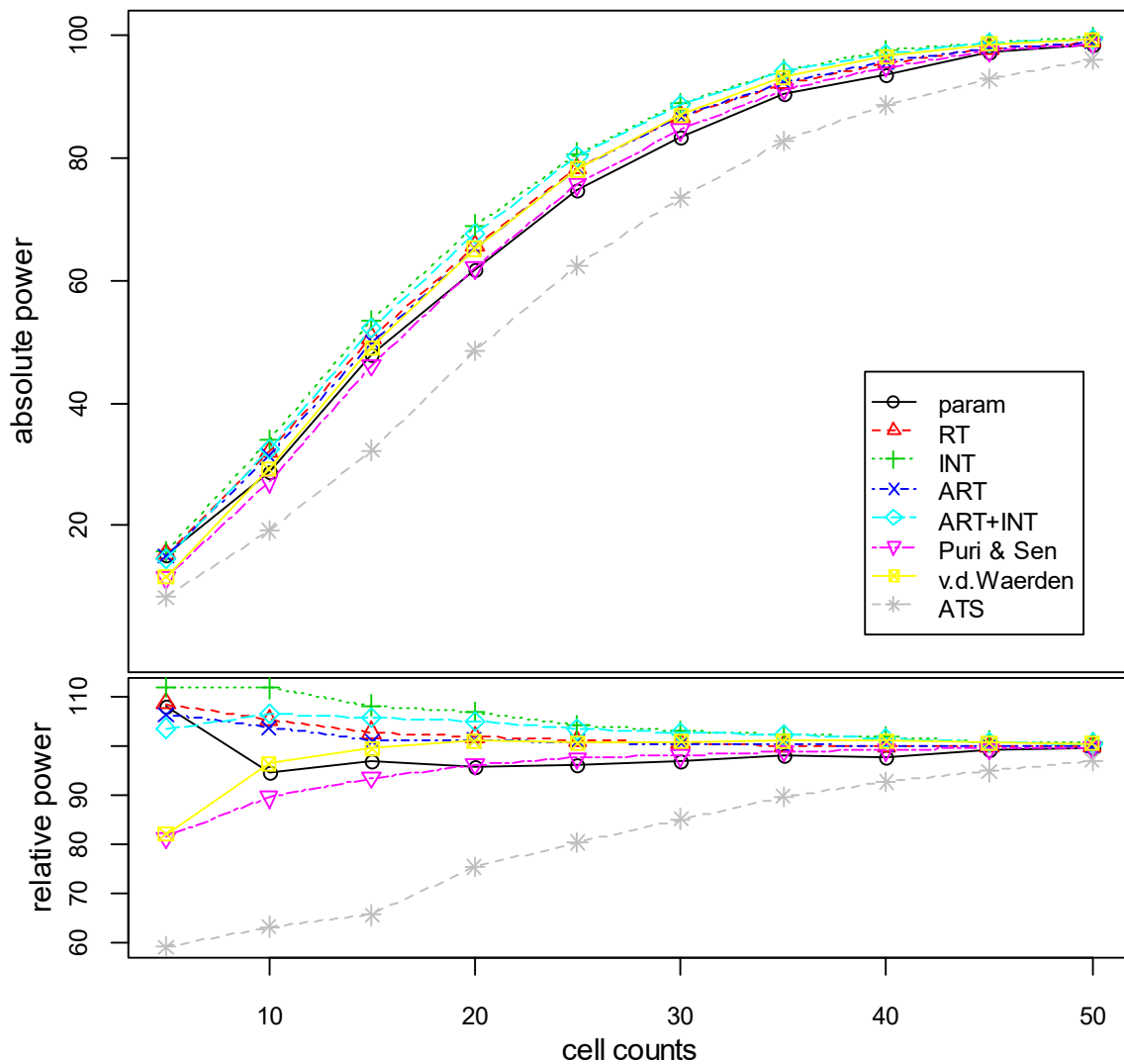
3. 12. 6 exponential distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	12.35	19.95	30.90	43.60	56.05	64.65	73.50	82.10	85.55	91.65
RT	9.20	17.35	25.50	37.35	45.80	56.55	64.65	73.15	76.40	83.75
INT	10.20	18.90	28.60	41.40	52.05	62.05	70.20	78.60	82.65	88.85
ART	11.75	18.95	26.30	37.35	47.10	55.05	63.30	70.70	75.35	82.05
ART+INT	10.30	16.25	23.25	33.80	42.45	52.95	60.00	68.95	73.20	80.75
Puri & Sen	6.50	15.65	23.10	34.90	43.40	54.20	63.05	70.50	74.25	82.40
v.d.Waerden	7.65	16.55	25.80	39.10	49.50	60.05	68.20	76.70	81.25	87.80
ATS	6.30	10.80	16.70	25.20	32.20	41.60	48.10	56.90	62.05	69.35



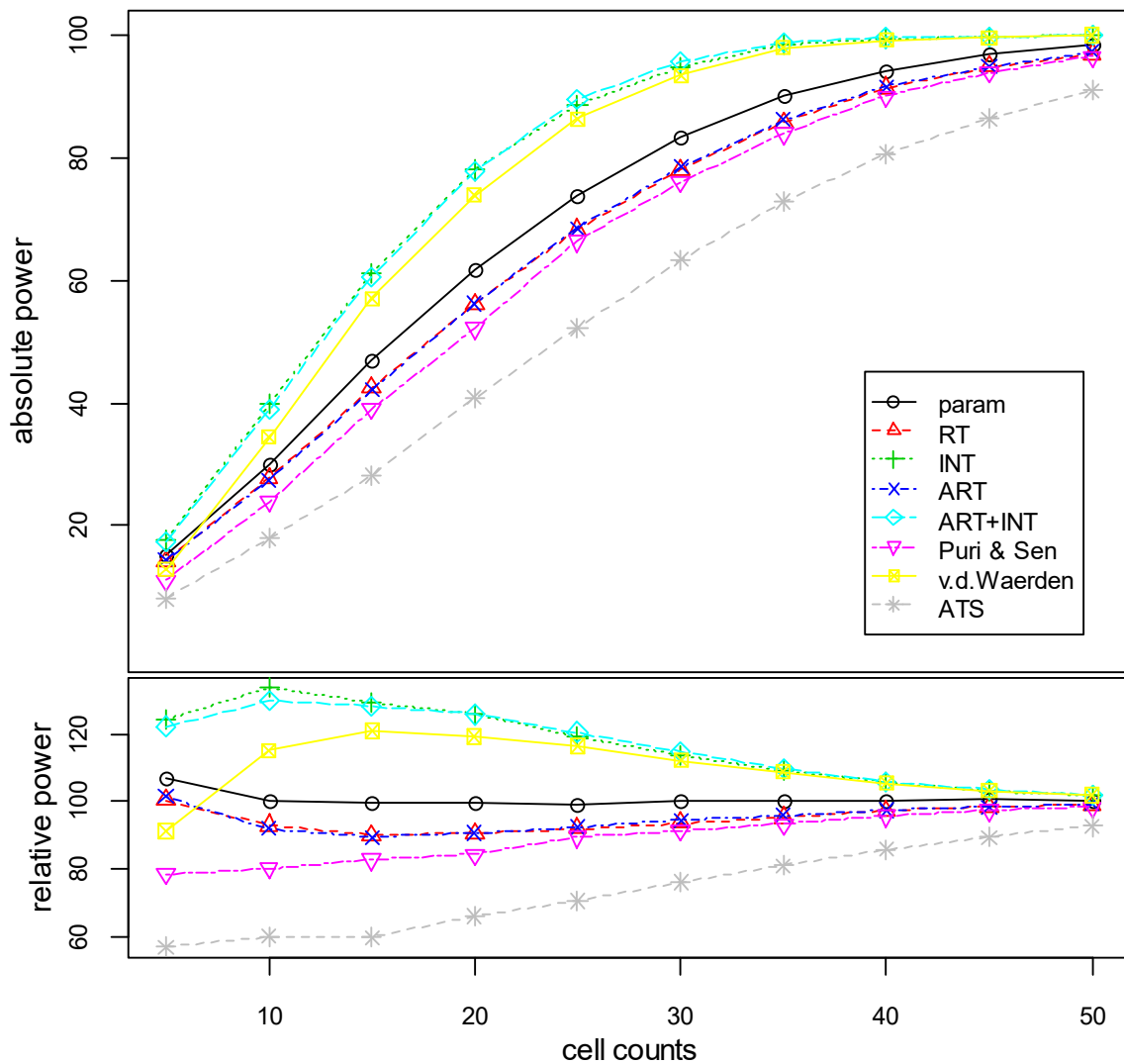
3. 12. 7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.25	28.75	47.75	61.75	74.50	83.40	90.40	93.45	97.00	98.50
RT	15.35	32.00	50.65	65.55	78.25	86.75	92.05	95.40	97.75	98.80
INT	15.80	33.95	53.35	68.95	80.65	88.85	94.20	97.30	98.75	99.45
ART	15.05	31.50	49.80	65.15	78.15	86.60	92.25	95.55	97.90	98.75
ART+INT	14.65	32.35	52.10	67.60	80.05	88.40	94.05	96.95	98.70	99.35
Puri & Sen	11.50	27.20	46.15	62.00	75.60	84.45	91.05	94.70	97.30	98.40
v.d.Waerden	11.60	29.30	49.00	65.10	78.05	86.90	93.05	96.45	98.45	99.25
ATS	8.35	19.20	32.30	48.55	62.25	73.35	82.55	88.50	92.75	95.90



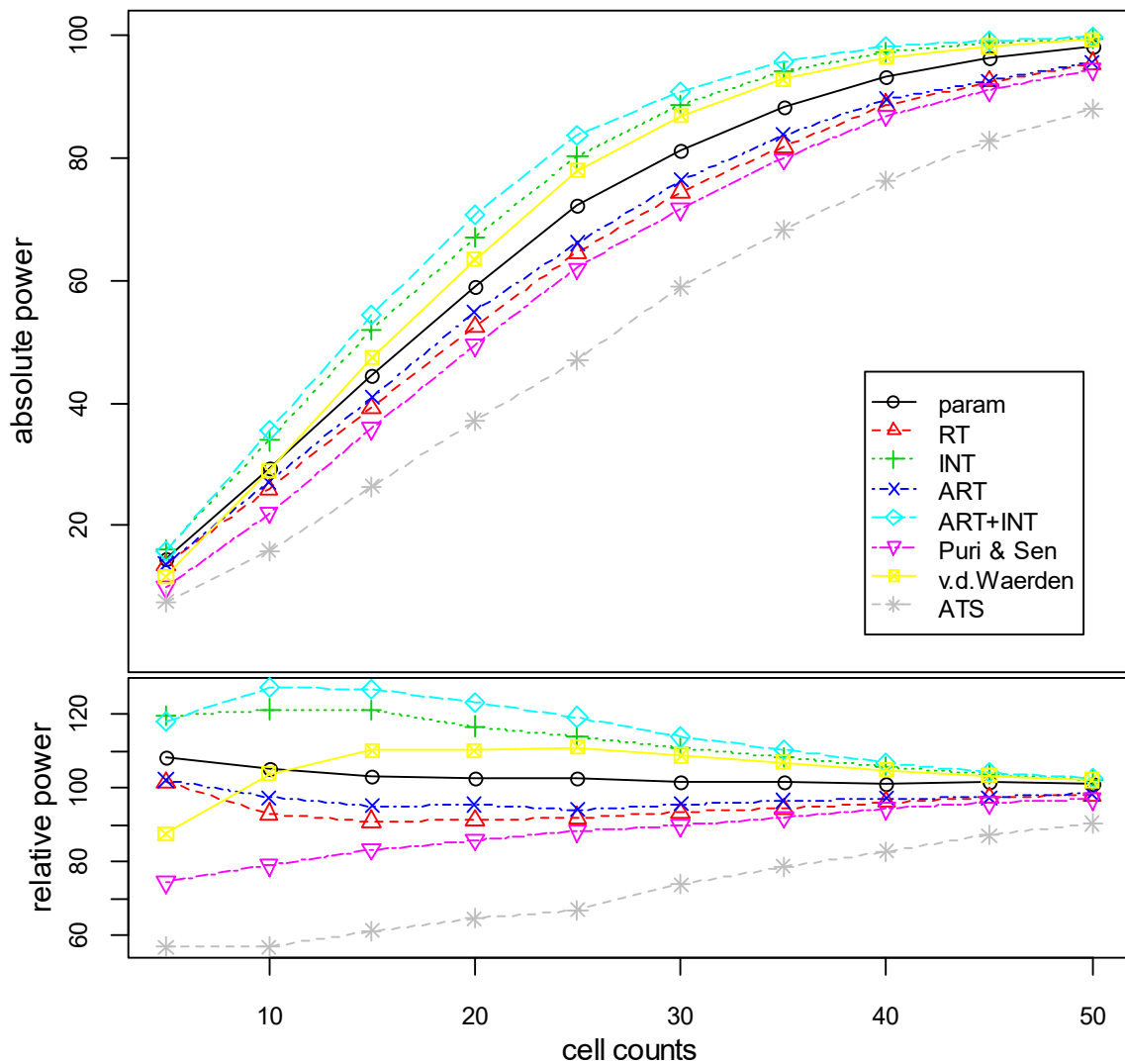
3. 12. 8 uniform distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.15	29.95	47.05	61.70	73.60	83.30	90.05	94.15	96.90	98.25
RT	14.20	27.80	42.45	56.10	68.20	77.95	85.65	91.35	94.80	96.90
INT	17.55	39.95	61.00	77.90	88.50	94.70	98.30	99.25	99.50	99.90
ART	14.35	27.50	42.15	56.15	68.40	78.50	86.20	91.55	94.75	97.25
ART+INT	17.30	38.85	60.55	77.85	89.35	95.65	98.55	99.45	99.70	99.90
Puri & Sen	11.10	23.95	39.00	52.20	66.30	76.00	83.85	89.95	93.80	96.40
v.d.Waerden	12.90	34.40	57.05	73.85	86.25	93.30	97.80	99.05	99.45	99.90
ATS	8.05	17.95	28.15	40.85	52.20	63.30	72.80	80.55	86.30	90.85



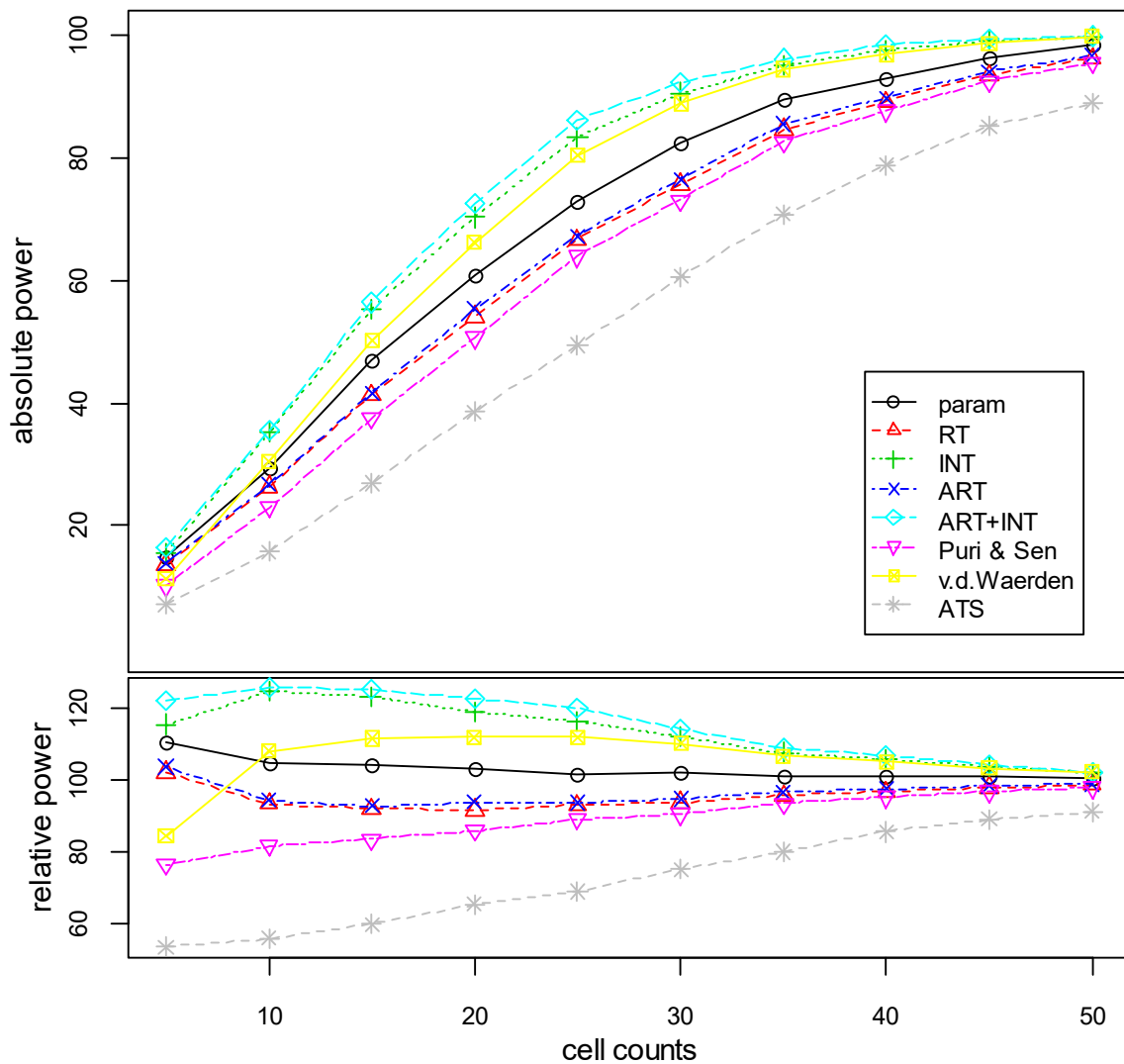
3. 12. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.55	29.40	44.35	59.00	72.05	81.15	88.25	93.15	96.30	98.05
RT	13.60	25.95	39.10	52.40	64.50	74.35	81.80	88.50	92.30	95.35
INT	16.05	33.85	51.95	67.05	80.05	88.45	94.05	97.05	98.55	99.30
ART	13.70	27.15	40.85	54.85	66.00	76.30	83.70	89.45	92.40	95.50
ART+INT	15.85	35.45	54.40	70.75	83.70	90.65	95.50	98.00	99.00	99.60
Puri & Sen	10.00	22.05	35.85	49.40	61.90	71.55	79.75	86.75	90.95	94.30
v.d.Waerden	11.75	29.00	47.35	63.30	77.85	86.75	92.70	96.35	98.05	99.25
ATS	7.65	15.90	26.35	37.10	47.00	58.85	68.20	76.20	82.65	87.80



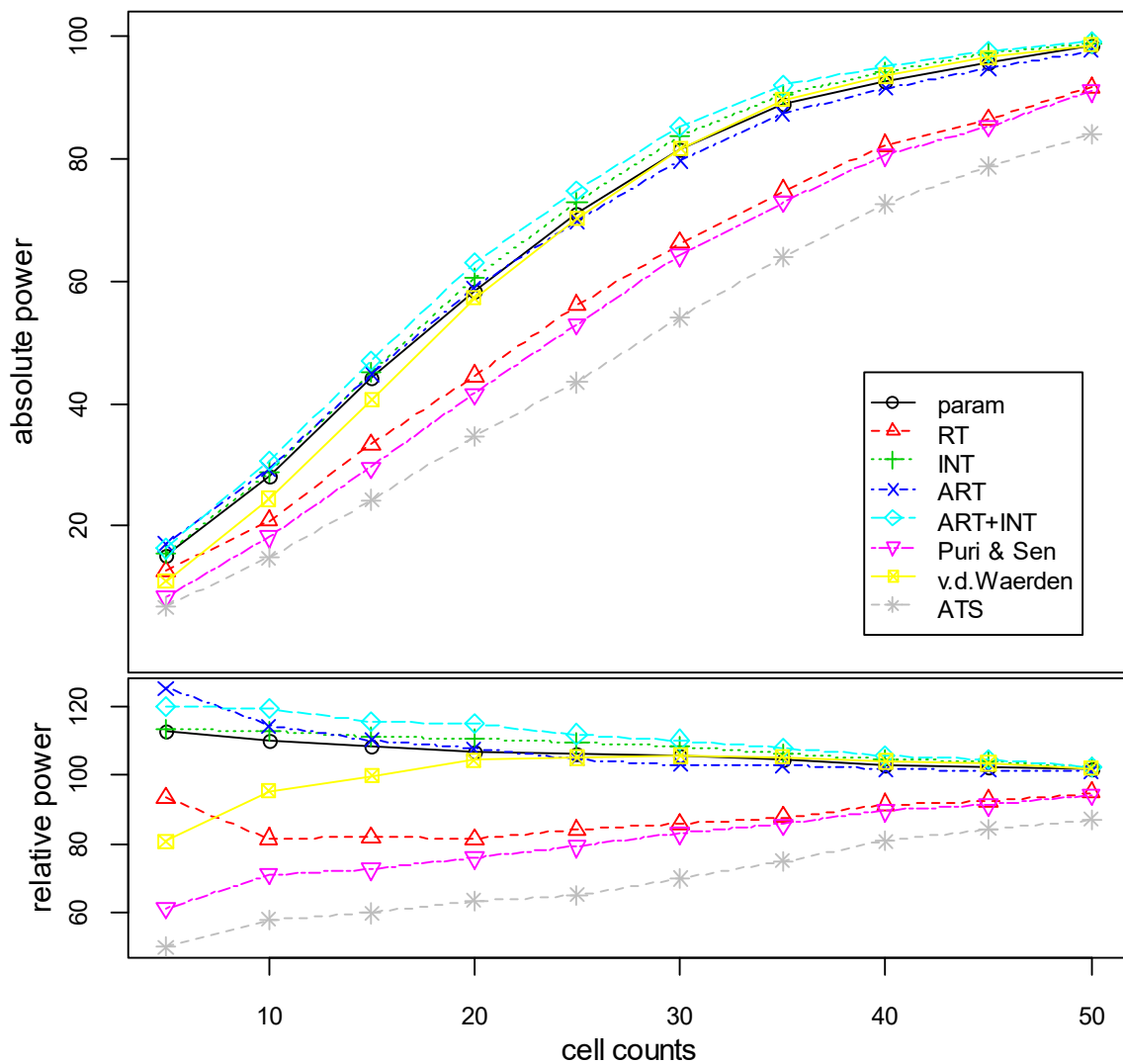
3. 12. 10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	14.85	29.50	46.85	60.70	72.95	82.25	89.50	92.95	96.15	98.25
RT	13.75	26.35	41.30	54.10	66.60	75.55	84.55	89.05	93.35	96.15
INT	15.55	35.20	55.35	70.20	83.40	90.50	95.10	97.50	98.90	99.65
ART	13.95	26.65	41.65	55.30	67.15	76.40	85.45	89.70	93.90	96.50
ART+INT	16.45	35.45	56.35	72.45	86.00	92.30	96.05	98.45	99.35	99.75
Puri & Sen	10.30	23.05	37.50	50.65	63.85	73.00	82.55	87.60	92.40	95.35
v.d.Waerden	11.35	30.50	50.15	66.10	80.30	88.80	94.35	96.80	98.60	99.65
ATS	7.20	15.75	26.90	38.55	49.40	60.60	70.70	78.70	85.00	88.85



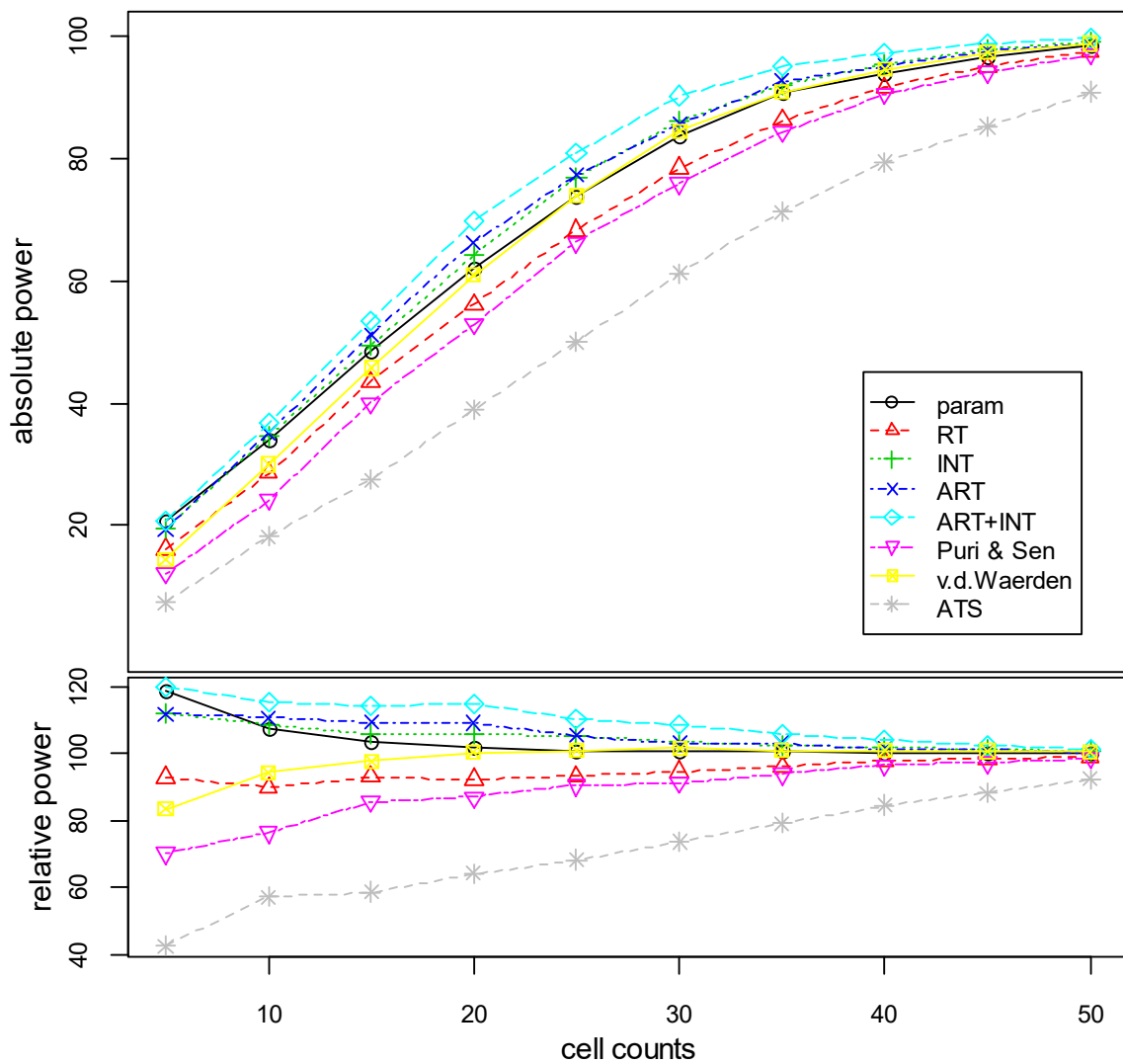
3. 12. 11 left skewed distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.35	28.20	44.05	58.35	70.85	81.50	88.75	92.50	95.70	98.25
RT	12.70	20.90	33.25	44.55	56.00	66.15	74.65	82.05	86.25	91.55
INT	15.40	28.90	45.15	60.45	72.85	83.70	90.45	93.95	97.00	98.80
ART	17.05	29.30	44.80	58.90	69.75	79.55	87.30	91.35	94.65	97.55
ART+INT	16.30	30.55	47.05	62.85	74.65	85.15	91.75	94.90	97.30	98.85
Puri & Sen	8.35	18.25	29.55	41.55	52.85	64.10	72.85	80.50	85.20	90.90
v.d.Waerden	11.00	24.45	40.60	57.20	70.10	81.55	89.55	93.45	96.45	98.45
ATS	6.80	14.85	24.30	34.70	43.40	53.95	63.85	72.50	78.65	84.00



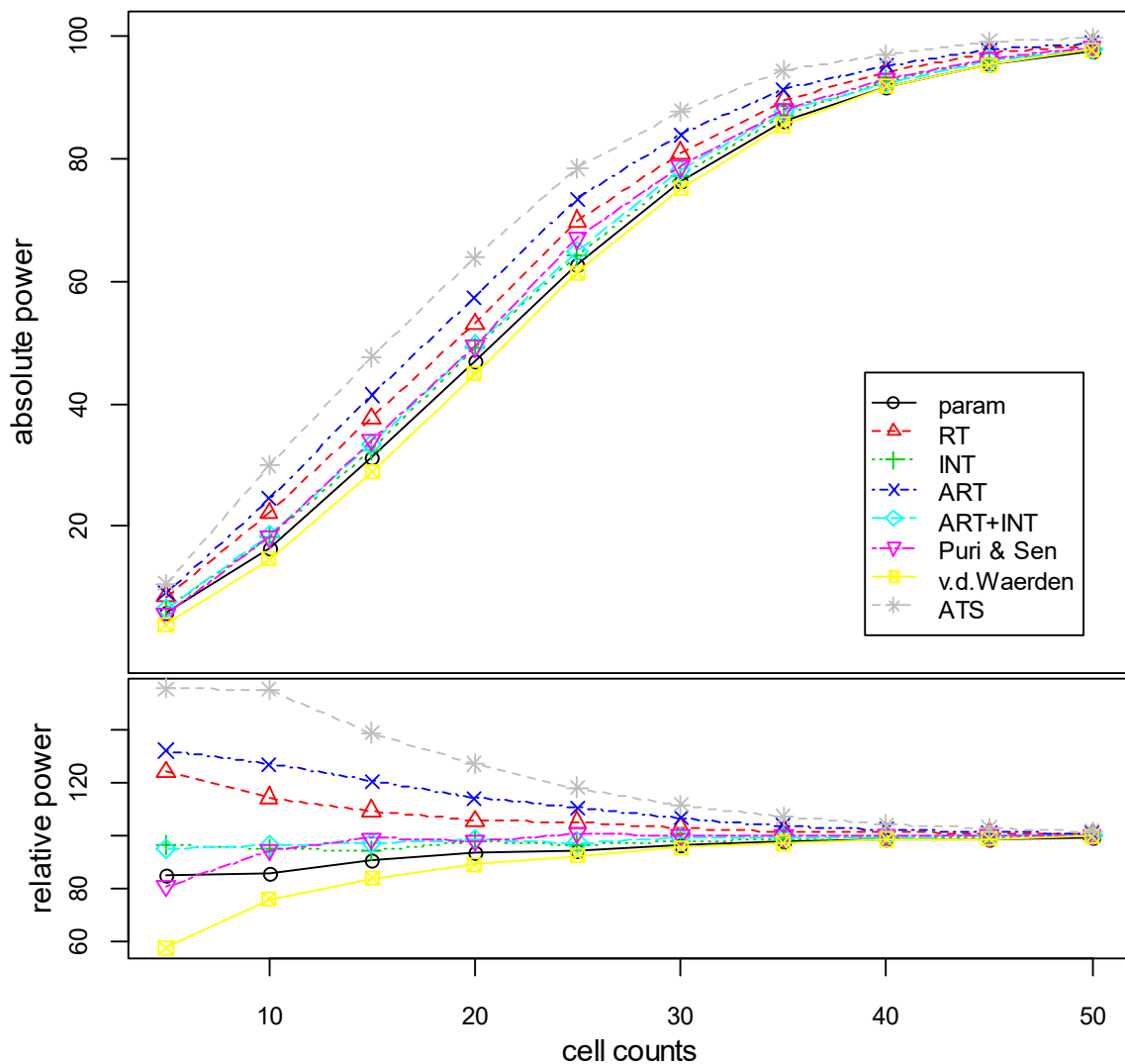
3. 12. 12 left skewed distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	20.65	34.15	48.40	61.90	73.80	83.60	90.55	93.65	96.50	98.50
RT	16.15	28.60	43.50	56.05	68.20	78.40	86.20	91.50	94.90	97.30
INT	19.45	34.50	49.40	64.25	76.85	86.05	92.00	95.20	97.75	98.95
ART	19.45	35.20	51.15	66.30	77.15	85.55	92.60	95.10	97.55	98.60
ART+INT	20.80	36.70	53.35	69.65	80.70	90.20	95.00	97.25	98.60	99.45
Puri & Sen	12.20	24.30	40.05	52.85	66.20	75.85	84.35	90.45	94.00	96.95
v.d.Waerden	14.50	30.00	45.70	60.90	73.80	84.40	90.70	94.40	97.25	98.70
ATS	7.40	18.20	27.45	39.00	49.95	61.15	71.20	79.25	85.15	90.80



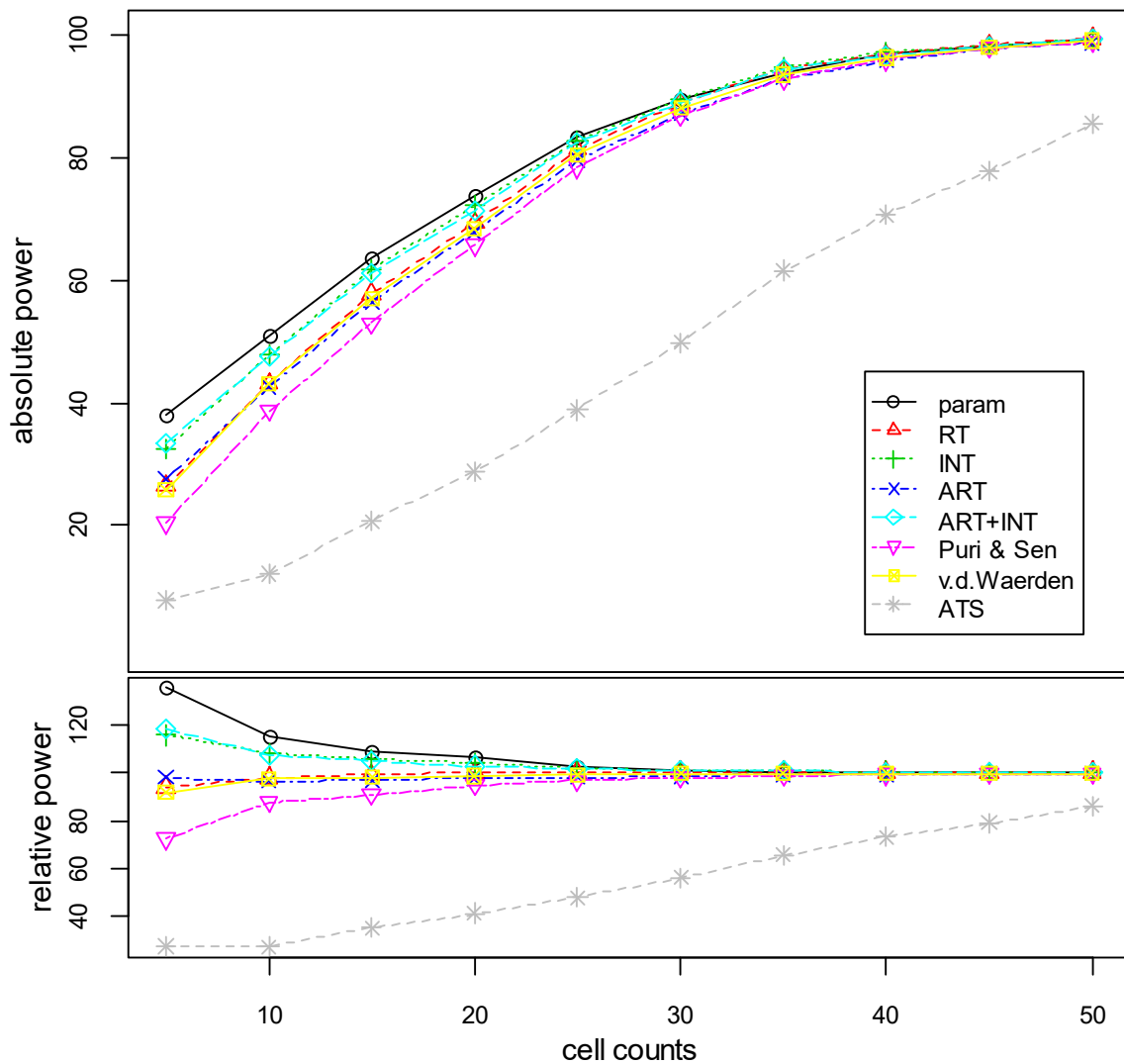
3. 12. 13 normal distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	5.85	16.60	31.30	47.00	62.60	76.10	86.15	91.55	95.15	97.45
RT	8.55	22.15	37.60	53.05	69.75	80.90	89.45	94.05	97.20	98.40
INT	6.65	18.40	32.45	49.15	64.15	77.20	87.05	92.65	96.00	97.80
ART	9.10	24.60	41.40	57.35	73.35	83.85	91.20	95.05	97.65	98.80
ART+INT	6.55	18.70	33.40	49.55	64.70	77.95	87.60	92.35	96.05	97.75
Puri & Sen	5.60	18.30	34.05	49.35	66.90	78.60	87.95	92.95	96.30	98.20
v.d.Waerden	4.00	14.75	28.80	44.85	61.35	75.05	85.45	91.65	95.15	97.70
ATS	10.70	30.00	47.65	63.80	78.35	87.65	94.25	96.75	99.10	99.60



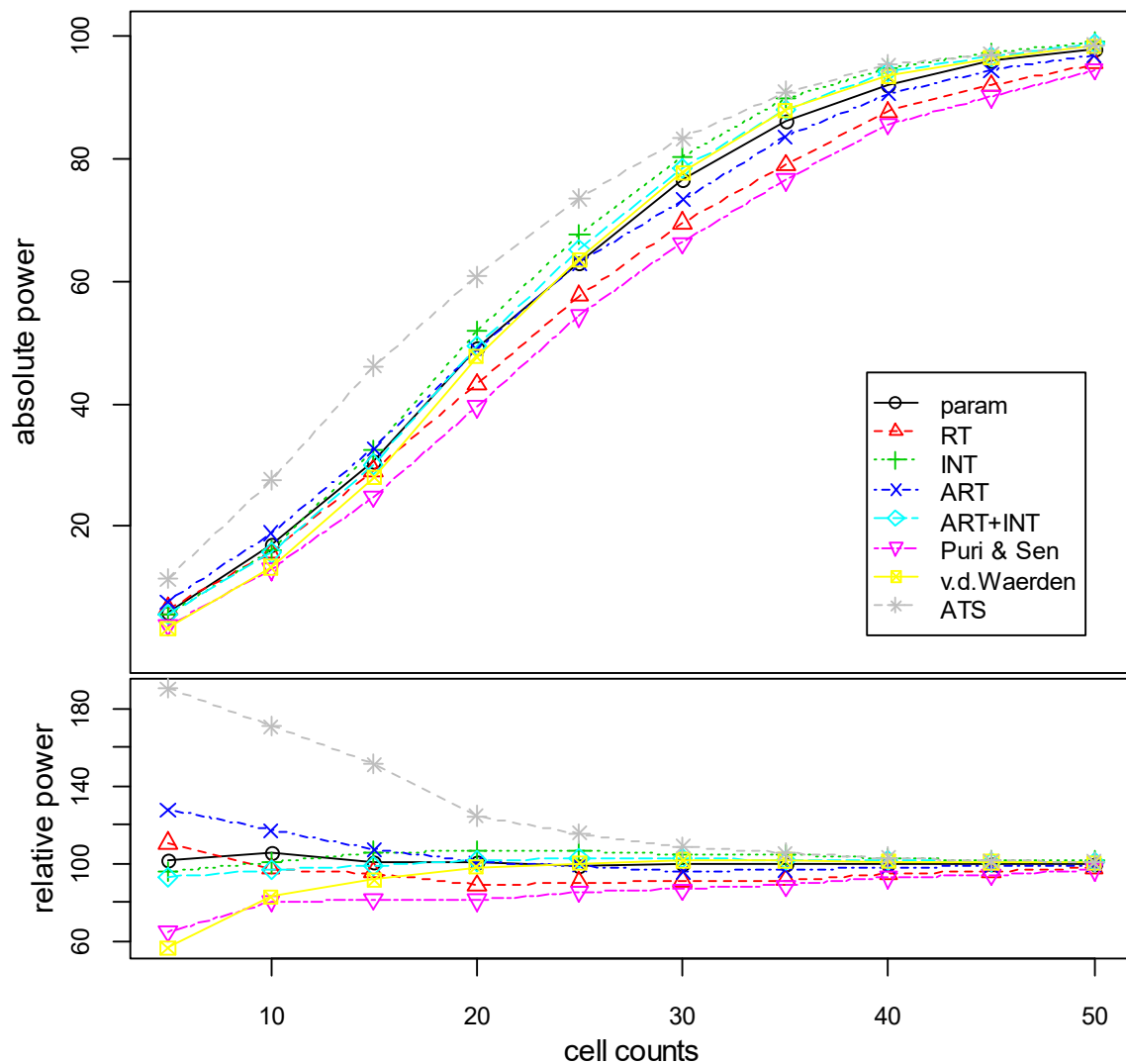
3. 12. 14 normal distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	38.05	50.85	63.50	73.80	83.15	89.40	93.70	96.70	98.15	99.15
RT	26.40	43.20	57.75	69.35	81.25	88.90	94.25	96.75	98.25	99.30
INT	32.50	47.85	61.65	72.20	82.60	89.40	94.70	97.00	98.15	99.15
ART	27.55	42.60	56.40	67.75	79.55	87.10	92.90	95.65	97.80	98.70
ART+INT	33.35	47.45	61.20	71.35	82.30	88.95	94.40	96.50	98.05	99.15
Puri & Sen	20.40	38.75	52.95	65.70	78.35	86.80	92.75	95.85	97.85	98.80
v.d.Waerden	25.80	43.10	57.05	68.40	80.35	88.00	93.45	96.20	97.85	98.95
ATS	7.80	12.15	20.65	28.75	38.80	49.80	61.55	70.55	77.65	85.55



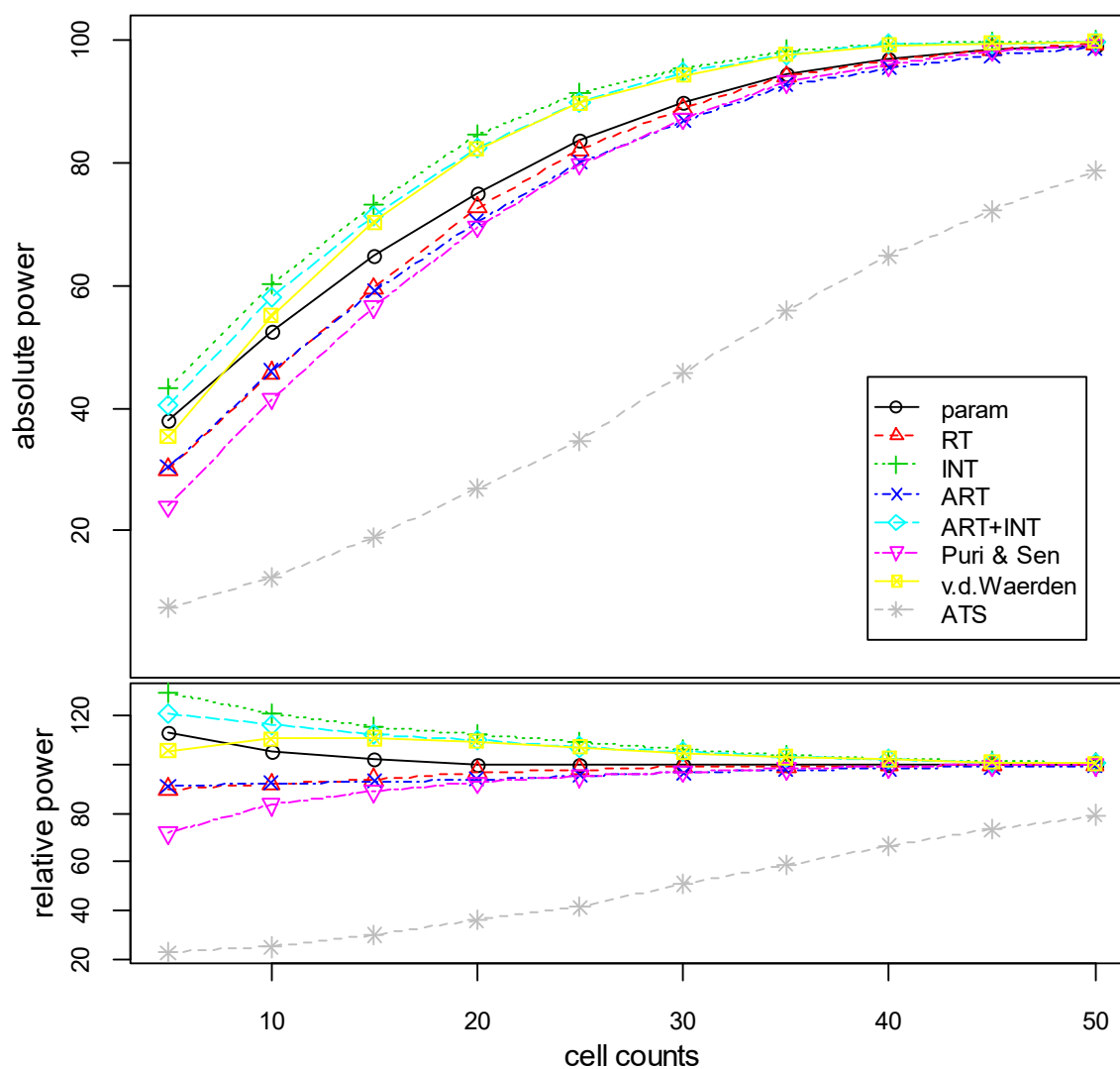
3. 12. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	6.10	17.10	30.60	49.05	63.05	76.45	86.20	91.85	95.75	97.75
RT	6.65	15.70	29.05	43.10	57.50	69.50	78.85	87.50	91.80	95.40
INT	5.75	16.20	32.35	51.95	67.50	80.10	89.85	94.65	97.00	98.90
ART	7.70	18.90	32.70	48.90	62.95	73.20	83.55	90.45	94.30	96.75
ART+INT	5.60	15.70	30.15	49.30	65.20	78.45	88.00	94.15	96.50	98.55
Puri & Sen	3.90	13.00	24.90	39.55	54.35	66.20	76.50	85.55	90.05	94.45
v.d.Waerden	3.40	13.35	27.95	47.70	63.50	77.70	87.80	93.35	96.30	98.25
ATS	11.45	27.60	46.15	60.65	73.45	83.15	90.80	95.20	96.90	98.40



3. 12. 16 left skewed distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	37.90	52.50	64.95	74.90	83.60	89.70	94.35	96.75	98.25	99.05
RT	30.05	45.75	59.45	72.65	82.00	88.75	94.00	96.40	98.40	99.15
INT	43.15	60.10	73.20	84.45	91.35	95.15	98.20	99.40	99.55	99.75
ART	30.45	46.00	59.10	70.45	79.95	86.80	92.55	95.35	97.30	98.55
ART+INT	40.35	58.00	71.25	82.35	89.85	94.70	97.55	99.20	99.35	99.70
Puri & Sen	24.05	41.50	56.45	69.45	79.65	87.10	93.05	95.75	98.10	99.10
v.d.Waerden	35.30	55.00	70.30	82.10	89.60	94.15	97.50	99.05	99.35	99.75
ATS	7.60	12.40	18.95	26.90	34.70	45.80	55.80	64.70	72.05	78.60

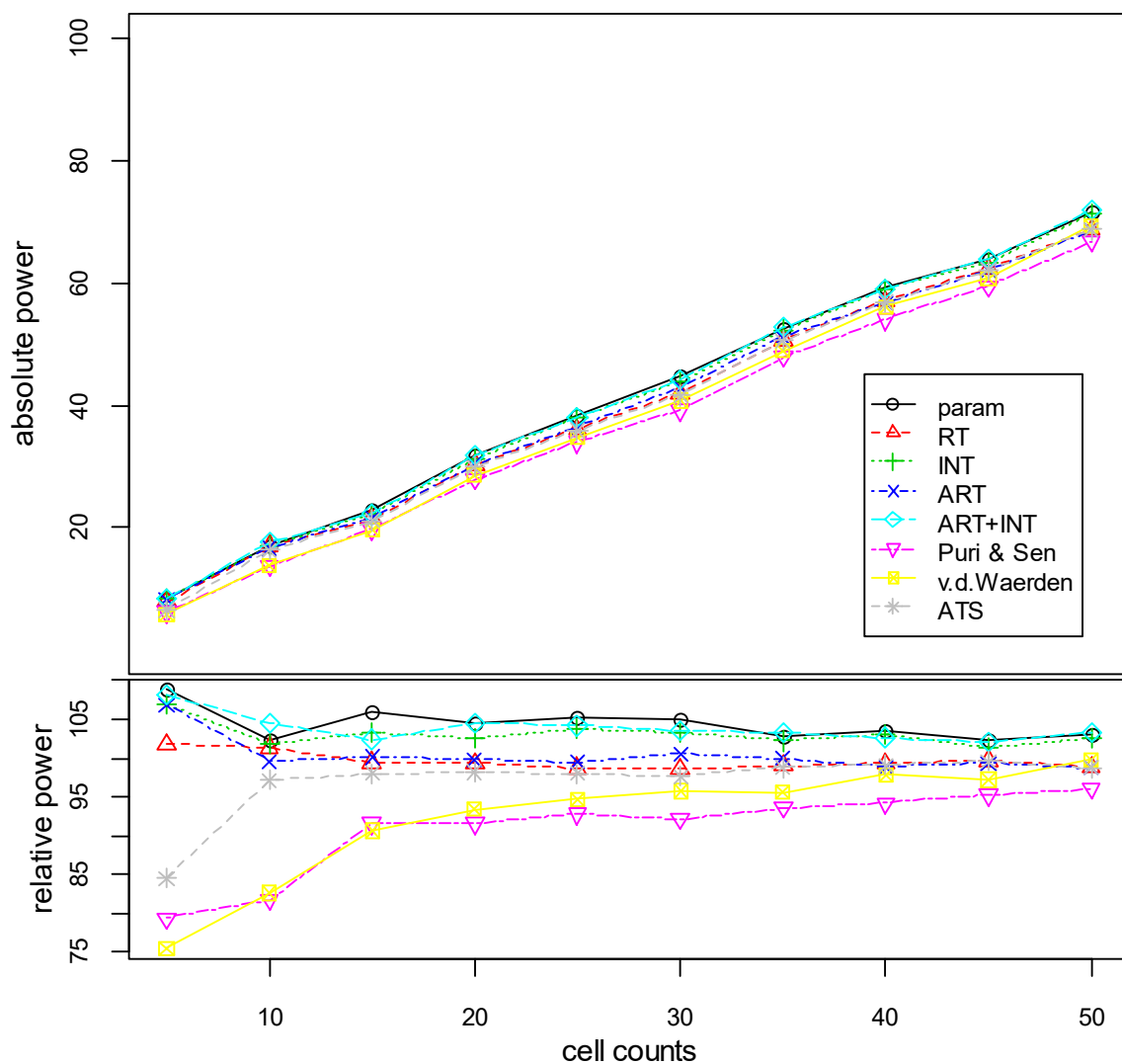


3. 13. Interaction AB - A and B significant

(effects $ab_{ij} = 0.4*s$ $a_i = b_j = 0.3*s$ / equal n_i / # levels = $2*4$)

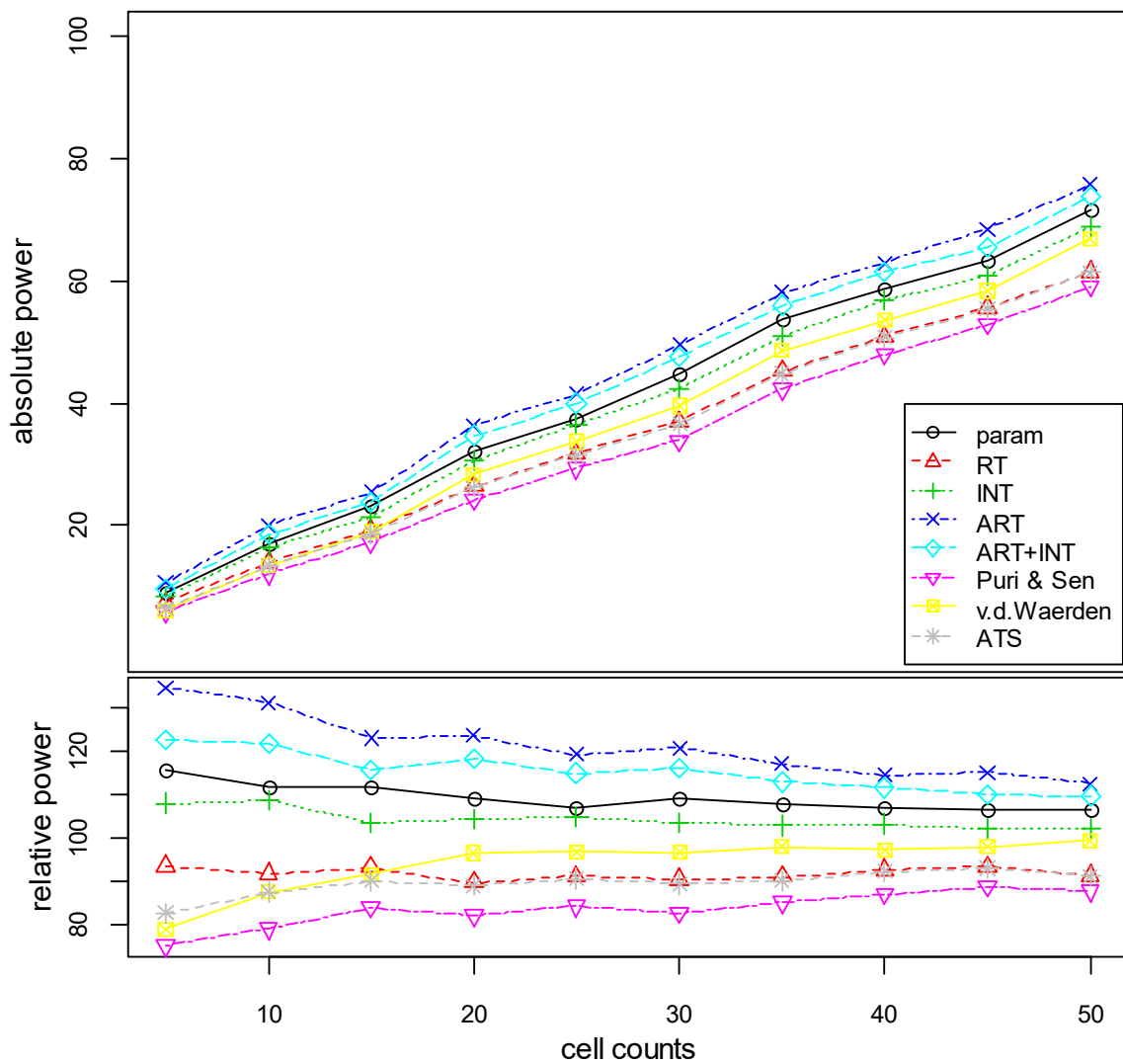
3. 13. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	8.50	17.20	22.90	31.90	38.45	44.70	52.55	59.40	63.80	71.70
RT	7.95	17.05	21.50	30.30	36.10	41.95	50.65	56.95	62.20	68.70
INT	8.35	17.15	22.35	31.30	37.95	43.95	52.30	59.05	63.25	71.30
ART	8.35	16.75	21.65	30.45	36.40	42.80	51.15	56.65	62.00	68.60
ART+INT	8.45	17.60	22.15	31.90	38.10	44.10	52.85	58.85	63.75	71.80
Puri & Sen	6.20	13.75	19.80	27.95	33.95	39.25	47.90	54.00	59.45	66.75
v.d.Waerden	5.90	13.90	19.60	28.50	34.65	40.75	48.90	56.10	60.65	69.35
ATS	6.60	16.35	21.20	29.95	35.85	41.55	50.55	56.80	62.15	68.65



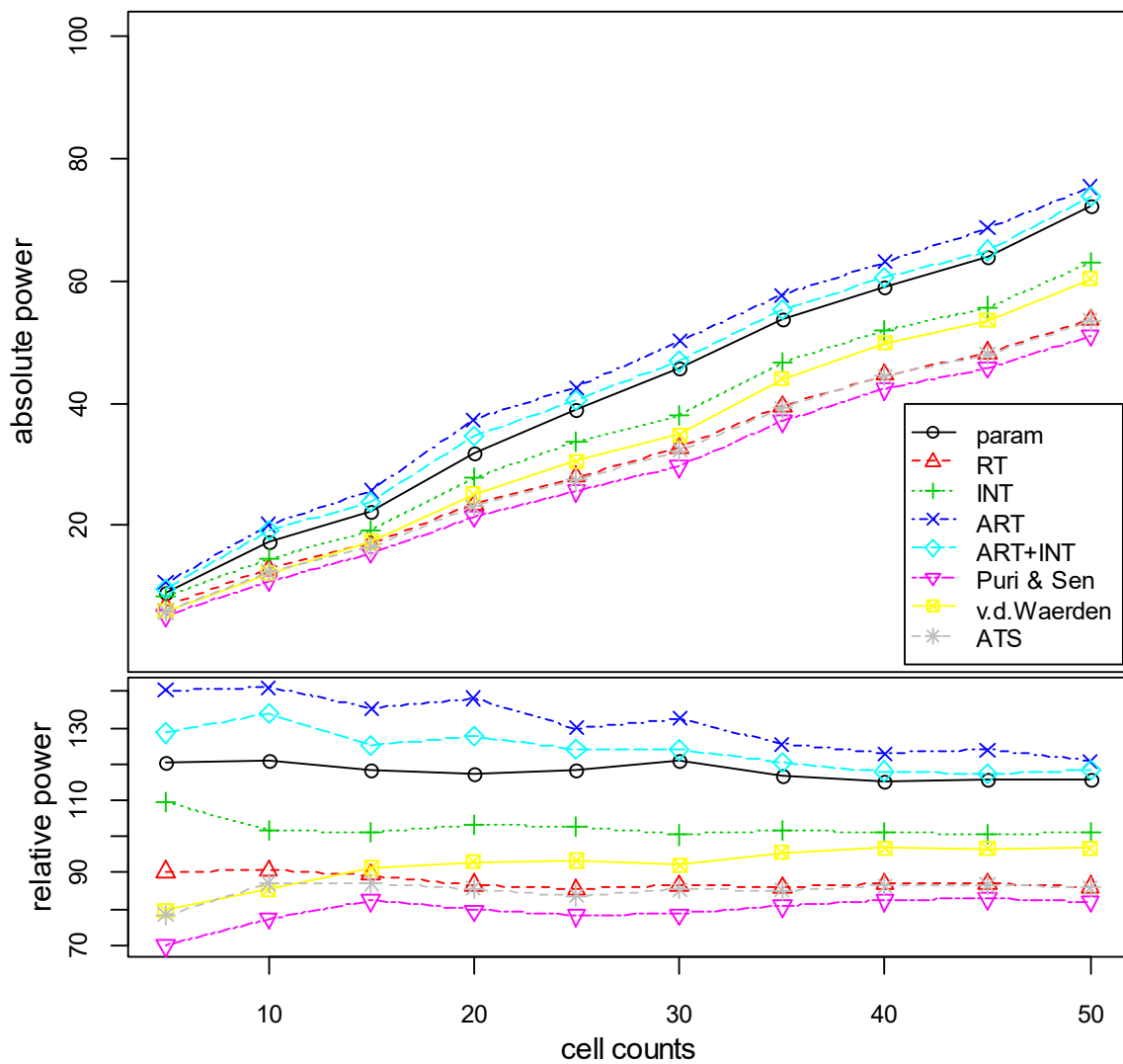
3. 13. 2 normal distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	9.15	17.10	23.10	32.15	37.25	44.75	53.60	58.70	63.30	71.70
RT	7.40	14.05	19.30	26.40	31.75	37.05	45.20	50.90	55.55	61.50
INT	8.55	16.60	21.40	30.70	36.45	42.40	51.05	56.75	60.75	68.80
ART	10.65	20.05	25.45	36.35	41.50	49.45	58.10	62.90	68.45	75.65
ART+INT	9.70	18.60	23.95	34.75	40.00	47.55	56.00	61.30	65.45	73.80
Puri & Sen	5.95	12.10	17.40	24.20	29.35	33.90	42.30	47.90	52.85	59.10
v.d.Waerden	6.25	13.40	18.95	28.40	33.70	39.55	48.60	53.45	58.30	66.90
ATS	6.55	13.40	18.65	26.20	31.55	36.60	44.75	50.75	55.35	61.30



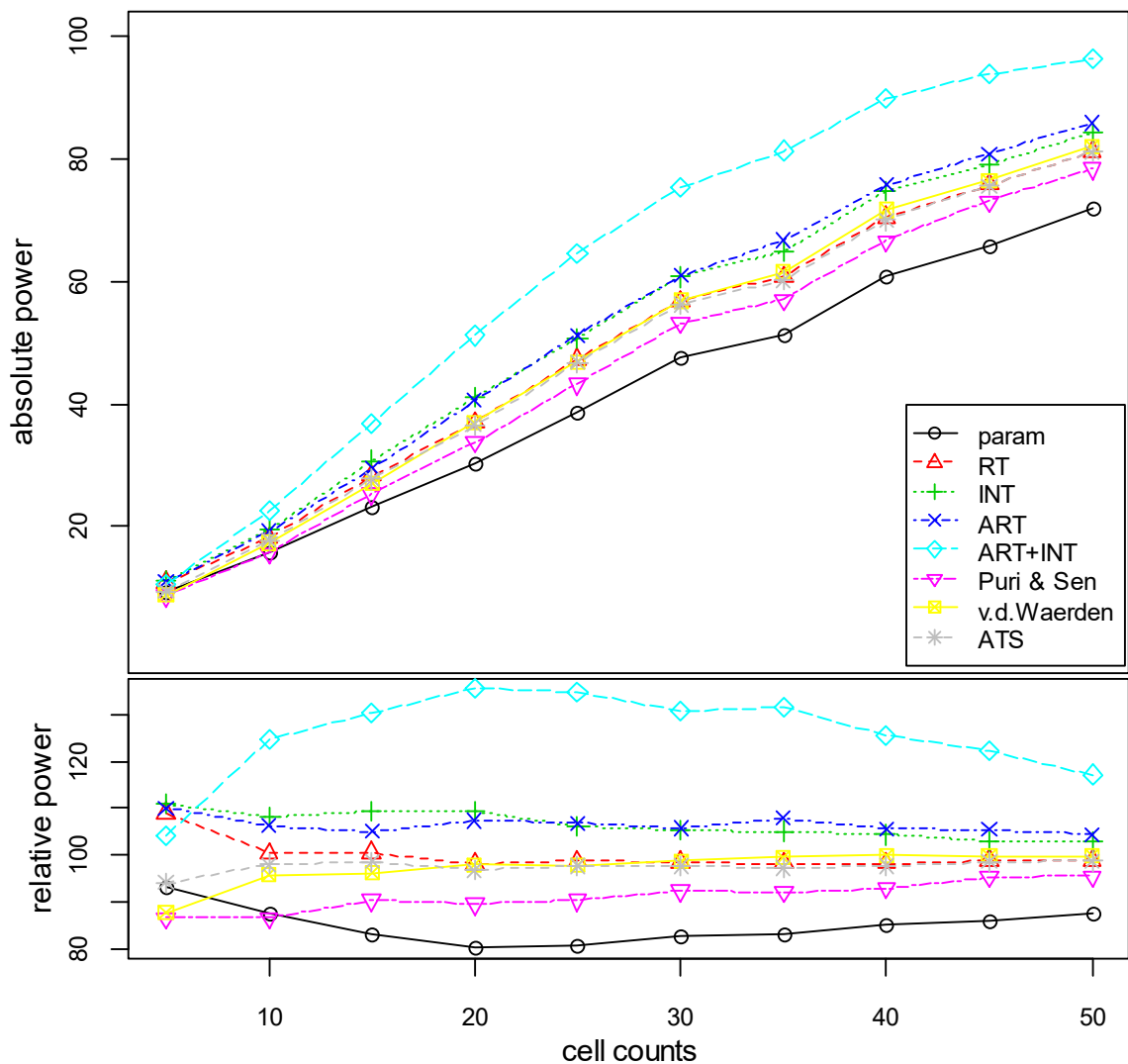
3. 13. 3 normal distribution - unequal variances (on A and B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	9.15	17.25	22.45	31.70	38.80	45.70	53.6	59.10	63.95	72.10
RT	6.85	12.95	17.00	23.40	27.95	32.70	39.4	44.60	48.15	53.60
INT	8.30	14.50	19.20	27.85	33.60	37.95	46.6	51.85	55.70	63.05
ART	10.65	20.15	25.70	37.30	42.55	50.10	57.6	63.05	68.55	75.25
ART+INT	9.75	19.15	23.80	34.50	40.55	46.80	55.25	60.60	64.95	73.80
Puri & Sen	5.30	11.05	15.65	21.50	25.60	29.70	37.10	42.30	45.85	51.05
v.d.Waerden	6.05	12.20	17.35	25.10	30.55	34.80	43.90	49.75	53.50	60.25
ATS	5.95	12.45	16.55	23.15	27.40	32.30	39.10	44.40	47.90	53.55



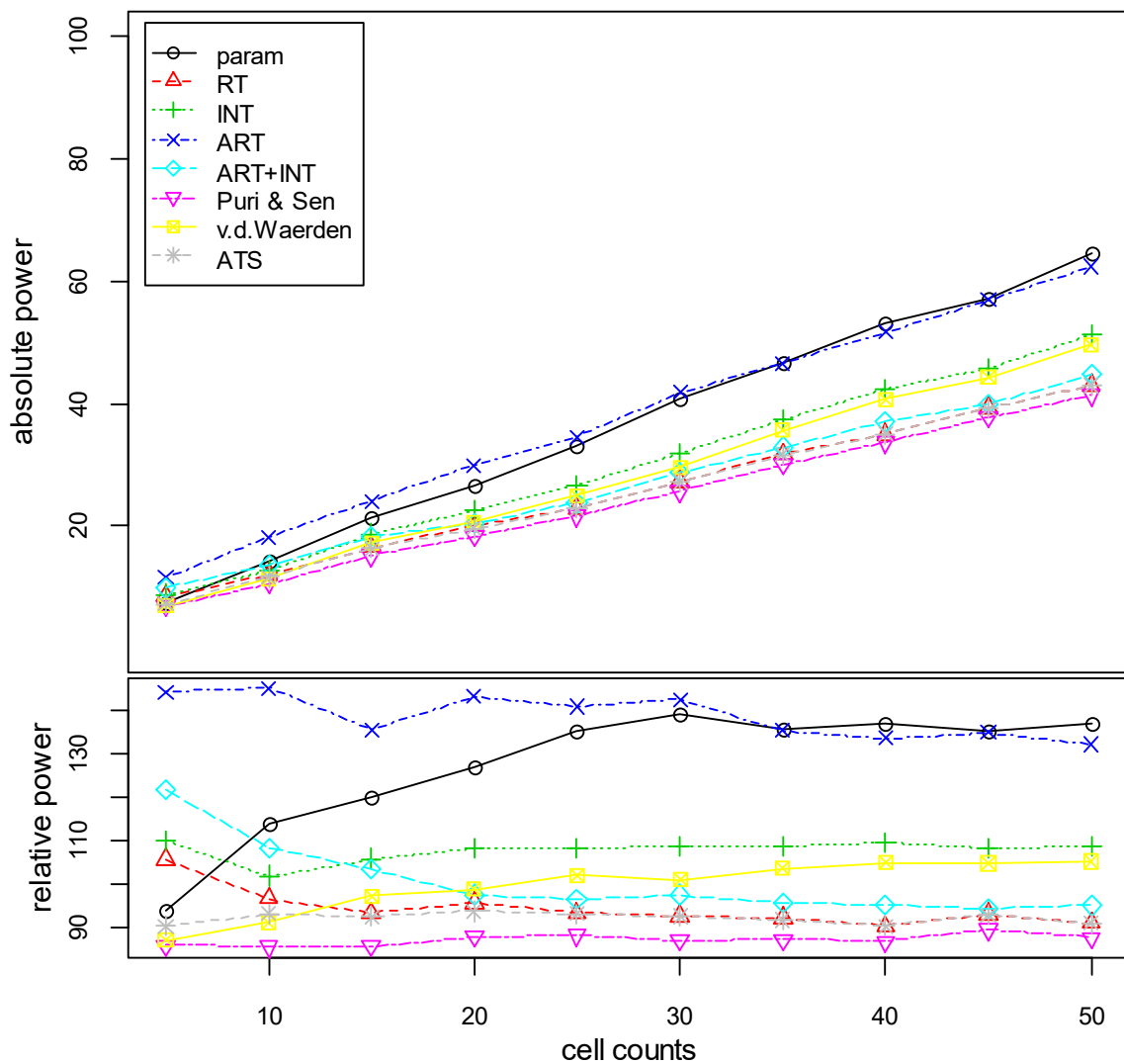
3. 13. 4 right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	9.35	15.85	23.35	30.25	38.65	47.70	51.35	60.90	65.70	71.95
RT	10.95	18.20	28.25	37.00	47.25	56.65	60.70	70.35	75.70	81.20
INT	11.15	19.60	30.75	41.20	50.70	60.65	64.95	74.70	78.85	84.30
ART	11.05	19.25	29.50	40.50	51.10	60.85	66.65	75.65	80.75	85.75
ART+INT	10.45	22.60	36.65	51.10	64.50	75.25	81.25	89.85	93.70	96.20
Puri & Sen	8.70	15.70	25.40	33.80	43.25	53.20	56.95	66.55	73.00	78.35
v.d.Waerden	8.80	17.35	27.00	36.95	46.80	56.80	61.50	71.60	76.35	81.95
ATS	9.45	17.75	27.70	36.50	46.70	56.20	60.10	69.90	75.50	81.00



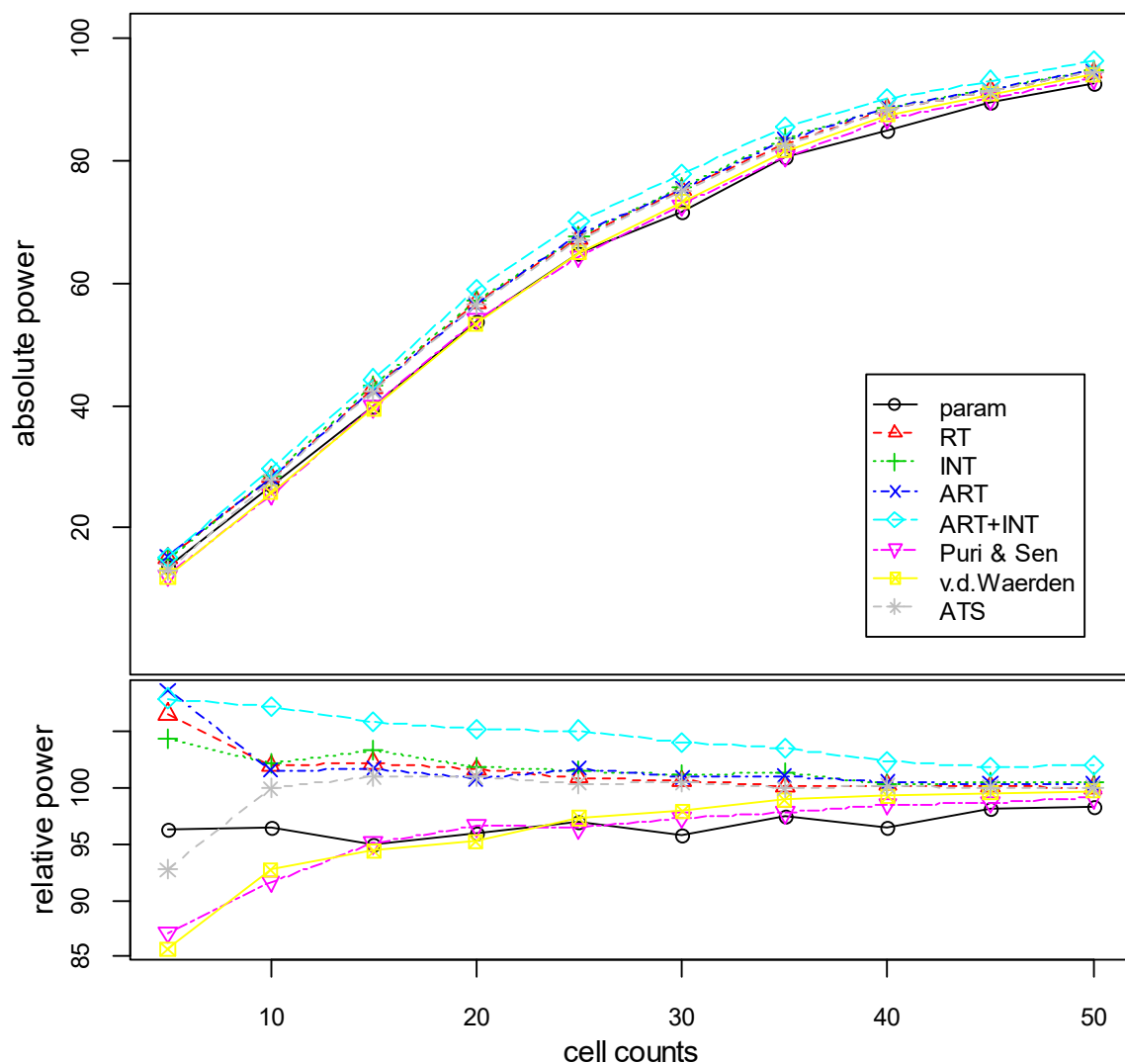
3. 13. 6 exponential distribution - discrete

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	7.60	14.30	21.25	26.55	33.10	40.75	46.70	53.00	56.95	64.55
RT	8.55	12.15	16.55	20.00	22.90	27.20	31.75	35.00	39.25	43.00
INT	8.90	12.80	18.75	22.60	26.50	31.95	37.45	42.40	45.60	51.35
ART	11.65	18.20	24.00	29.90	34.50	41.80	46.55	51.70	56.85	62.35
ART+INT	9.85	13.60	18.35	20.40	23.70	28.65	32.90	36.95	39.75	44.85
Puri & Sen	6.95	10.75	15.20	18.40	21.65	25.60	30.05	33.65	37.75	41.40
v.d.Waerden	7.05	11.45	17.25	20.65	25.00	29.65	35.65	40.65	44.20	49.65
ATS	7.30	11.70	16.40	19.60	22.85	27.20	31.60	35.00	39.20	42.95



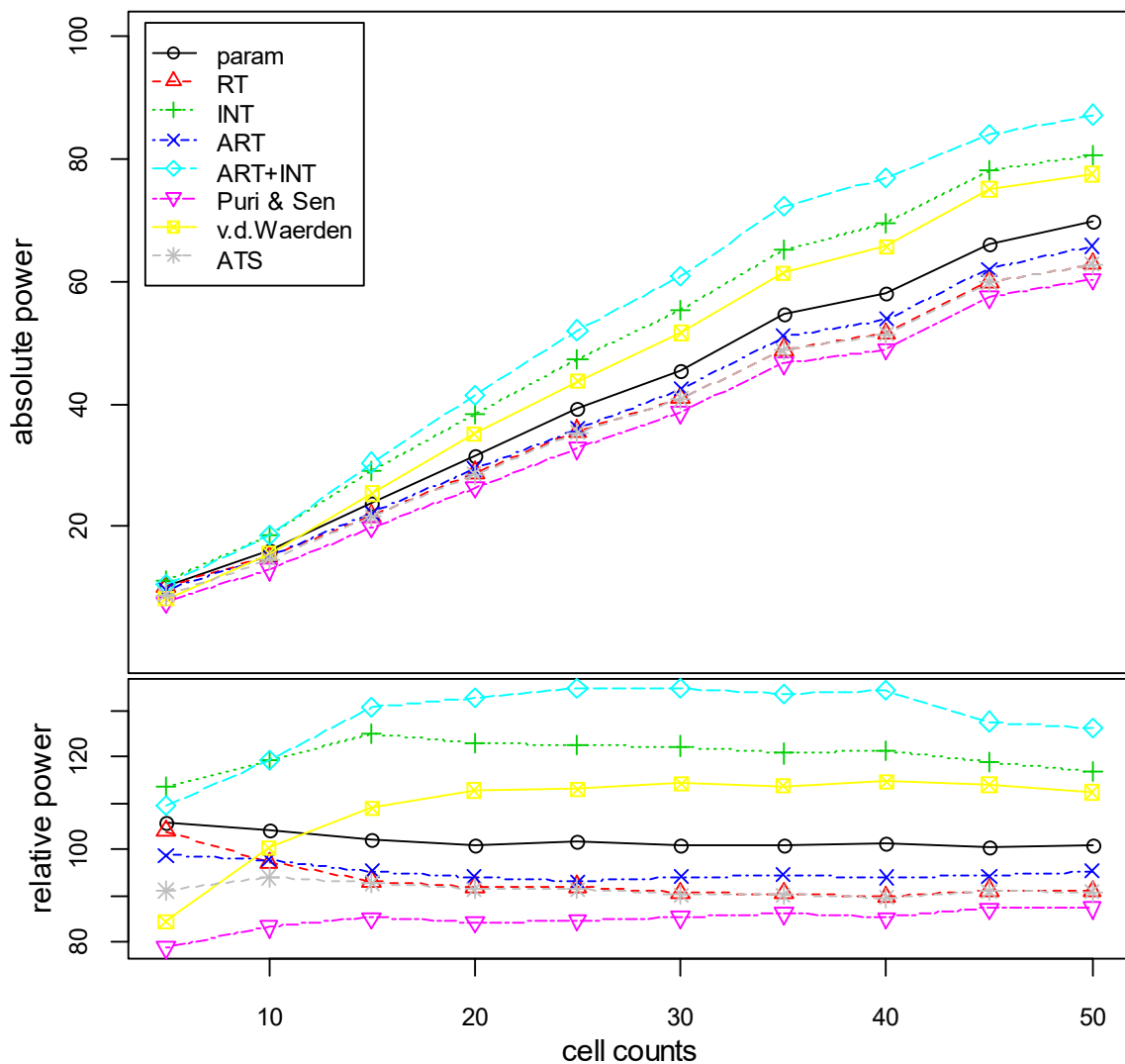
3. 13. 7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	13.65	26.80	39.75	53.65	64.70	71.50	80.35	84.95	89.55	92.60
RT	15.10	28.30	42.75	56.85	67.30	75.15	82.55	88.25	91.30	94.25
INT	14.80	28.35	43.25	57.00	67.65	75.55	83.60	88.40	91.70	94.75
ART	15.40	28.20	42.55	56.40	67.85	75.40	83.30	88.50	91.55	94.55
ART+INT	15.30	29.75	44.30	58.85	70.10	77.70	85.40	90.05	92.95	96.15
Puri & Sen	12.35	25.45	39.80	54.05	64.30	72.70	80.65	86.75	90.05	93.45
v.d.Waerden	12.15	25.75	39.50	53.30	64.90	73.15	81.55	87.40	90.80	93.95
ATS	13.15	27.75	42.25	56.50	66.95	75.00	82.40	88.20	91.25	94.25



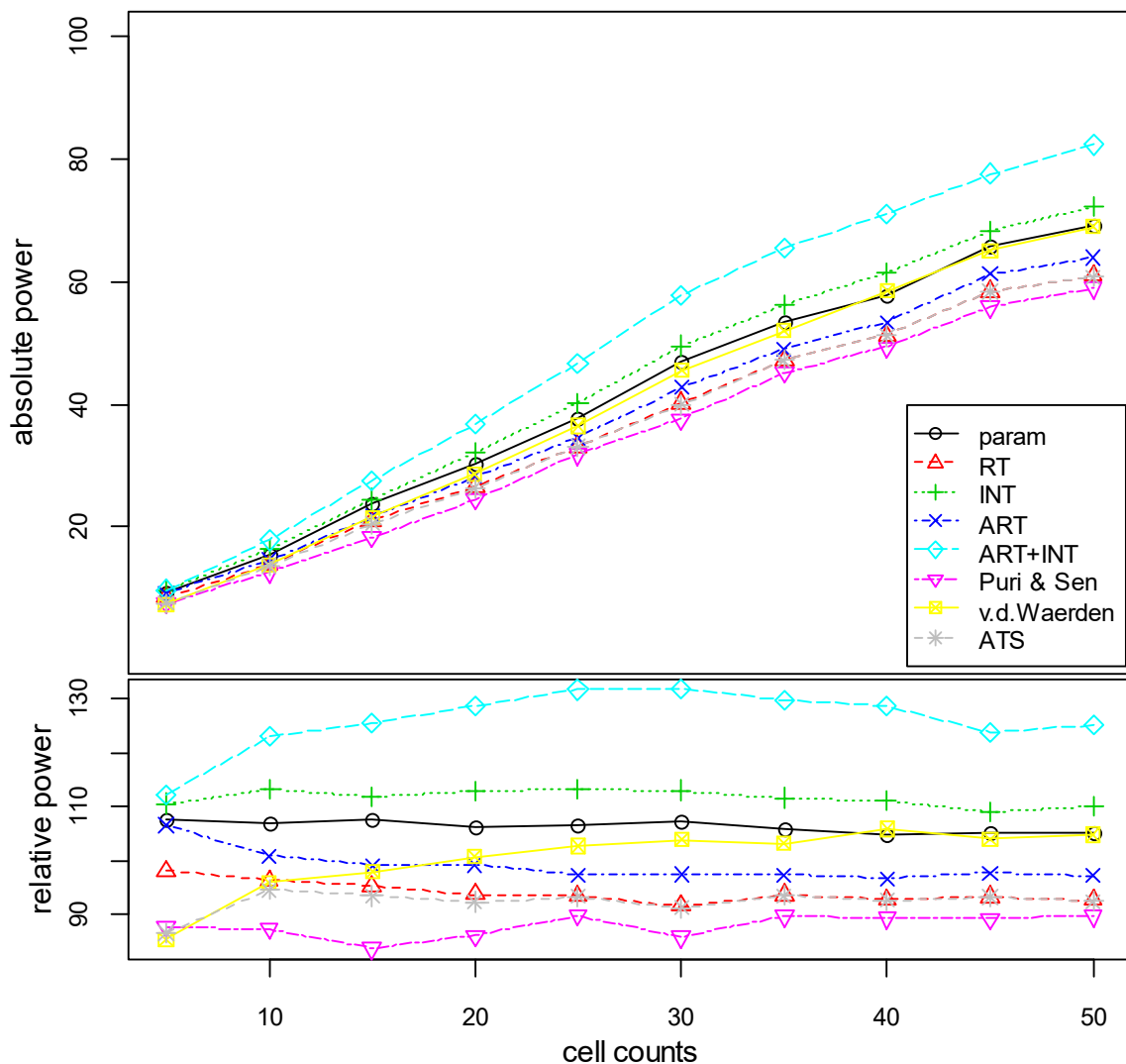
3. 13. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	10.70	16.35	25.10	32.40	40.05	46.25	56.50	58.80	67.55	72.60
RT	10.25	15.25	22.40	29.15	35.30	40.90	49.35	51.45	60.60	64.20
INT	10.95	18.85	29.45	39.05	47.70	54.75	66.20	69.70	77.80	81.45
ART	11.20	16.25	25.50	32.50	40.00	46.15	55.75	58.40	67.95	71.40
ART+INT	12.00	20.30	34.95	47.10	57.70	66.65	77.25	81.05	86.80	90.30
Puri & Sen	8.15	12.95	20.75	27.15	33.05	37.80	46.80	49.25	57.85	61.75
v.d.Waerden	8.45	15.35	25.80	35.35	43.80	52.20	62.75	66.30	75.15	79.05
ATS	9.10	14.80	22.10	28.95	35.20	40.75	49.20	51.45	60.60	64.15



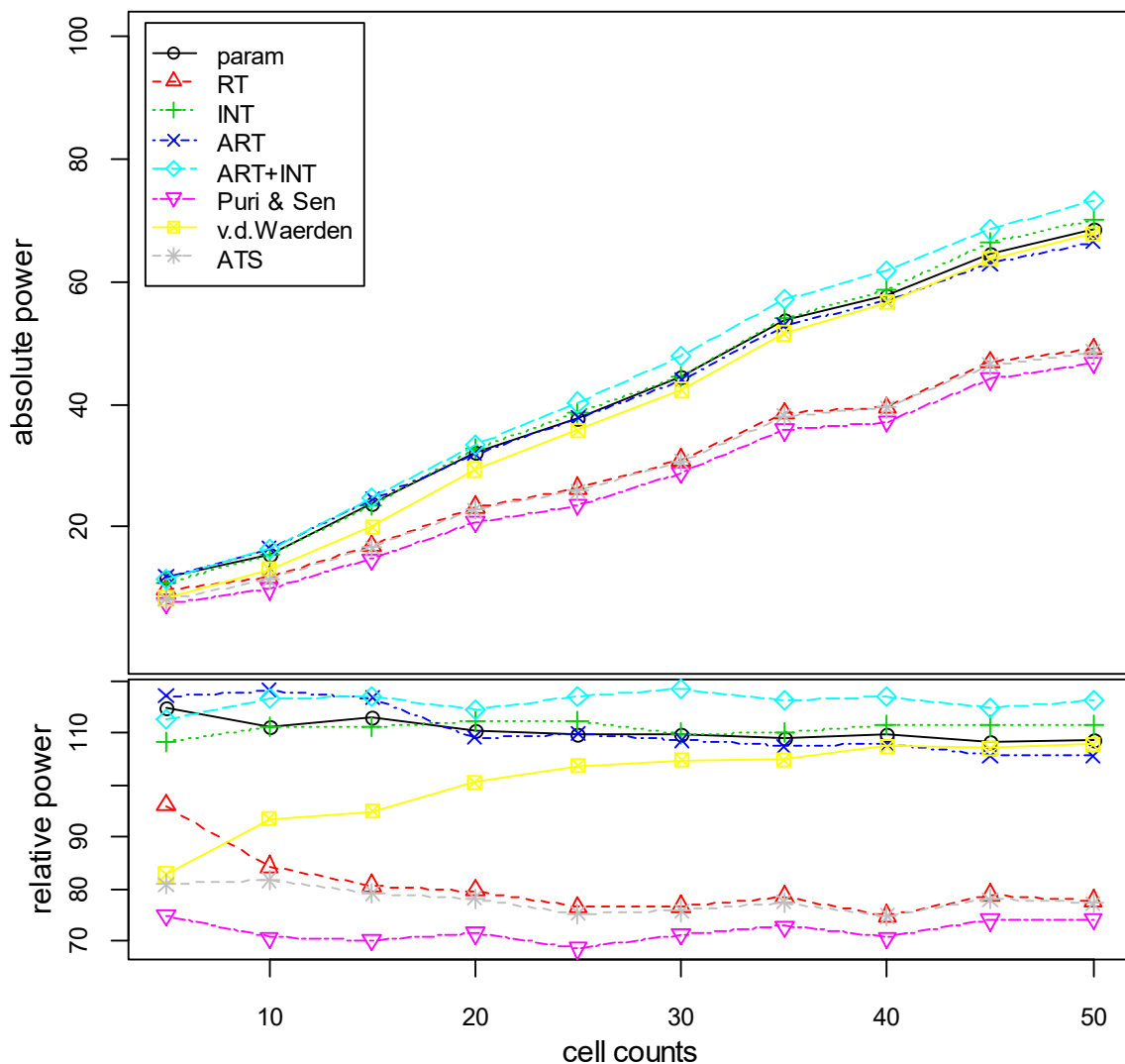
3. 13. 10 left/right skewed distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	9.40	15.50	23.70	30.30	37.80	46.95	53.45	57.75	65.70	69.20
RT	8.55	13.95	20.95	26.70	33.15	40.15	47.20	51.20	58.35	60.90
INT	9.65	16.40	24.60	32.15	40.15	49.55	56.30	61.40	68.15	72.30
ART	9.30	14.60	21.80	28.25	34.55	42.70	49.05	53.35	61.15	63.85
ART+INT	9.80	17.85	27.65	36.70	46.75	57.75	65.50	71.00	77.55	82.20
Puri & Sen	7.65	12.65	18.40	24.50	31.85	37.60	45.20	49.25	55.80	58.95
v.d.Waerden	7.45	13.90	21.55	28.70	36.45	45.50	52.00	58.40	65.05	68.90
ATS	7.55	13.70	20.55	26.30	33.10	39.95	47.15	51.10	58.30	60.75



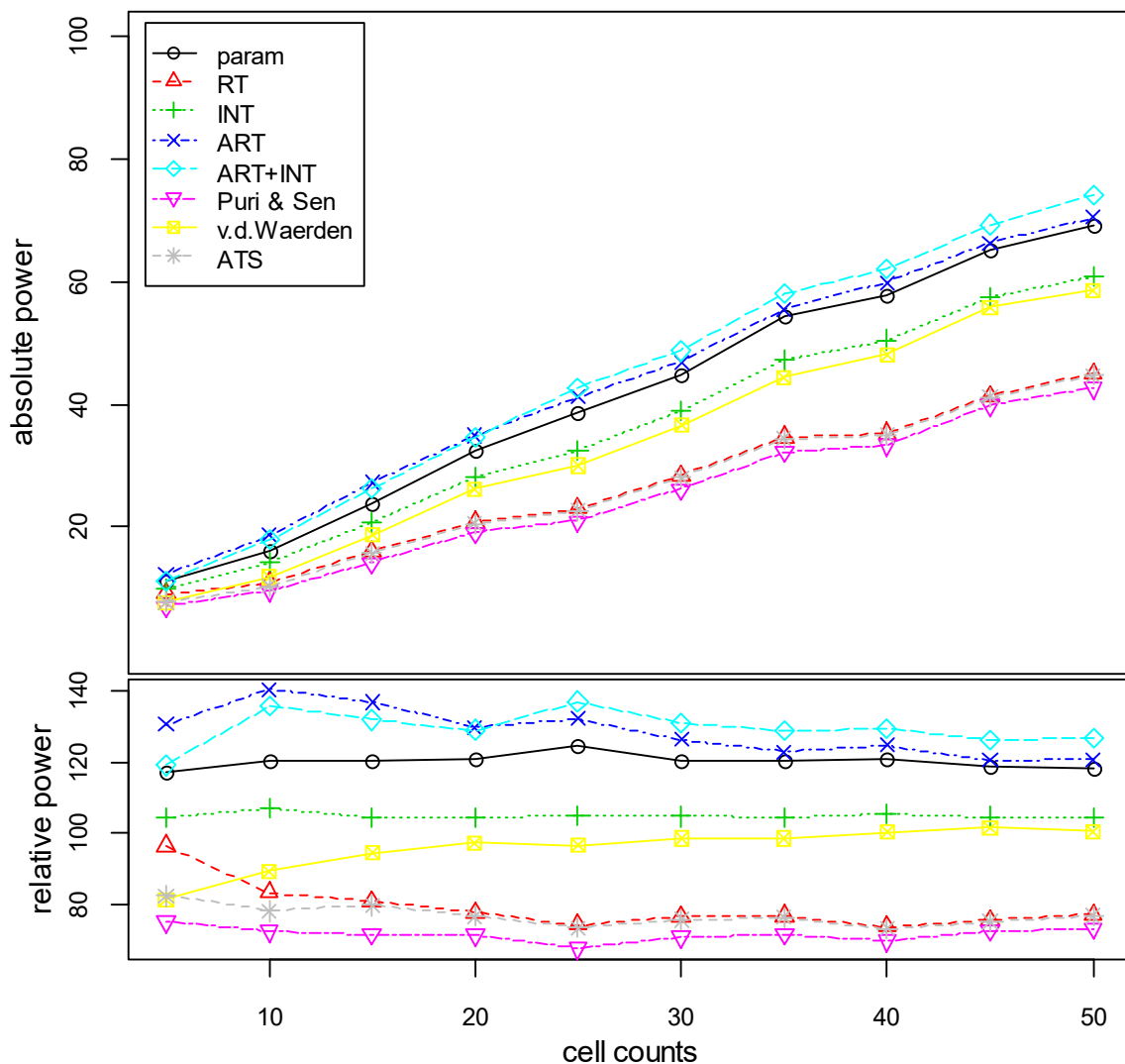
3. 13. 11 left skewed distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	11.70	15.55	23.85	32.30	37.80	44.40	53.65	57.85	64.5	68.40
RT	9.80	11.80	17.00	23.30	26.35	30.95	38.55	39.40	46.9	48.95
INT	11.05	15.55	23.45	32.85	38.65	44.40	54.05	58.75	66.3	70.10
ART	11.95	16.55	24.60	31.90	37.80	43.90	52.80	56.75	62.9	66.40
ART+INT	11.50	16.35	24.65	33.50	40.30	47.80	57.15	61.65	68.35	73.10
Puri & Sen	7.65	9.90	14.80	20.90	23.60	28.80	35.80	37.20	44.10	46.70
v.d.Waerden	8.45	13.10	20.00	29.40	35.70	42.30	51.55	56.55	63.70	67.80
ATS	8.25	11.45	16.70	22.85	25.90	30.60	38.10	39.40	46.40	48.60



3. 13. 12 left skewed distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	11.10	16.00	23.95	32.45	38.75	44.75	54.25	57.85	65.10	69.10
RT	9.15	11.05	16.05	20.80	23.05	28.35	34.60	35.25	41.35	44.95
INT	9.90	14.20	20.70	28.05	32.55	38.85	47.10	50.45	57.45	60.80
ART	12.40	18.65	27.20	34.90	41.15	46.90	55.45	59.75	66.20	70.45
ART+INT	11.30	18.05	26.20	34.70	42.65	48.65	58.10	62.05	69.25	74.05
Puri & Sen	7.10	9.60	14.20	19.10	20.95	26.20	32.20	33.30	39.80	42.65
v.d.Waerden	7.70	11.85	18.75	26.15	30.00	36.55	44.40	48.05	55.80	58.60
ATS	7.80	10.35	15.80	20.55	22.75	28.05	34.35	34.95	41.20	44.70

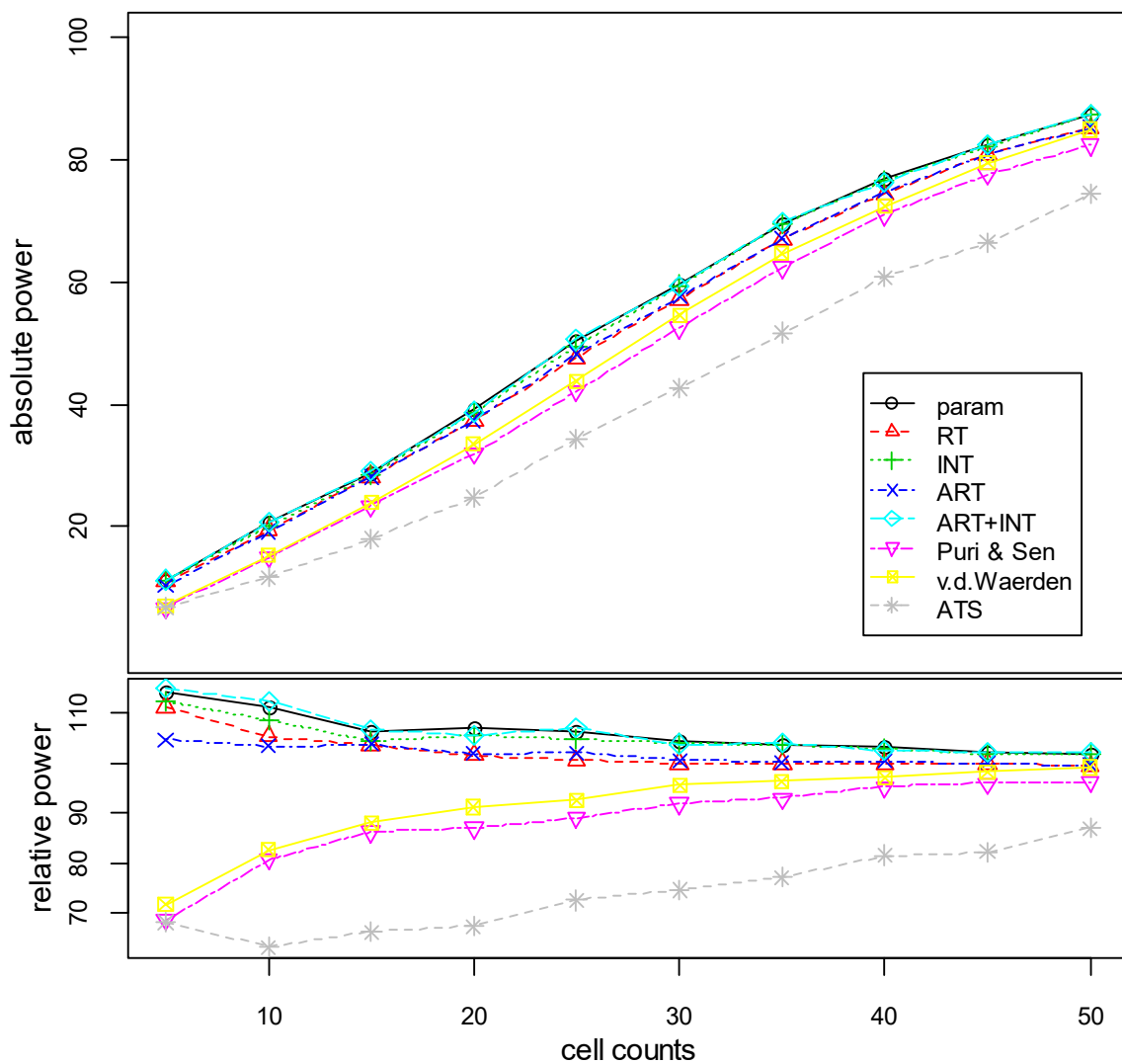


3. 14. Interaction AB - A and B significant

(effects $ab_{ij} = 0.4*s$ $a_i = b_j = 0.3*s$ / unequal n_i / # levels = $4*5$)

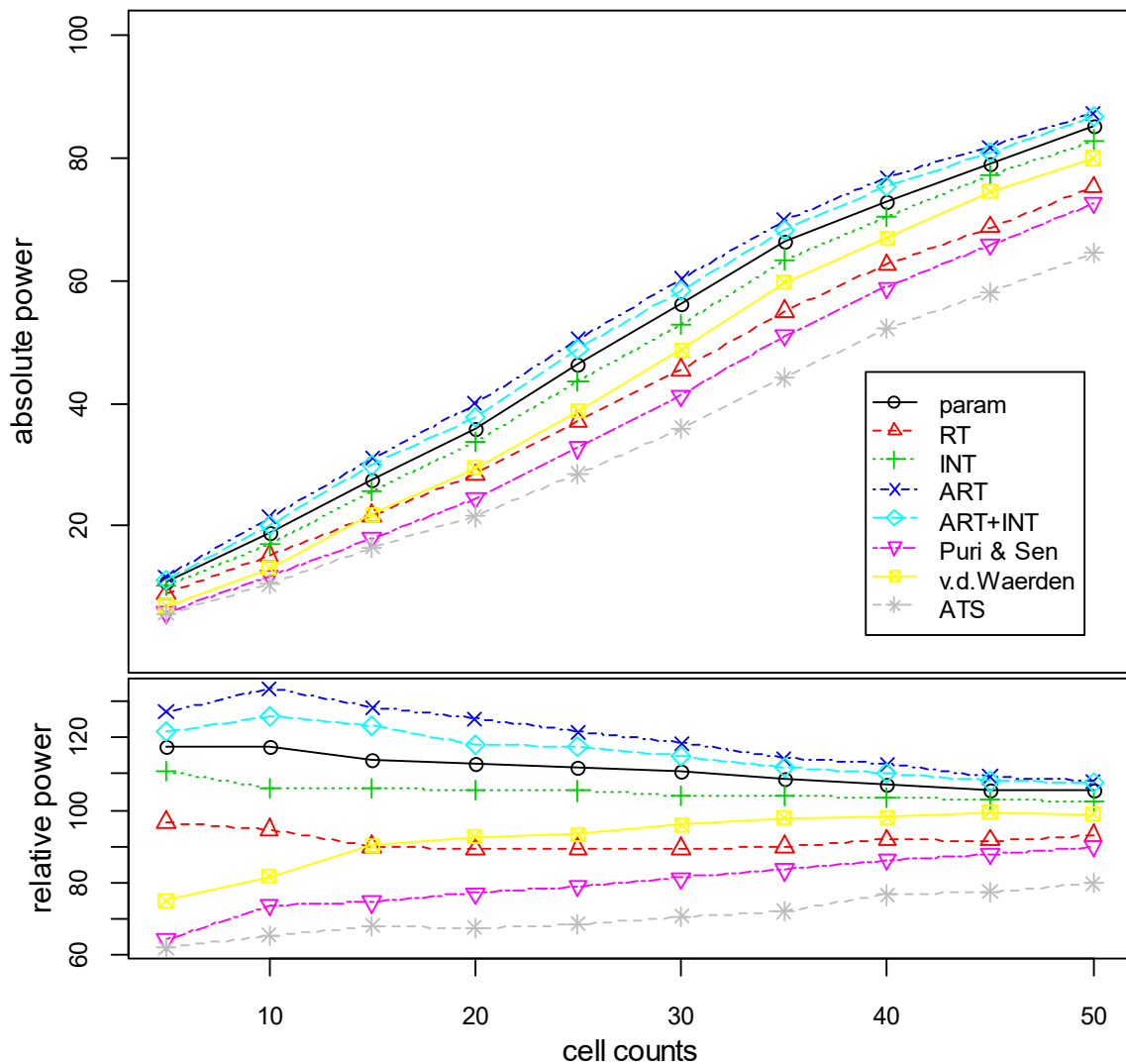
3. 14. 1 normal distribution - equal variances

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	11.30	20.65	28.85	39.35	50.25	59.55	69.35	76.90	82.50	87.15
RT	11.00	19.55	28.15	37.30	47.45	57.10	66.90	74.30	80.70	85.00
INT	11.10	20.15	28.35	38.70	49.55	59.40	69.35	76.60	82.15	87.20
ART	10.35	19.20	28.15	37.40	48.15	57.45	67.00	74.70	80.80	85.25
ART+INT	11.35	20.85	28.95	38.75	50.50	59.30	69.65	76.30	82.45	87.25
Puri & Sen	6.80	15.00	23.40	31.95	42.05	52.50	62.25	70.85	77.50	82.35
v.d.Waerden	7.10	15.35	23.90	33.50	43.75	54.60	64.55	72.25	79.40	84.80
ATS	6.75	11.75	18.00	24.75	34.30	42.65	51.70	60.70	66.45	74.45



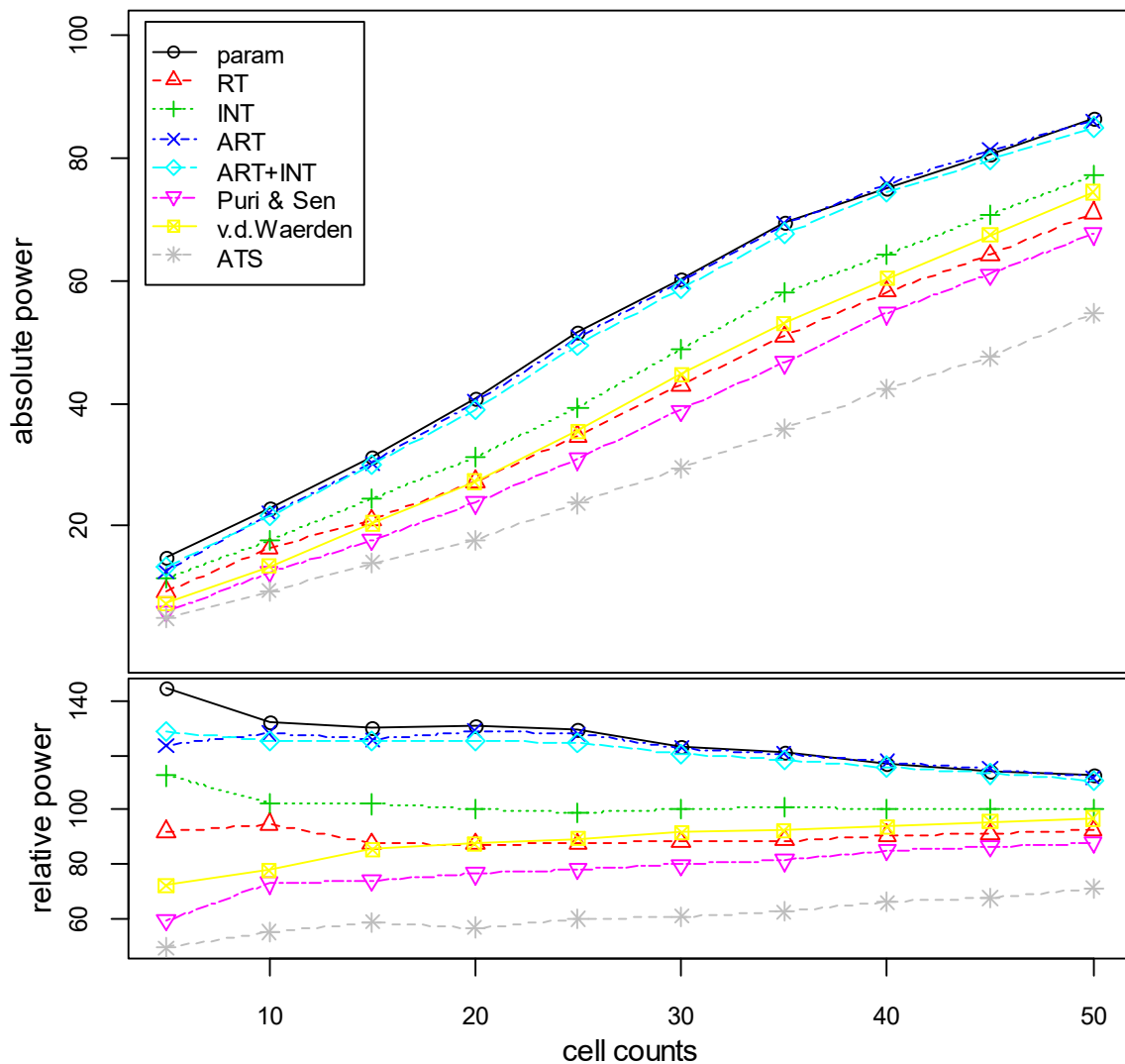
3. 14. 2 normal distribution - unequal variances (on B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	10.85	18.95	27.55	35.95	46.40	56.20	66.20	72.80	79.10	85.00
RT	8.95	15.25	21.75	28.40	37.10	45.45	54.95	62.50	68.60	75.15
INT	10.25	17.10	25.60	33.60	43.65	52.80	63.40	70.40	77.10	82.80
ART	11.75	21.50	31.05	39.90	50.40	60.15	69.80	76.75	81.65	87.20
ART+INT	11.25	20.25	29.85	37.65	48.75	58.45	68.20	75.20	80.70	86.70
Puri & Sen	5.95	11.90	18.05	24.60	32.80	41.30	51.05	58.80	65.80	72.65
v.d.Waerden	6.95	13.15	21.85	29.50	38.70	48.75	59.70	66.85	74.45	79.90
ATS	5.75	10.55	16.50	21.55	28.45	35.90	44.05	52.20	57.95	64.45



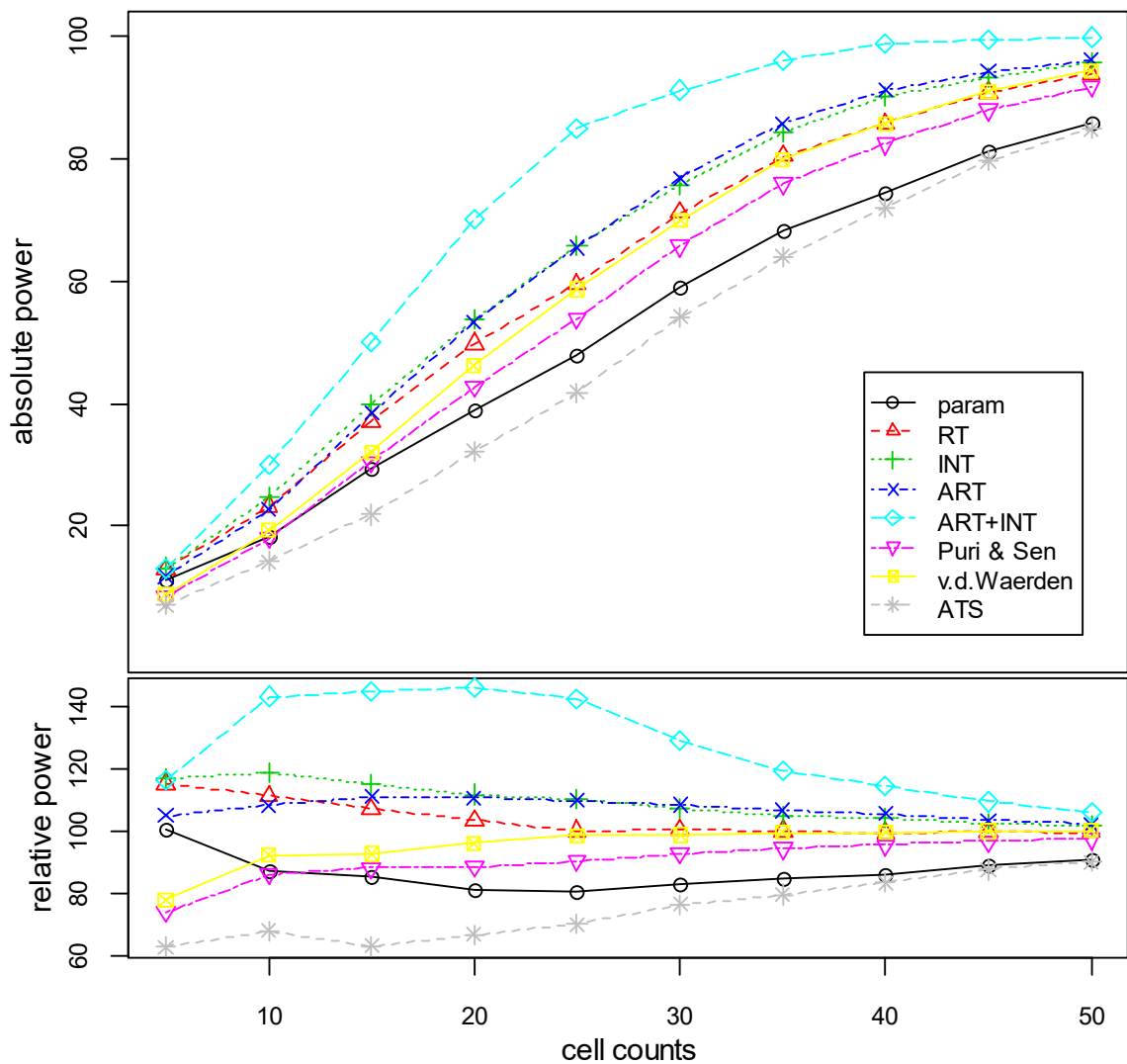
3. 14. 3 normal distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	14.85	22.80	31.20	40.70	51.45	60.10	69.50	74.95	80.35	86.50
RT	9.45	16.30	21.00	27.20	34.70	42.95	50.85	58.15	64.10	70.95
INT	11.55	17.60	24.45	31.20	39.20	48.70	57.90	64.20	70.65	77.15
ART	12.70	22.05	30.20	40.20	50.75	59.80	69.20	75.60	81.15	85.90
ART+INT	13.25	21.60	30.05	39.05	49.35	58.55	67.70	74.45	79.70	84.95
Puri & Sen	6.10	12.55	17.75	23.80	30.95	38.80	46.65	54.60	61.00	67.55
v.d.Waerden	7.40	13.40	20.45	27.25	35.40	44.65	53.00	60.25	67.40	74.35
ATS	5.05	9.45	14.05	17.65	23.70	29.50	35.75	42.30	47.50	54.55



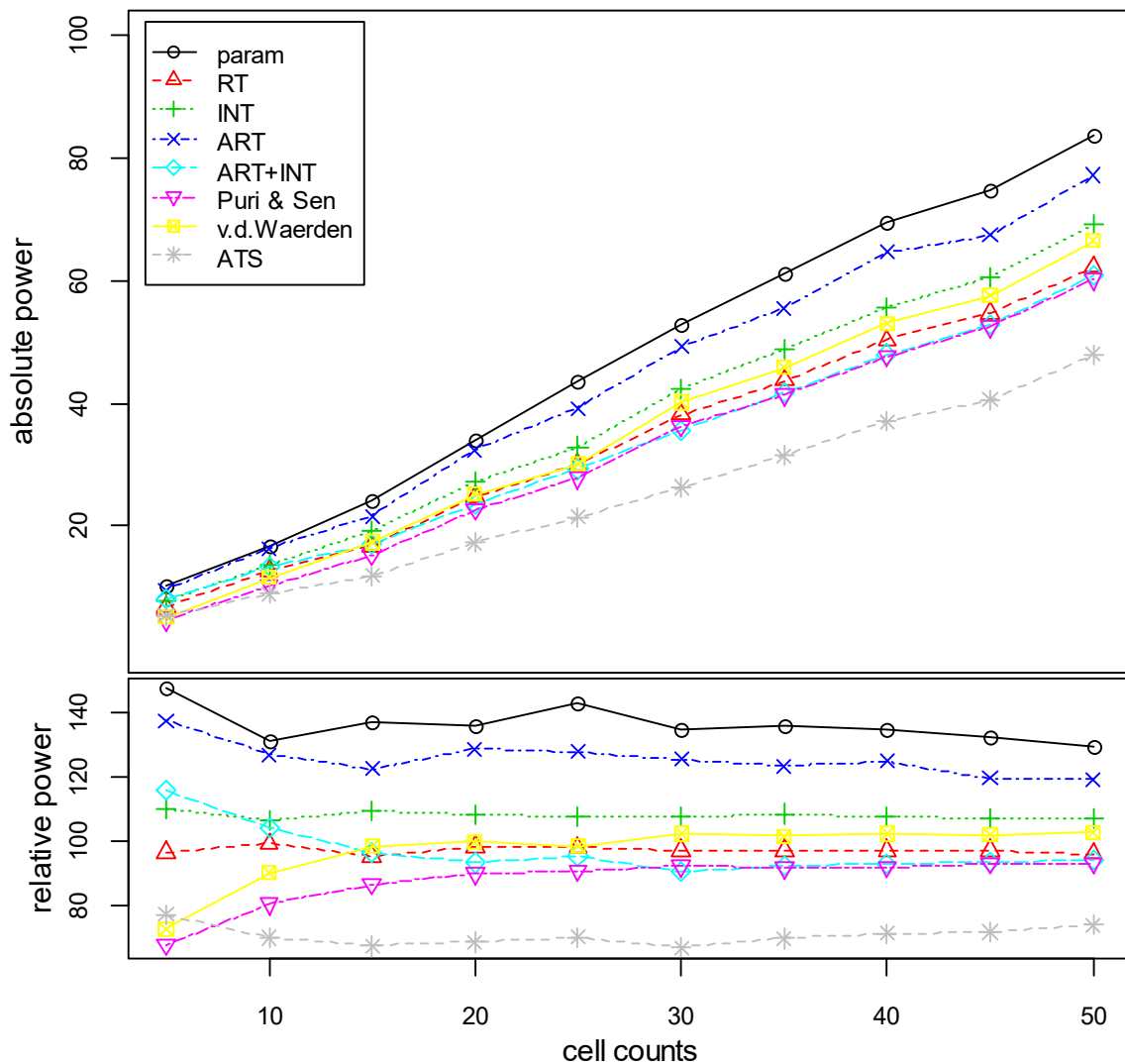
3. 14. 4 right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	11.35	18.25	29.45	39.00	47.85	58.90	68.05	74.25	81.10	85.60
RT	13.00	23.30	37.00	49.75	59.50	71.05	80.30	85.70	90.70	93.65
INT	13.20	24.85	39.70	53.75	65.60	75.70	84.30	89.95	93.20	95.55
ART	11.85	22.70	38.35	53.25	65.40	76.75	85.60	91.05	94.10	96.05
ART+INT	13.10	30.00	50.00	70.10	84.75	91.10	95.90	98.60	99.40	99.75
Puri & Sen	8.35	18.05	30.50	42.70	53.85	65.65	75.80	82.30	87.85	91.70
v.d.Waerden	8.80	19.35	32.05	46.25	58.65	69.85	79.85	85.70	90.85	94.25
ATS	7.10	14.25	21.85	32.20	41.75	54.10	63.95	71.85	79.60	84.75



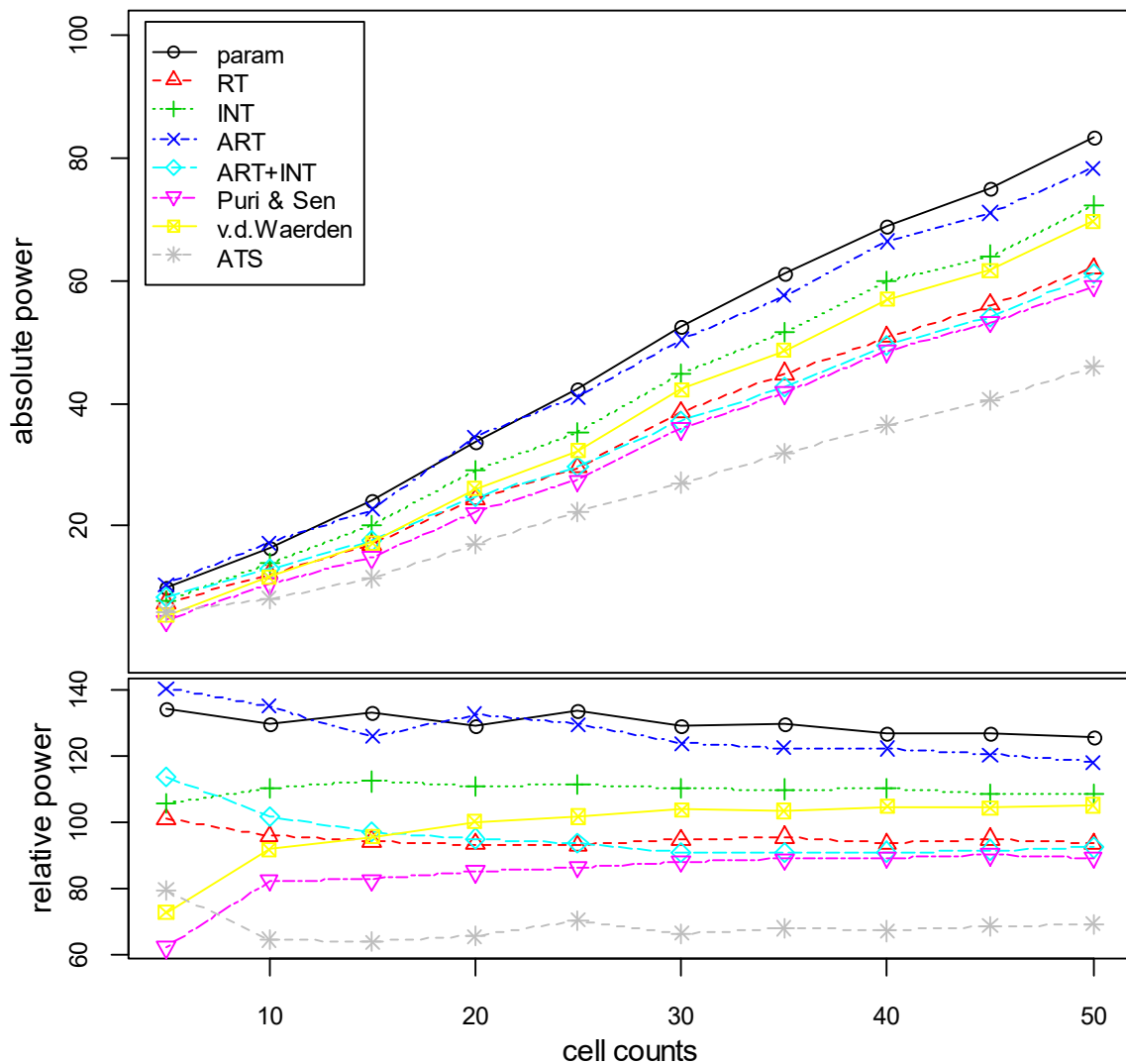
3. 14. 5 exponential distribution - continuous

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	10.30	16.85	24.10	34.15	43.70	52.85	61.15	69.55	74.50	83.55
RT	6.75	12.75	16.80	24.75	30.00	38.15	43.70	50.20	54.70	62.15
INT	7.70	13.65	19.25	27.30	32.90	42.25	48.85	55.65	60.40	69.10
ART	9.60	16.30	21.60	32.40	39.10	49.20	55.50	64.55	67.40	77.10
ART+INT	8.10	13.35	17.05	23.50	29.25	35.60	41.65	48.00	52.75	60.80
Puri & Sen	4.75	10.35	15.30	22.70	27.80	36.25	41.35	47.65	52.50	60.20
v.d.Waerden	5.10	11.60	17.35	25.15	30.15	40.15	45.75	52.95	57.45	66.40
ATS	5.40	9.00	11.90	17.30	21.50	26.30	31.45	37.00	40.50	47.90



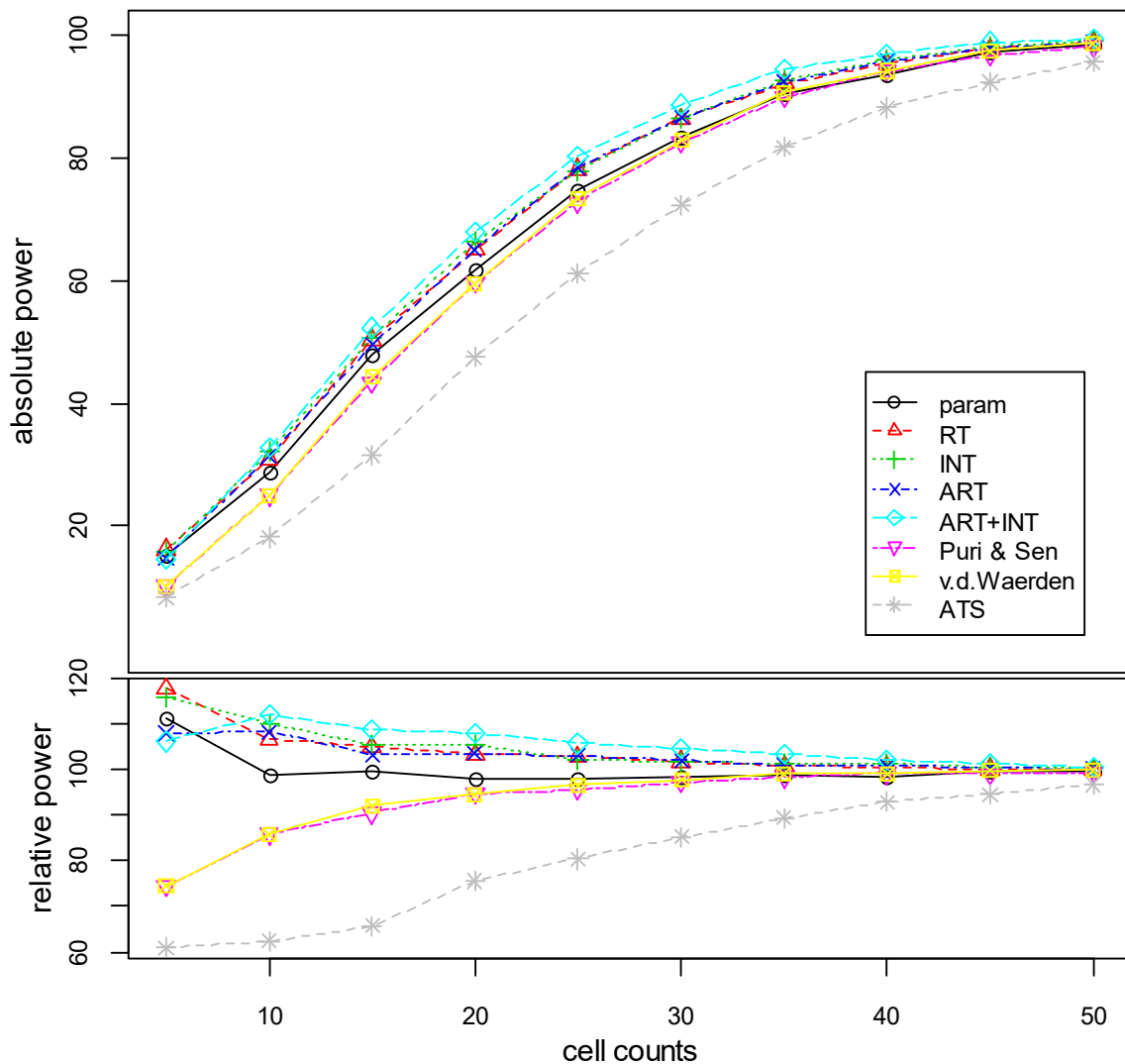
3. 14. 6 exponential distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	10.05	16.60	24.05	33.60	42.35	52.55	60.95	68.70	74.90	83.15
RT	7.55	12.25	17.00	24.35	29.50	38.55	44.85	50.75	56.00	61.90
INT	7.90	14.10	20.25	28.95	35.30	44.85	51.60	59.80	64.00	72.05
ART	10.50	17.25	22.70	34.55	41.05	50.35	57.50	66.35	70.95	78.20
ART+INT	8.50	13.00	17.55	24.80	29.65	36.95	42.55	49.45	54.05	61.15
Puri & Sen	4.65	10.55	14.90	22.20	27.40	35.85	41.70	48.45	53.20	59.10
v.d.Waerden	5.45	11.75	17.25	26.10	32.25	42.20	48.55	56.85	61.60	69.65
ATS	5.95	8.25	11.50	17.10	22.30	27.05	31.90	36.45	40.55	45.90



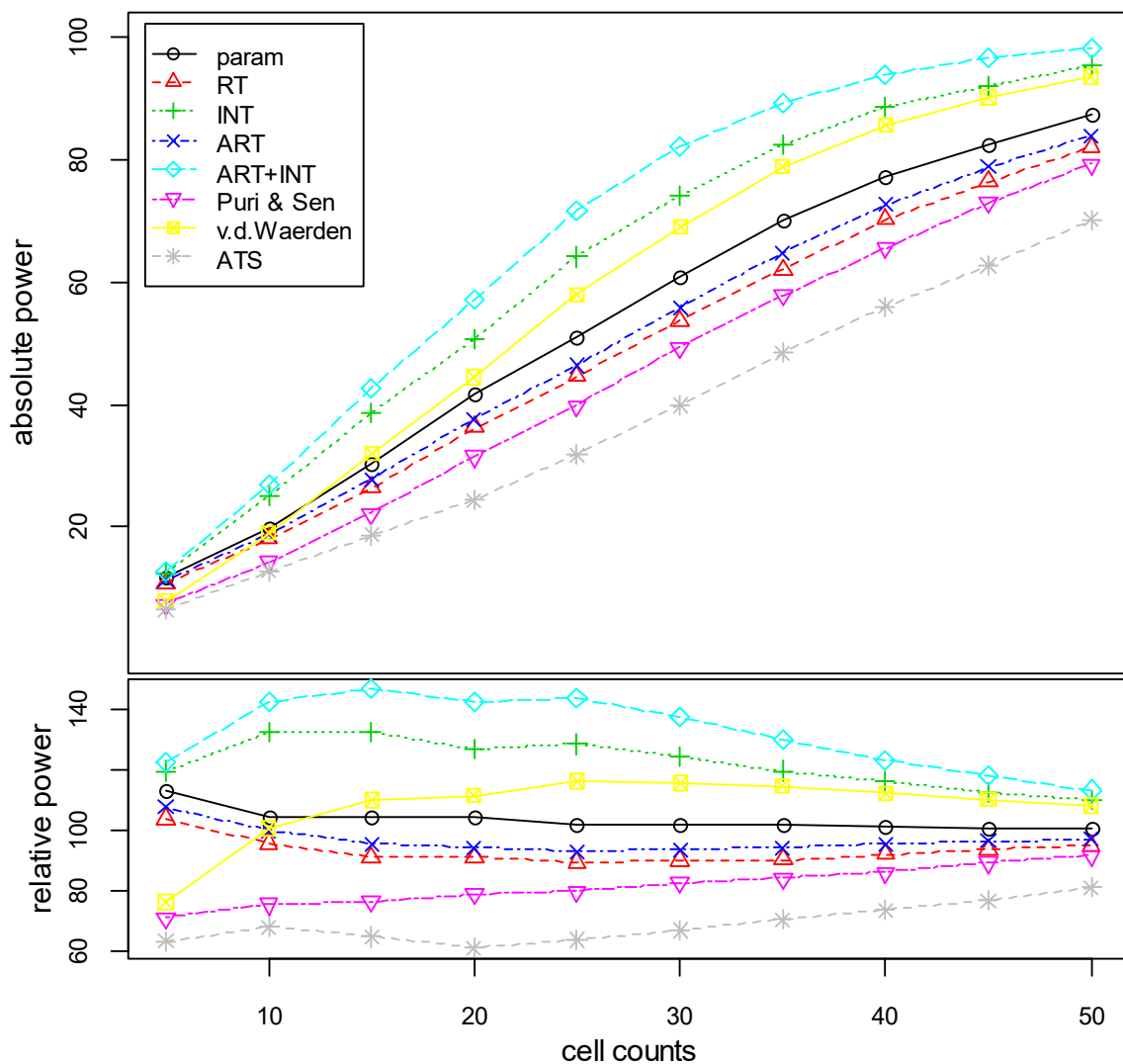
3. 14. 7 lognormal distribution

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	15.25	28.75	47.75	61.75	74.50	83.40	90.40	93.45	97.00	98.50
RT	16.15	31.00	50.35	64.95	78.10	86.25	92.05	95.30	97.65	98.65
INT	15.90	32.05	50.65	66.30	77.70	86.30	92.65	95.90	98.00	99.05
ART	14.80	31.50	49.55	65.05	78.35	86.40	92.30	95.60	97.80	98.75
ART+INT	14.55	32.65	52.30	67.95	80.30	88.65	94.35	96.95	98.80	99.35
Puri & Sen	10.20	25.00	43.45	59.60	72.70	82.40	89.85	94.10	96.65	98.05
v.d.Waerden	10.20	24.95	44.20	59.50	73.35	82.75	90.55	94.05	97.35	98.60
ATS	8.35	18.15	31.55	47.50	61.05	72.25	81.70	88.05	92.20	95.50



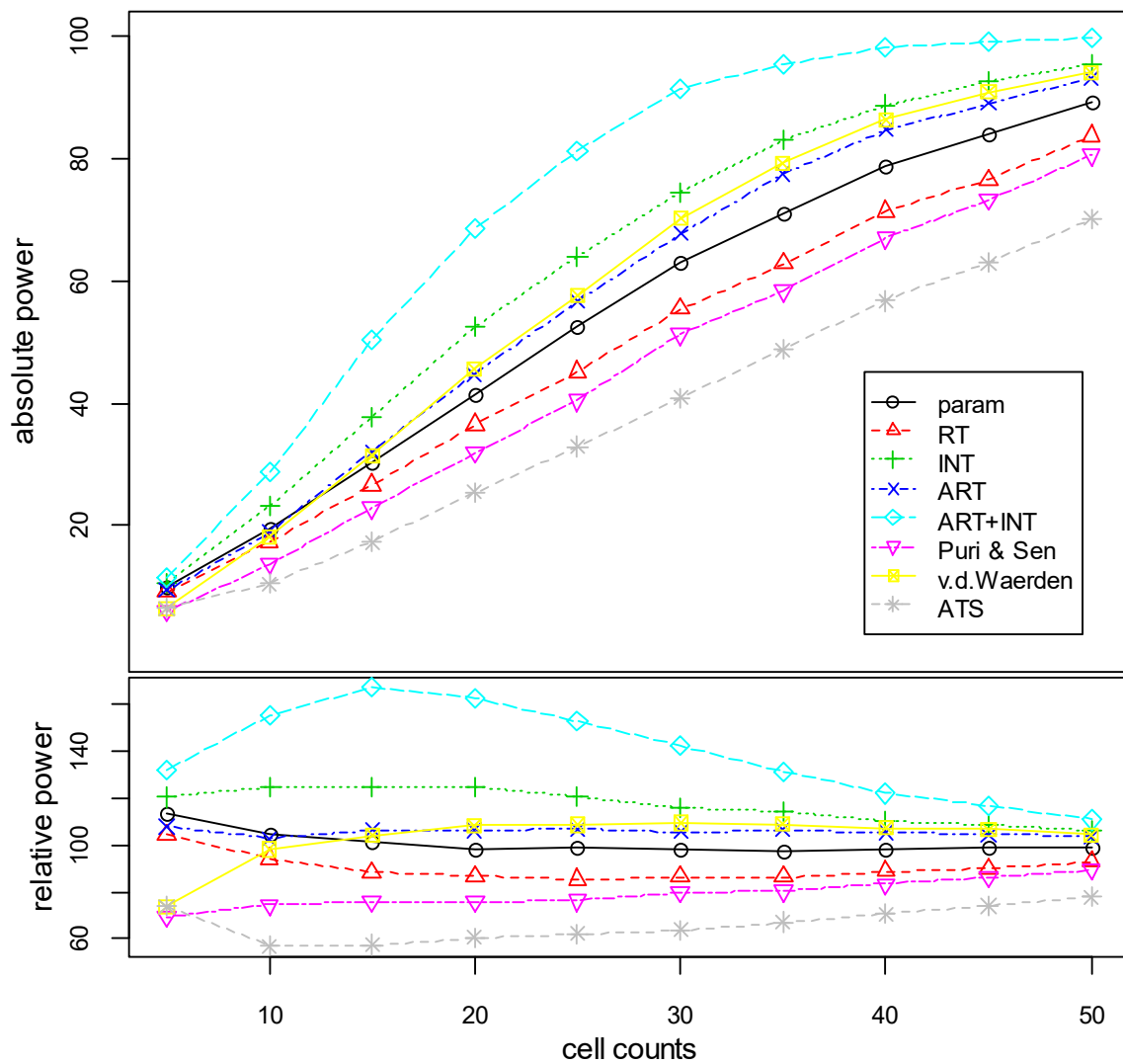
3. 14. 8 uniform distribution - continuous

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	11.80	19.80	30.25	41.65	50.85	60.65	69.90	77.00	82.20	87.25
RT	10.85	18.10	26.45	36.30	44.60	53.65	61.95	70.15	76.30	81.95
INT	12.50	25.05	38.55	50.75	64.05	74.10	82.25	88.50	92.00	95.20
ART	11.25	18.90	27.70	37.60	46.35	55.75	64.70	72.65	78.80	83.85
ART+INT	12.80	27.00	42.60	57.00	71.65	82.05	89.20	93.70	96.60	98.05
Puri & Sen	7.40	14.30	22.15	31.50	39.70	49.30	57.80	65.45	72.85	79.15
v.d.Waerden	7.95	19.05	31.95	44.45	57.95	68.95	78.80	85.50	90.05	93.45
ATS	6.60	12.85	18.75	24.35	31.75	39.85	48.40	55.95	62.65	70.10



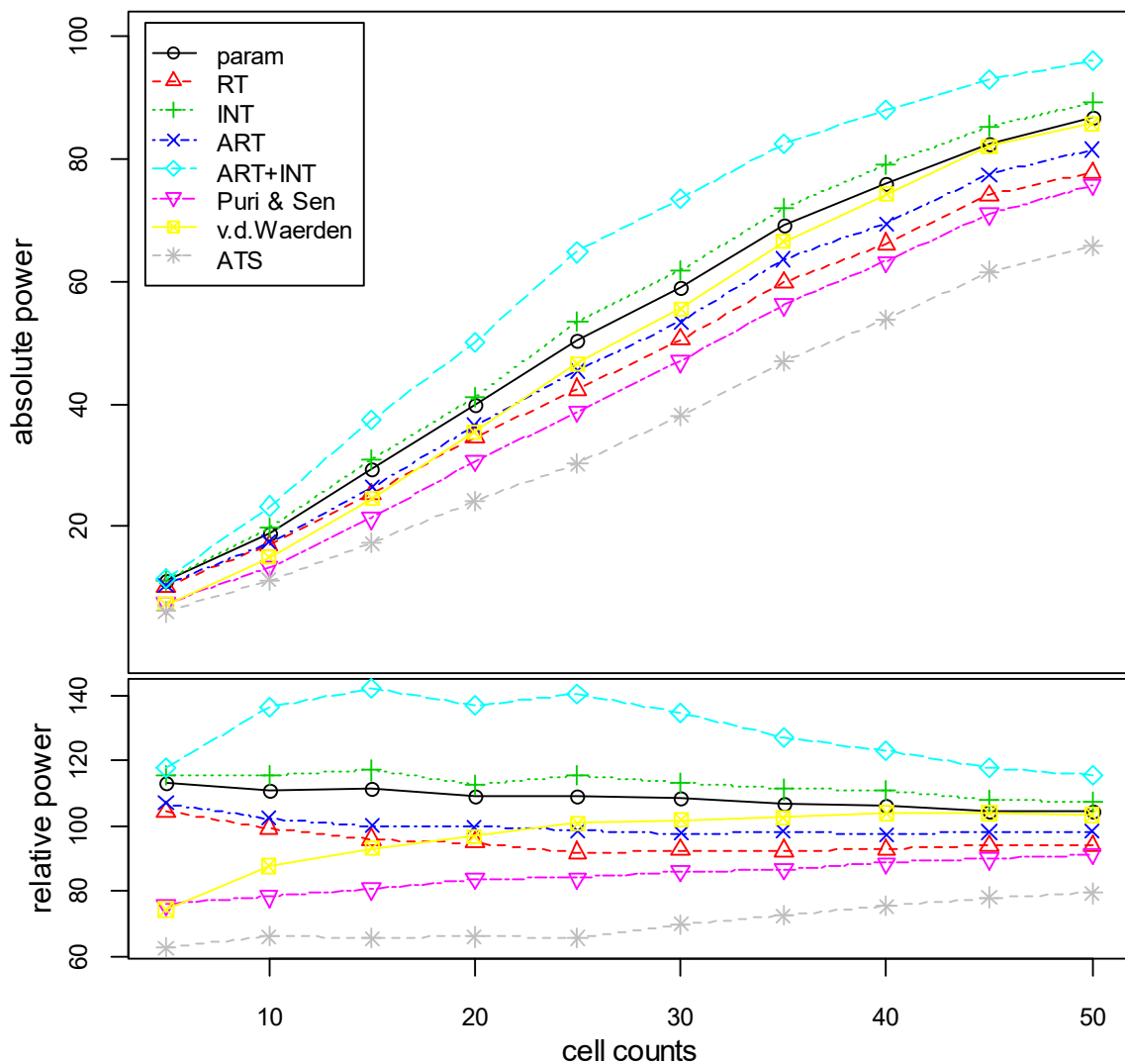
3. 14. 9 uniform distribution - discrete

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	10.0	19.45	30.45	41.45	52.35	62.95	70.90	78.75	83.90	89.10
RT	9.2	17.45	26.60	36.50	45.15	55.40	62.75	71.25	76.35	83.60
INT	10.6	23.10	37.65	52.60	63.95	74.45	82.95	88.65	92.40	95.25
ART	9.5	19.05	32.05	44.70	56.55	67.70	77.40	84.65	88.85	93.05
ART+INT	11.6	28.85	50.40	68.50	81.05	91.30	95.35	97.95	99.10	99.60
Puri & Sen	6.1	13.80	22.85	31.95	40.45	51.25	58.35	66.95	73.25	80.50
v.d.Waerden	6.5	18.20	31.40	45.65	57.45	70.15	79.15	86.25	90.75	93.90
ATS	6.5	10.55	17.30	25.45	32.90	40.85	48.70	56.65	62.90	70.10



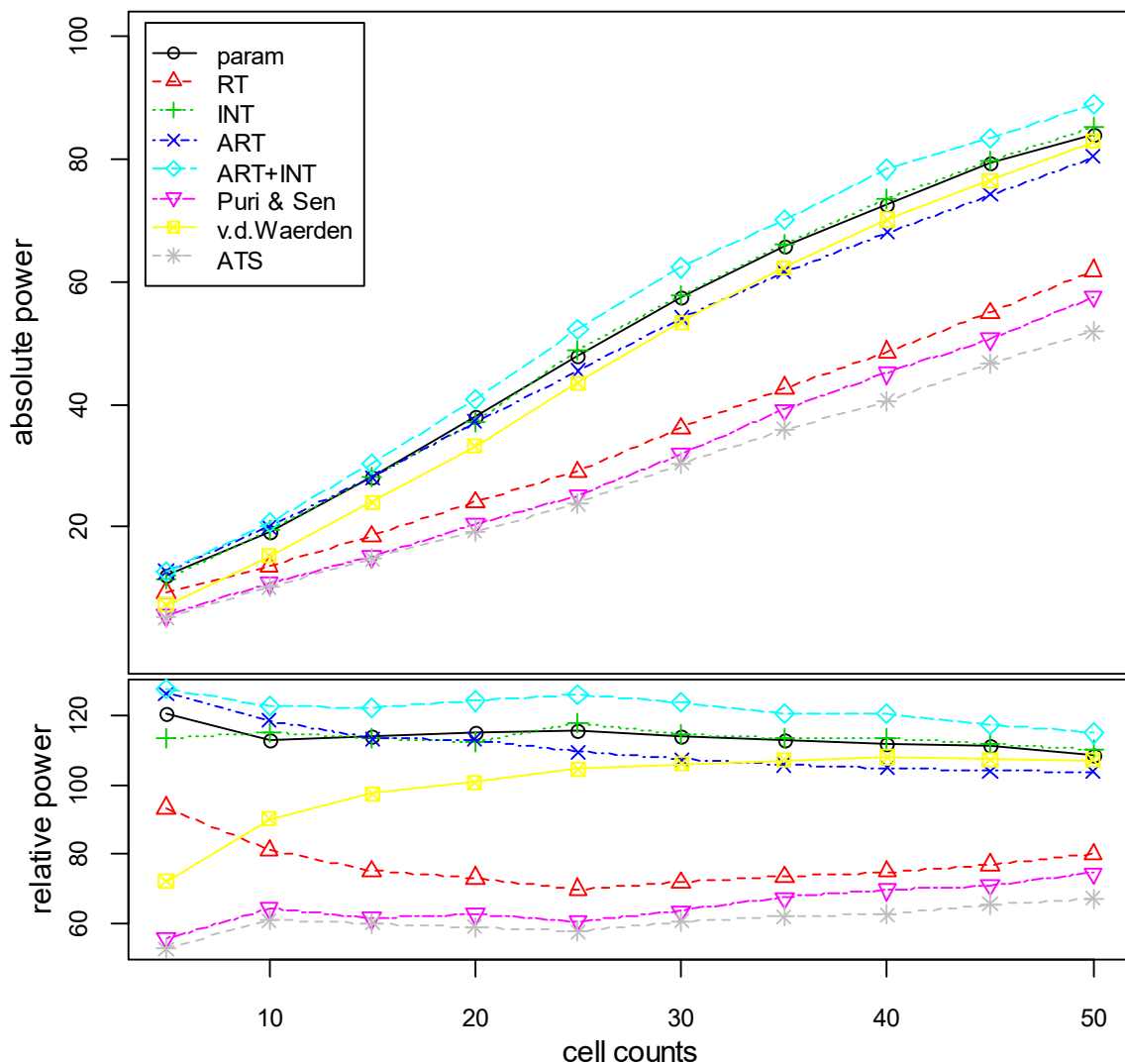
3. 14. 10 left/right skewed distribution

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	11.10	18.95	29.45	39.85	50.20	59.10	69.20	75.80	82.25	86.65
RT	10.25	17.00	25.30	34.70	42.35	50.45	59.75	66.05	74.00	77.70
INT	11.35	19.75	30.90	41.20	53.30	61.80	71.90	79.05	85.25	89.00
ART	10.50	17.50	26.40	36.45	45.40	53.25	63.55	69.35	77.35	81.45
ART+INT	11.55	23.35	37.50	50.10	64.65	73.35	82.35	87.80	92.90	95.80
Puri & Sen	7.45	13.40	21.30	30.65	38.70	46.95	56.10	63.15	70.90	75.70
v.d.Waerden	7.30	15.00	24.60	35.45	46.50	55.45	66.40	74.10	81.95	85.60
ATS	6.15	11.30	17.30	24.15	30.25	38.10	46.85	53.75	61.55	65.65



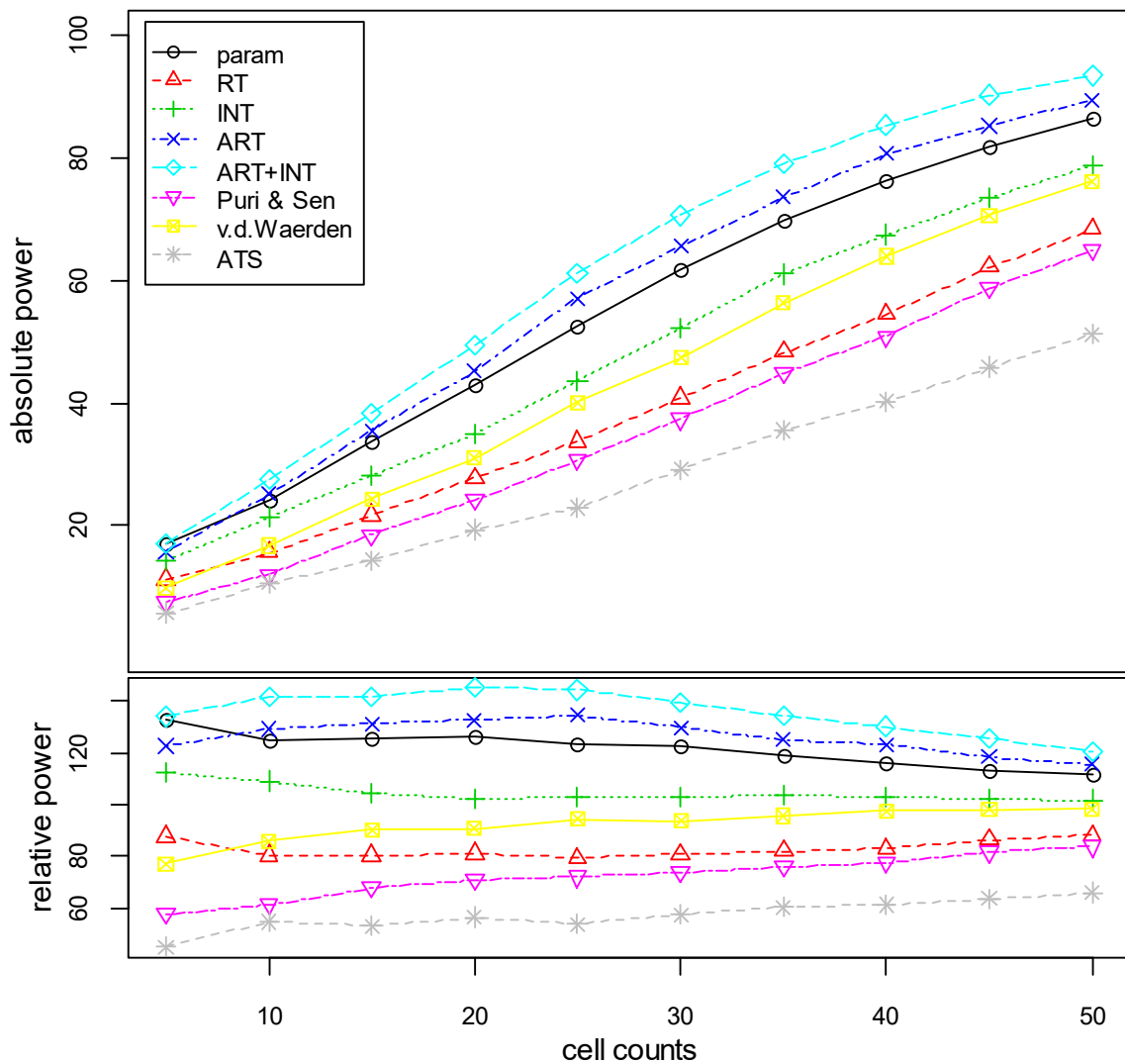
3. 14. 11 left skewed distribution - unequal variances (on B)

	cell count									
method	5	10	15	20	25	30	35	40	45	50
parametric	12.15	19.20	28.15	37.95	47.90	57.45	65.75	72.45	79.20	83.85
RT	9.40	13.75	18.55	24.05	28.95	36.05	42.65	48.50	54.80	61.80
INT	11.45	19.50	28.05	37.00	48.90	57.70	65.95	73.40	79.65	85.10
ART	12.75	20.10	28.00	37.20	45.40	54.00	61.55	67.95	74.10	80.30
ART+INT	12.85	20.80	30.20	40.85	52.25	62.20	70.05	78.20	83.40	88.80
Puri & Sen	5.60	10.90	15.15	20.60	25.15	31.90	39.10	45.10	50.60	57.50
v.d.Waerden	7.25	15.30	24.05	33.15	43.40	53.35	62.30	70.05	76.35	82.80
ATS	5.30	10.30	14.80	19.35	23.85	30.45	36.00	40.50	46.70	51.80



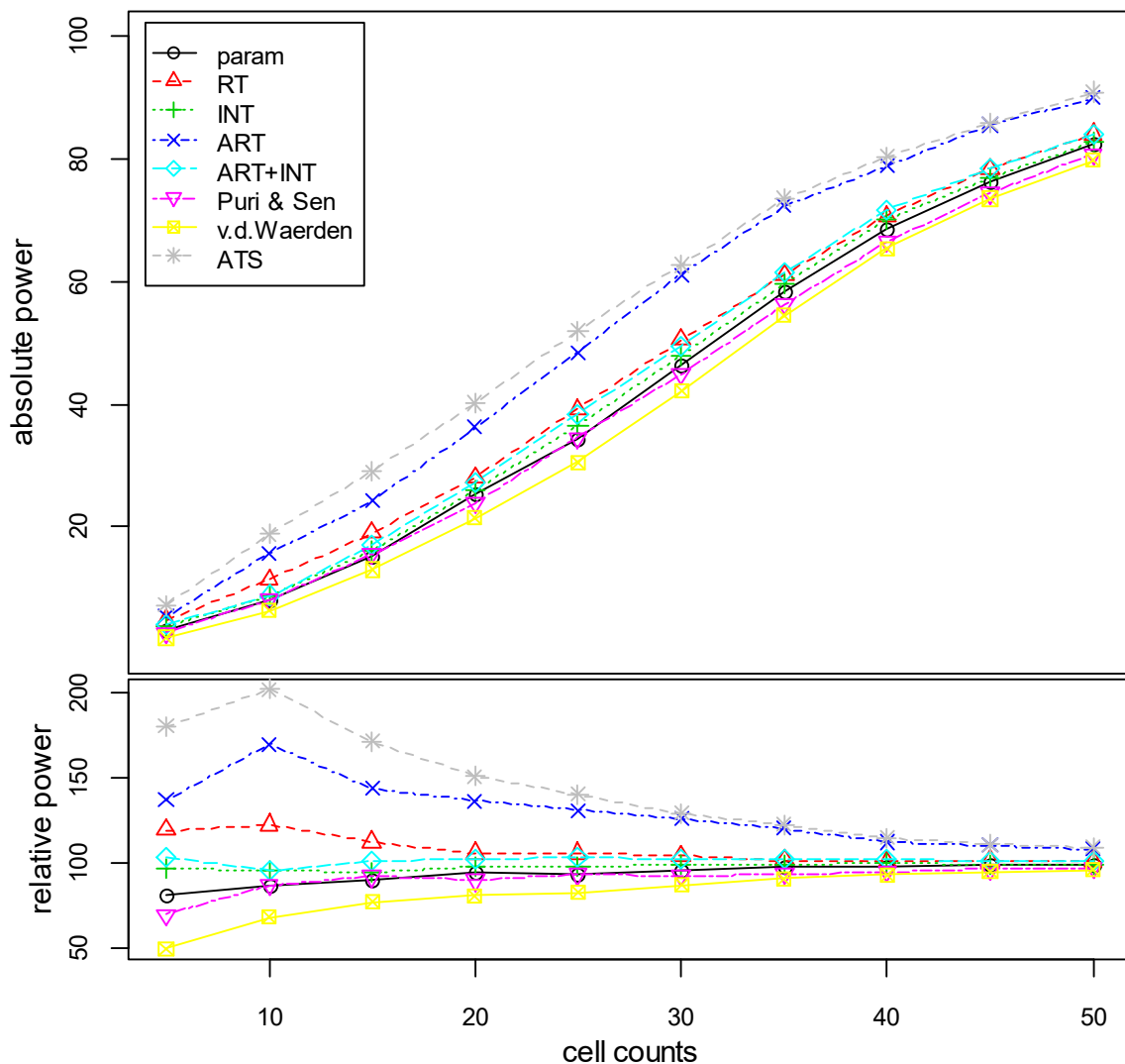
3. 14. 12 left skewed distribution - unequal variances (on A and B)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	17.00	24.30	33.80	43.00	52.35	61.85	69.85	76.15	81.60	86.35
RT	11.25	15.65	21.70	27.70	33.70	40.85	48.30	54.45	62.15	68.30
INT	14.40	21.25	28.15	34.85	43.65	52.15	60.95	67.40	73.30	78.75
ART	15.70	25.15	35.40	45.20	57.00	65.55	73.50	80.60	85.10	89.40
ART+INT	17.15	27.55	38.30	49.45	61.15	70.50	78.90	85.25	90.20	93.30
Puri & Sen	7.45	12.00	18.45	24.30	30.65	37.40	44.90	50.80	58.75	64.95
v.d.Waerden	9.90	16.75	24.40	31.00	40.05	47.30	56.25	63.90	70.60	76.05
ATS	5.80	10.70	14.40	19.35	22.90	29.15	35.55	40.25	45.85	51.15



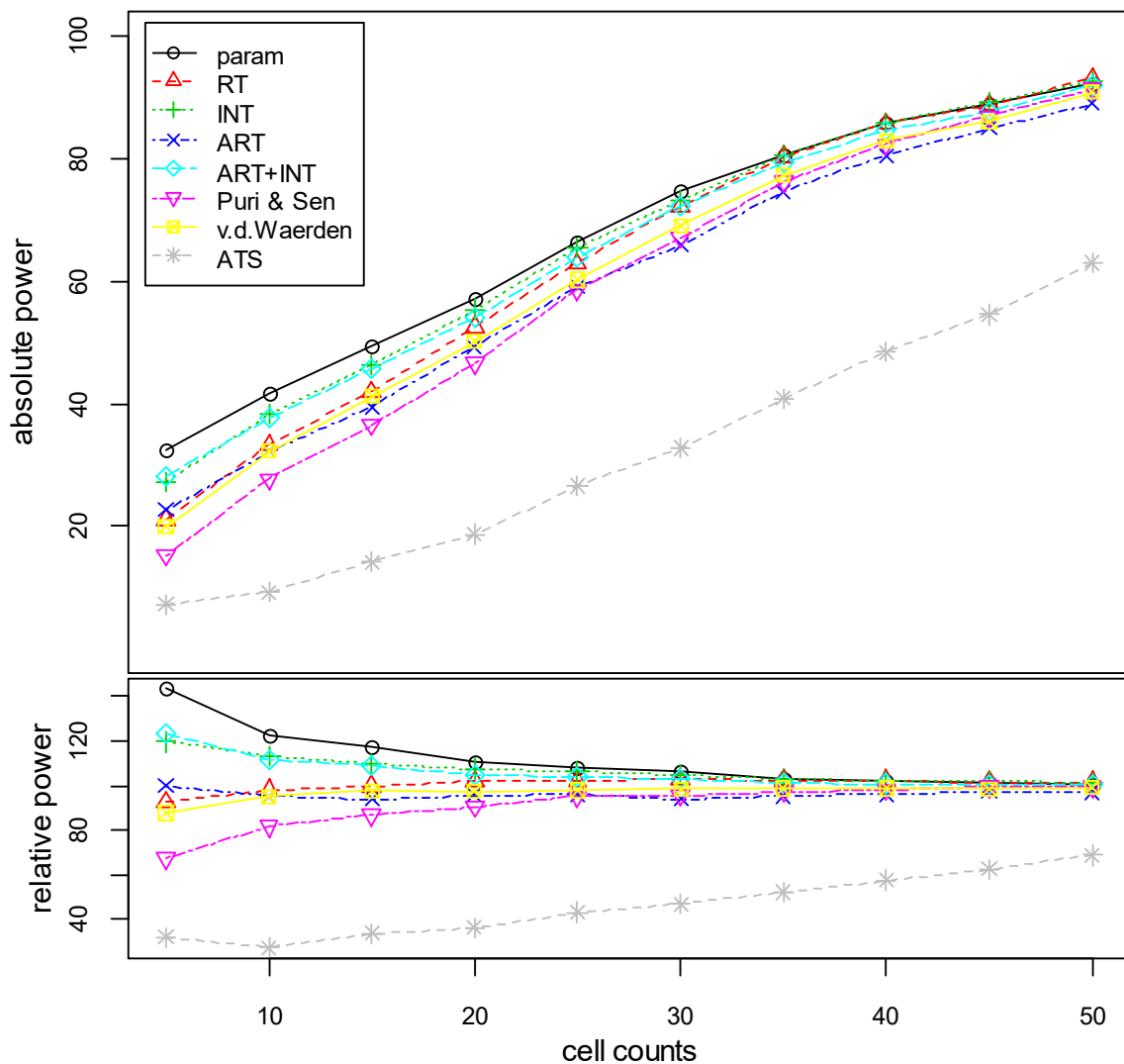
3. 14. 13 normal distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	3.25	8.05	15.30	25.25	34.40	46.45	58.40	68.55	76.15	82.20
RT	4.80	11.40	19.05	28.10	39.15	50.45	61.00	70.60	78.30	83.90
INT	3.90	8.90	16.05	25.95	36.35	47.75	59.50	69.95	76.70	82.55
ART	5.50	15.80	24.30	36.25	48.40	61.00	72.25	78.70	85.40	89.85
ART+INT	4.15	8.90	17.10	27.20	38.30	49.40	61.50	71.55	78.35	83.90
Puri & Sen	2.80	8.10	15.60	23.95	34.50	44.85	56.25	66.45	74.30	80.70
v.d.Waerden	2.00	6.35	13.05	21.45	30.55	42.15	54.45	65.30	73.40	79.65
ATS	7.25	18.80	29.00	40.15	51.90	62.65	73.45	80.30	85.65	90.80



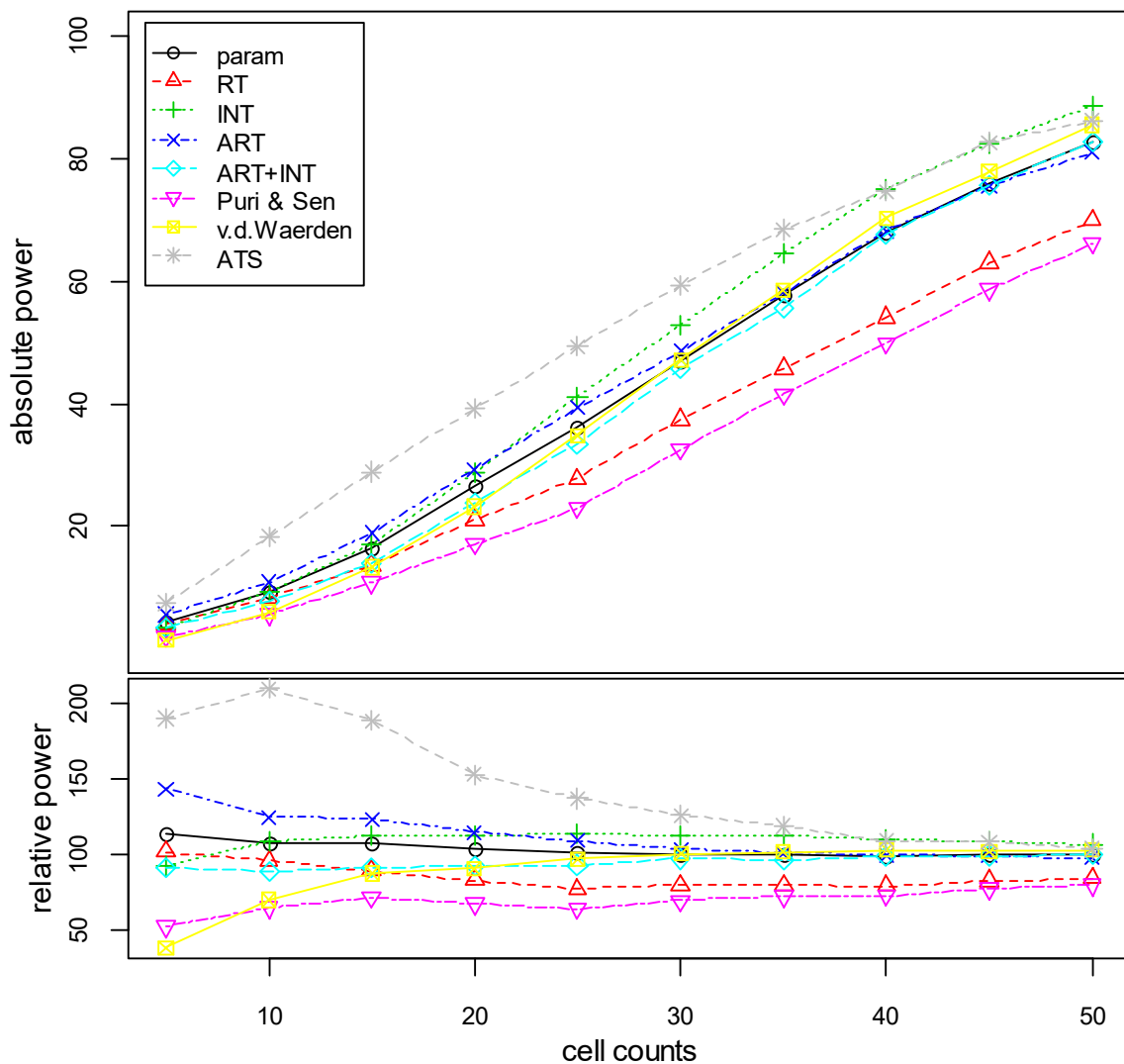
3. 14. 14 normal distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	32.60	41.55	49.55	57.05	66.25	74.60	80.50	85.75	88.75	92.30
RT	21.05	33.25	41.95	52.45	62.80	72.05	80.20	85.65	88.65	93.00
INT	27.20	38.25	46.30	55.40	65.40	73.20	80.40	85.80	89.05	92.50
ART	22.75	32.25	39.50	49.25	59.05	65.85	74.55	80.40	84.85	88.90
ART+INT	28.10	37.80	45.80	54.05	63.90	72.25	79.15	84.55	87.55	91.75
Puri & Sen	15.35	27.75	36.55	46.60	58.50	67.05	76.15	82.25	86.85	91.20
v.d.Waerden	19.95	32.20	41.15	50.15	60.20	69.05	77.20	82.85	85.95	90.75
ATS	7.30	9.30	14.20	18.75	26.60	32.80	40.85	48.35	54.50	62.95



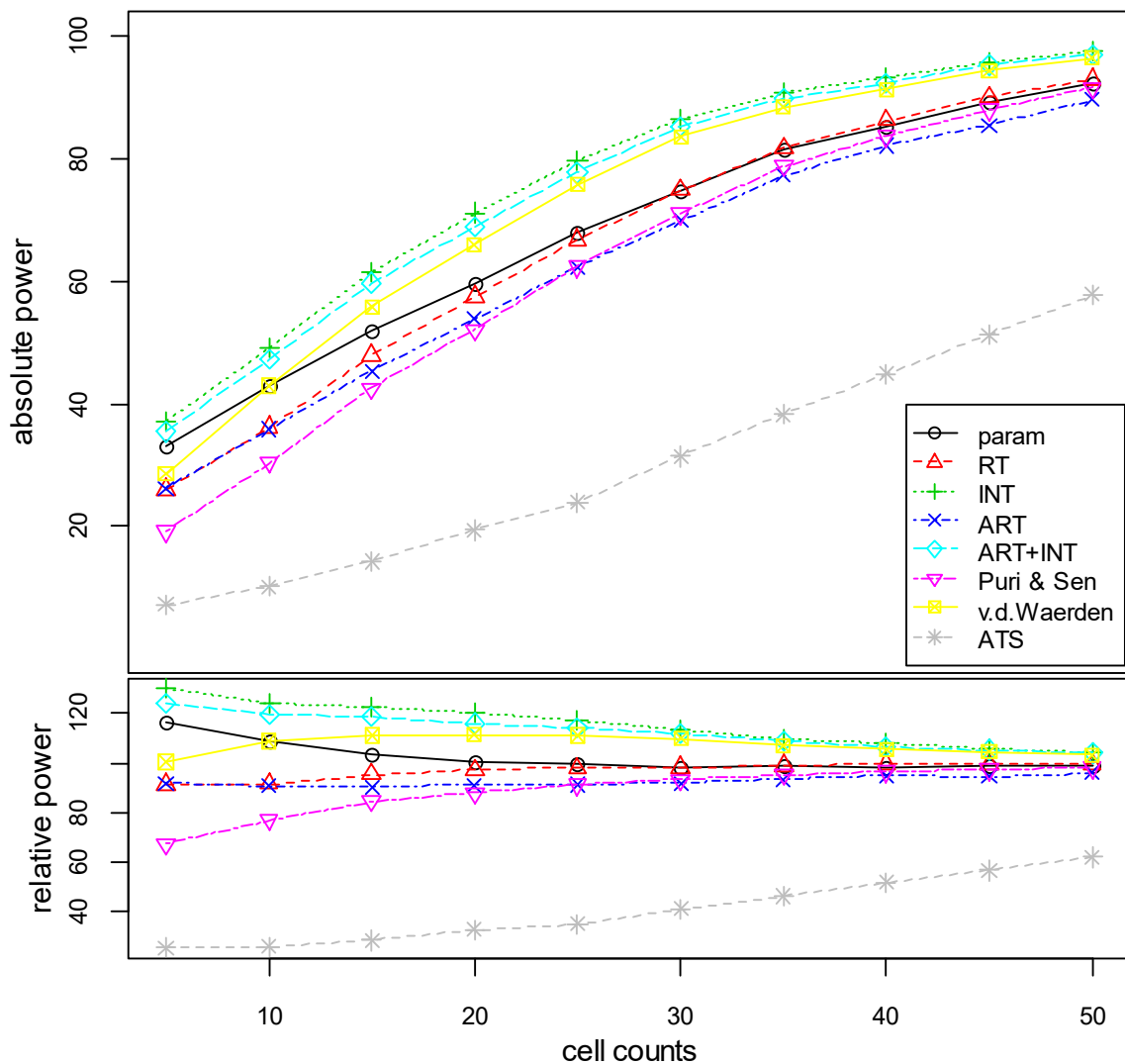
3. 14. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	4.50	9.40	16.40	26.55	36.25	46.95	57.85	67.80	75.75	82.70
RT	4.00	8.35	13.65	21.15	27.75	37.40	45.70	54.10	63.00	69.85
INT	3.65	9.50	17.20	28.75	41.05	52.85	64.50	75.05	82.35	88.60
ART	5.65	10.90	18.90	29.30	39.30	48.55	58.10	68.05	75.50	80.95
ART+INT	3.60	7.70	13.95	23.75	33.45	45.60	55.65	67.45	75.60	82.70
Puri & Sen	2.05	5.65	10.90	17.20	23.05	32.60	41.55	49.85	58.65	66.15
v.d.Waerden	1.50	6.10	13.35	23.20	34.85	47.15	58.55	70.30	77.85	85.45
ATS	7.50	18.35	28.90	39.15	49.30	59.30	68.35	74.60	82.55	86.10



3. 14. 16 left skewed distribution - unequal variances (small n_i - large s_j)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
parametric	33.20	42.80	51.80	59.55	67.90	74.70	81.55	85.05	89.15	92.15
RT	26.00	36.15	47.90	57.45	66.70	74.75	81.70	86.20	89.95	92.80
INT	37.00	49.00	61.35	71.10	79.70	86.25	90.65	93.20	95.50	97.40
ART	26.15	35.85	45.25	53.85	62.25	69.80	77.15	82.05	85.35	89.50
ART+INT	35.40	47.25	59.70	68.70	77.60	85.10	89.80	92.30	95.15	96.80
Puri & Sen	19.20	30.35	42.50	52.05	62.25	70.95	78.80	83.50	87.85	91.45
v.d.Waerden	28.60	42.95	55.75	65.90	75.70	83.55	88.35	91.25	94.25	96.30
ATS	7.30	10.25	14.30	19.40	23.90	31.40	38.25	44.90	51.20	57.80



3. 15. Interaction AB - Gao & Alvo test

3. 15. 1 effects $ab_{ij} = 0.4*s$ / equal n_i

method	cell count									
	5	10	15	20	25	30	35	40	45	50
normal equal var.	29.30	36.10	43.85	57.20	65.10	72.80	80.60	85.25	89.85	93.25
normal (hetero B)	33.50	42.20	50.75	65.85	73.90	80.80	88.05	91.20	94.90	97.10
normal (hetero A, B)	30.65	40.65	48.70	63.85	72.00	79.60	86.45	89.95	94.00	96.40
right skewed	37.00	45.00	58.55	71.35	81.95	87.55	92.85	96.35	97.70	99.10
uniform discrete	30.60	34.25	45.45	54.95	63.55	71.25	80.70	83.70	88.25	90.95
left/right skewed	30.30	34.50	46.50	54.80	63.75	72.00	78.00	83.65	88.90	91.65
left skewed (hetero B)	31.70	37.40	48.60	59.55	68.45	74.90	83.65	87.15	91.35	93.85
left skewed (hetero A, B)	31.30	36.30	47.85	58.25	67.45	74.45	83.25	87.30	91.05	93.70

3. 15. 2 effects $ab_{ij} = 0.6*s$ / equal n_i (A and B significant)

method	cell count									
	5	10	15	20	25	30	35	40	45	50
normal equal var.	46.10	64.35	78.40	90.25	94.85	97.95	99.40	99.70	99.90	99.85
normal (hetero B)	44.25	60.15	74.20	86.65	92.65	96.85	98.95	99.50	99.90	99.85
normal (hetero A, B)	39.65	52.90	66.25	79.55	86.95	91.95	96.85	98.15	99.05	99.50
right skewed	47.05	64.90	80.45	90.30	96.65	98.60	99.20	99.85	99.95	99.95
uniform discrete	43.90	61.10	75.35	85.80	92.35	96.25	98.30	99.35	99.60	99.95
left/right skewed	45.35	59.75	77.25	86.85	93.35	96.65	98.90	99.40	99.65	99.85
left skewed (hetero B)	40.40	53.05	67.00	78.50	86.45	92.05	95.40	97.90	98.25	99.65
left skewed (hetero A, B)	36.75	43.40	56.80	68.95	77.25	84.85	90.60	93.15	96.05	97.45