

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

Part A: Two between subjects factors designs

Appendix 5 Tables and graphs of the power in relation to the effect size

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 $d=0.2*s, \dots, 0.9*s$.

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 $d=0.2*s, \dots, 0.9*s$. 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 together.

The legend for all graphs is the same:

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

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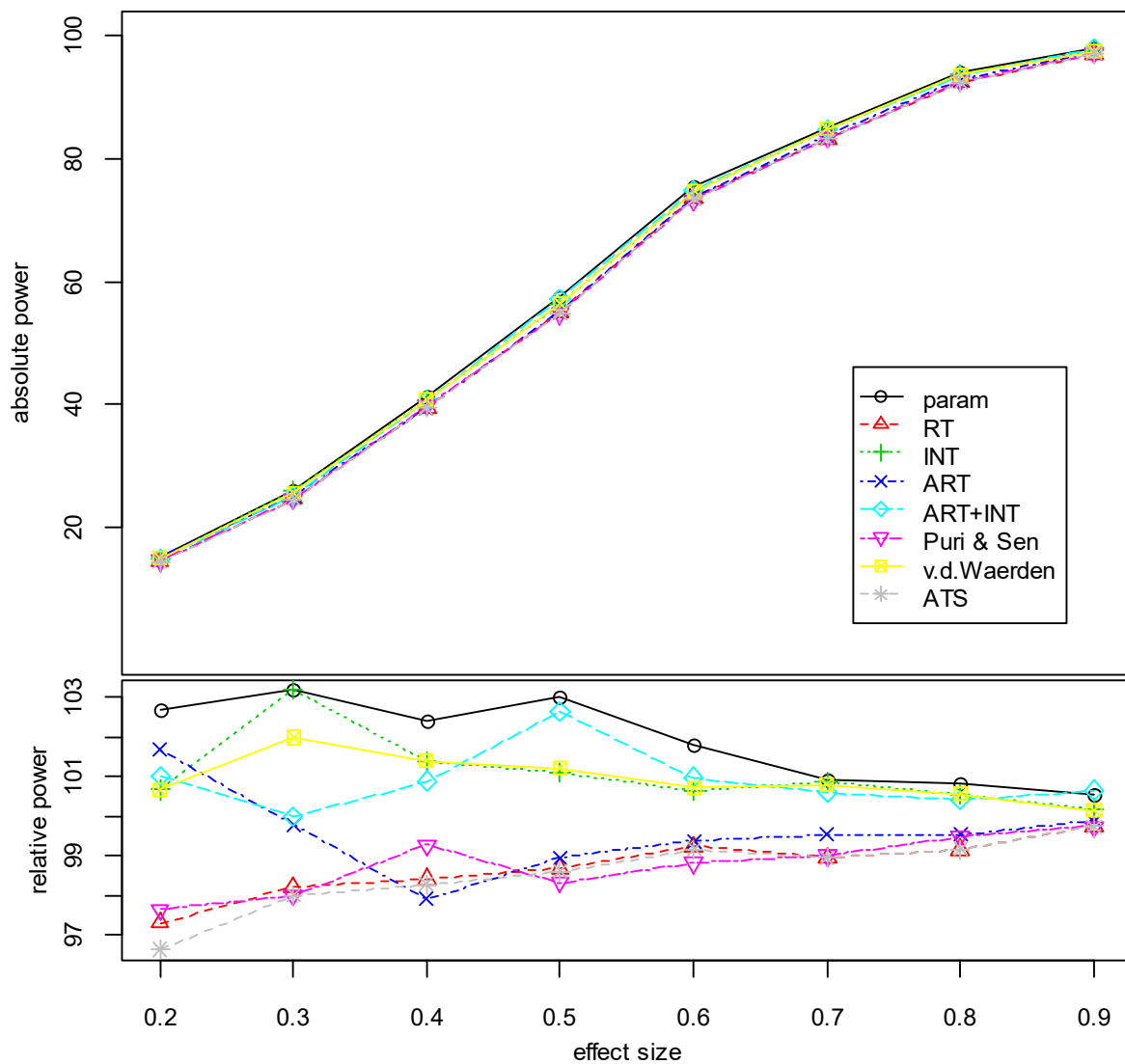
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5. 1. Main effect A (equal $n_i=10$ / # levels = $2*4$)

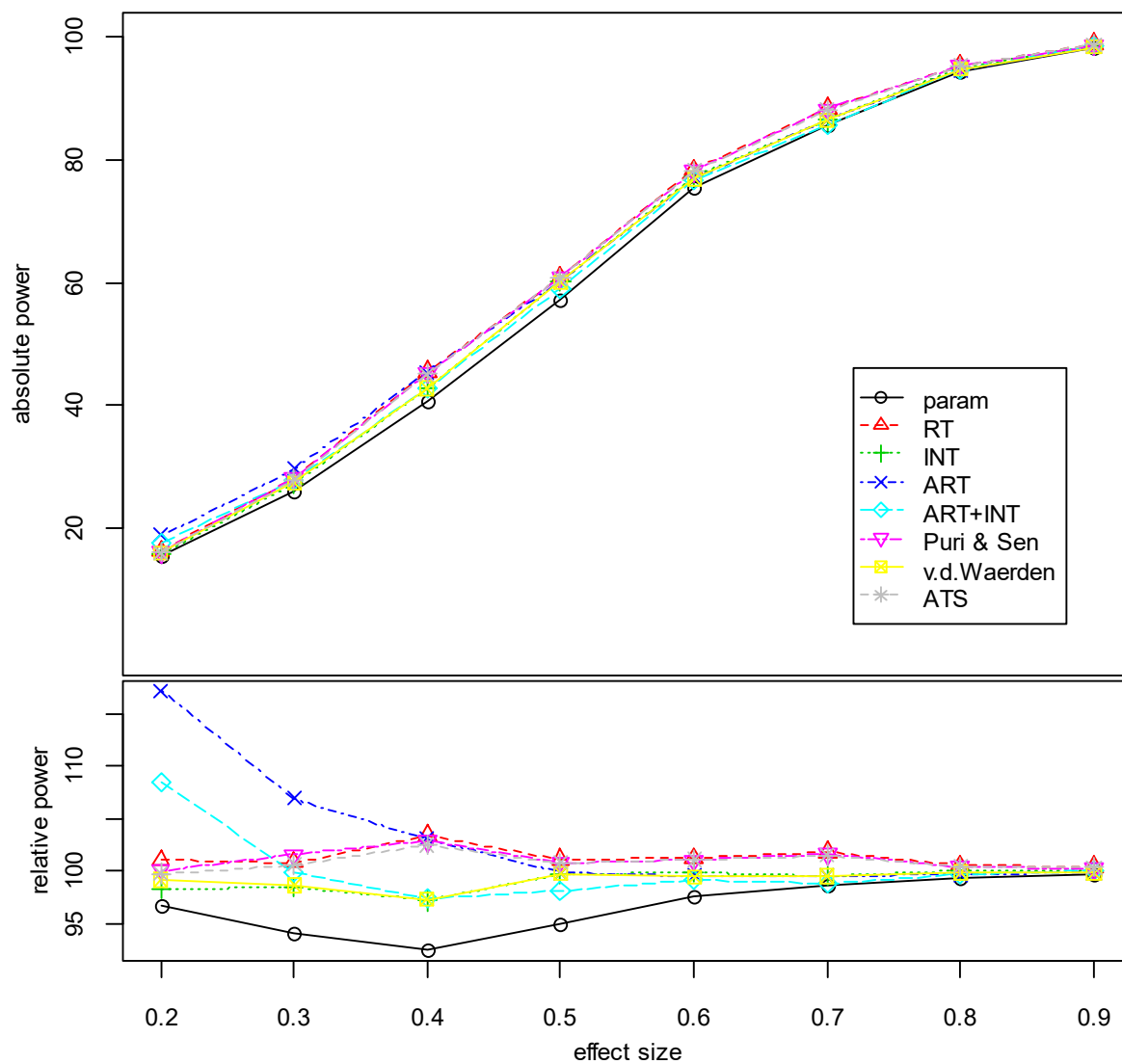
5. 1. 1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.30	25.90	41.15	57.35	75.45	84.90	93.90	97.85
RT	14.50	24.65	39.55	54.95	73.55	83.25	92.35	97.05
INT	15.00	25.90	40.75	56.30	74.60	84.85	93.65	97.50
ART	15.15	25.05	39.35	55.10	73.65	83.75	92.70	97.20
ART+INT	15.05	25.10	40.55	57.15	74.85	84.65	93.50	97.95
Puri & Sen	14.55	24.60	39.90	54.75	73.25	83.30	92.65	97.05
v.d.Waerden	15.00	25.60	40.75	56.35	74.65	84.80	93.65	97.45
ATS	14.40	24.60	39.50	54.90	73.50	83.25	92.35	97.05



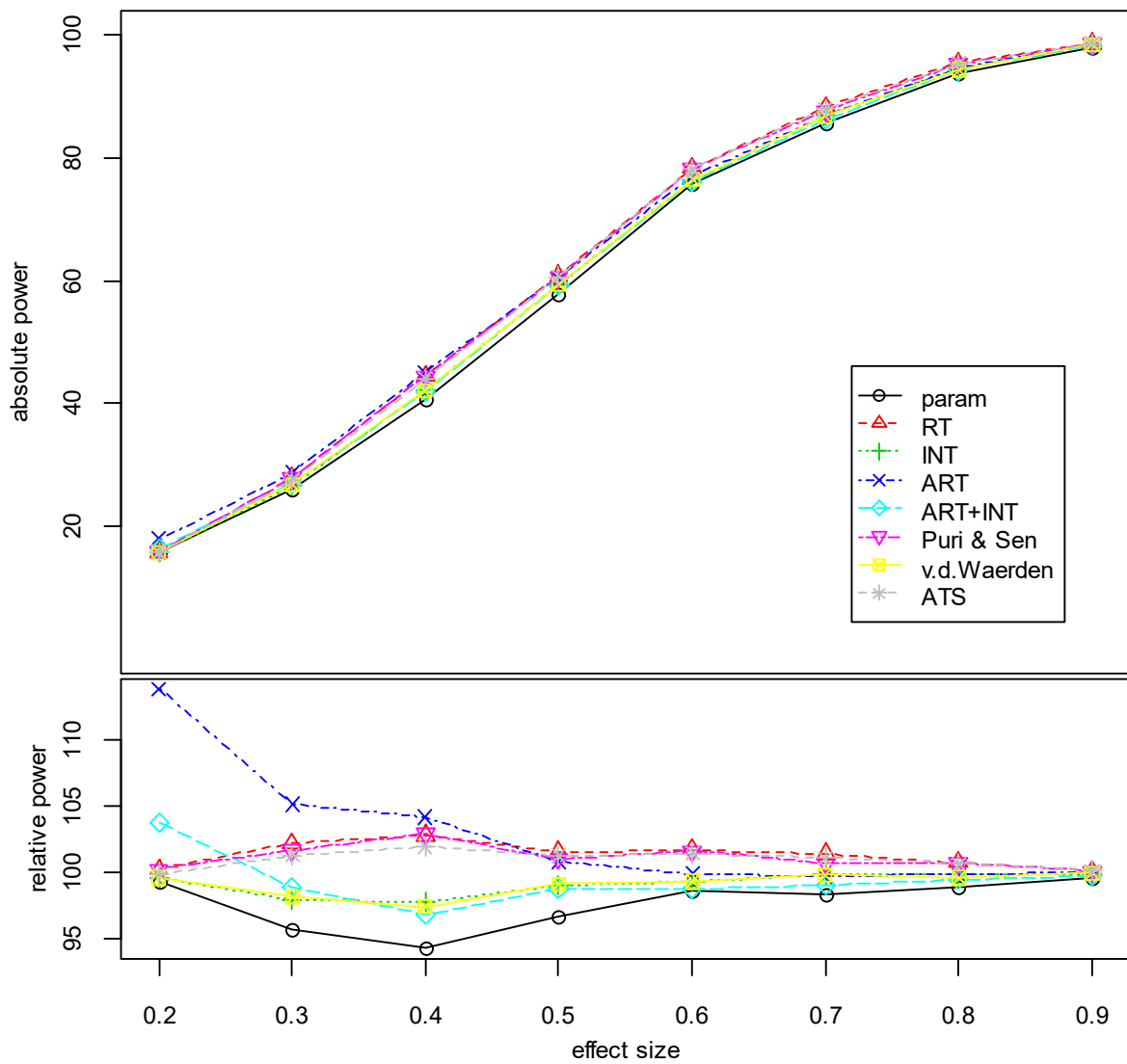
5. 1. 2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.60	26.15	40.70	57.15	75.50	85.70	94.20	98.10
RT	16.30	28.00	45.50	60.90	78.30	88.40	95.35	98.80
INT	15.85	27.35	42.75	60.05	77.30	86.40	94.90	98.40
ART	18.90	29.70	45.35	60.10	77.00	86.40	94.55	98.25
ART+INT	17.50	27.75	42.85	59.05	76.70	85.75	94.60	98.40
Puri & Sen	16.15	28.20	45.25	60.70	78.15	88.20	95.30	98.65
v.d.Waerden	16.00	27.40	42.80	60.05	76.95	86.40	94.75	98.25
ATS	16.10	27.95	45.10	60.70	78.20	88.15	95.30	98.75



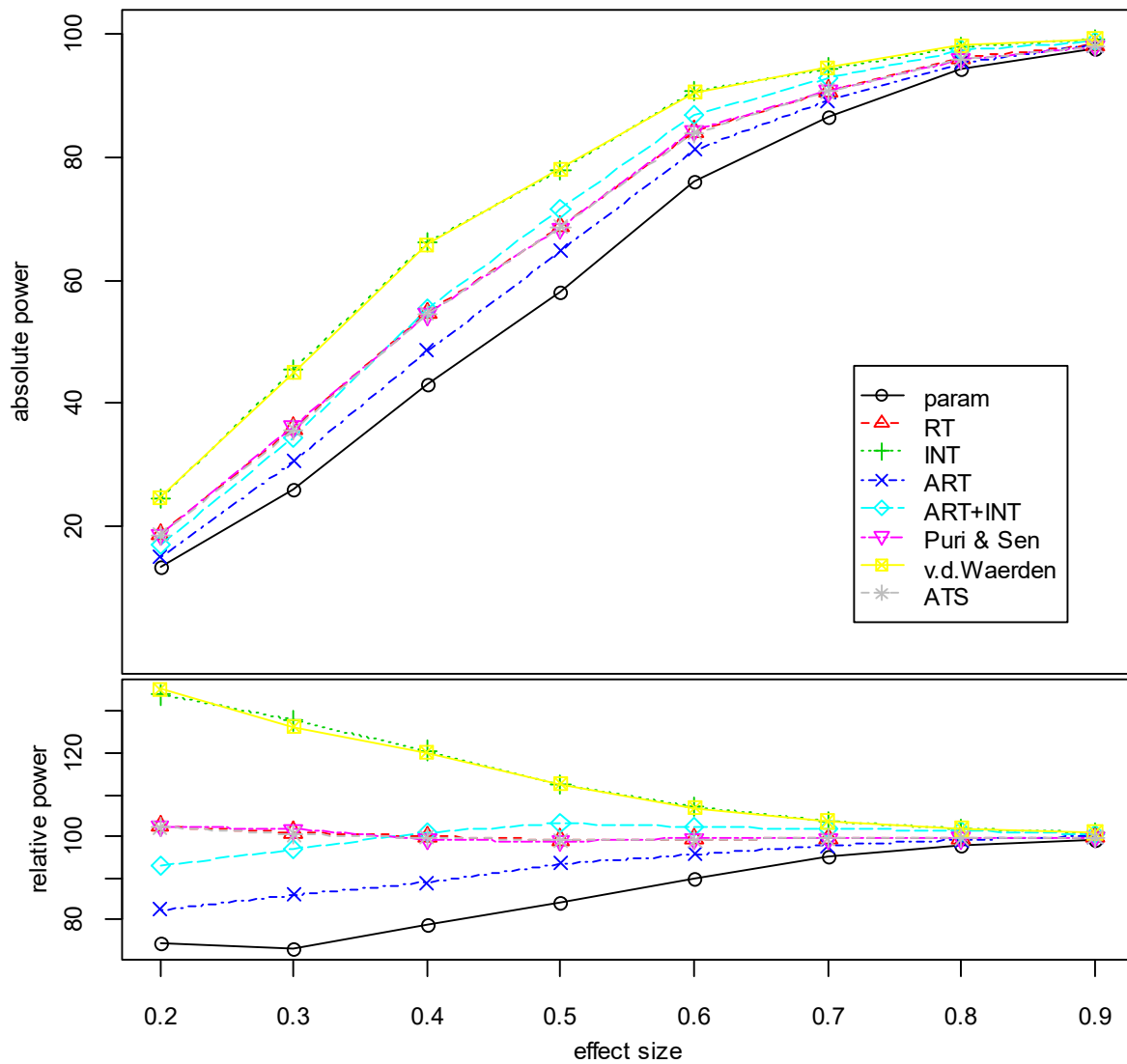
5. 1. 3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.75	26.15	40.80	57.85	75.85	85.55	93.70	98.00
RT	15.90	27.90	44.45	60.80	78.25	88.25	95.40	98.55
INT	15.80	26.75	42.30	59.25	76.40	86.85	94.60	98.35
ART	18.05	28.70	45.05	60.35	76.85	86.75	94.50	98.40
ART+INT	16.45	27.00	41.90	59.15	75.95	86.20	94.20	98.15
Puri & Sen	15.90	27.75	44.50	60.45	78.15	87.60	95.35	98.50
v.d.Waerden	15.80	26.80	42.15	59.35	76.40	86.85	94.30	98.40
ATS	15.85	27.65	44.10	60.60	78.00	87.95	95.30	98.55



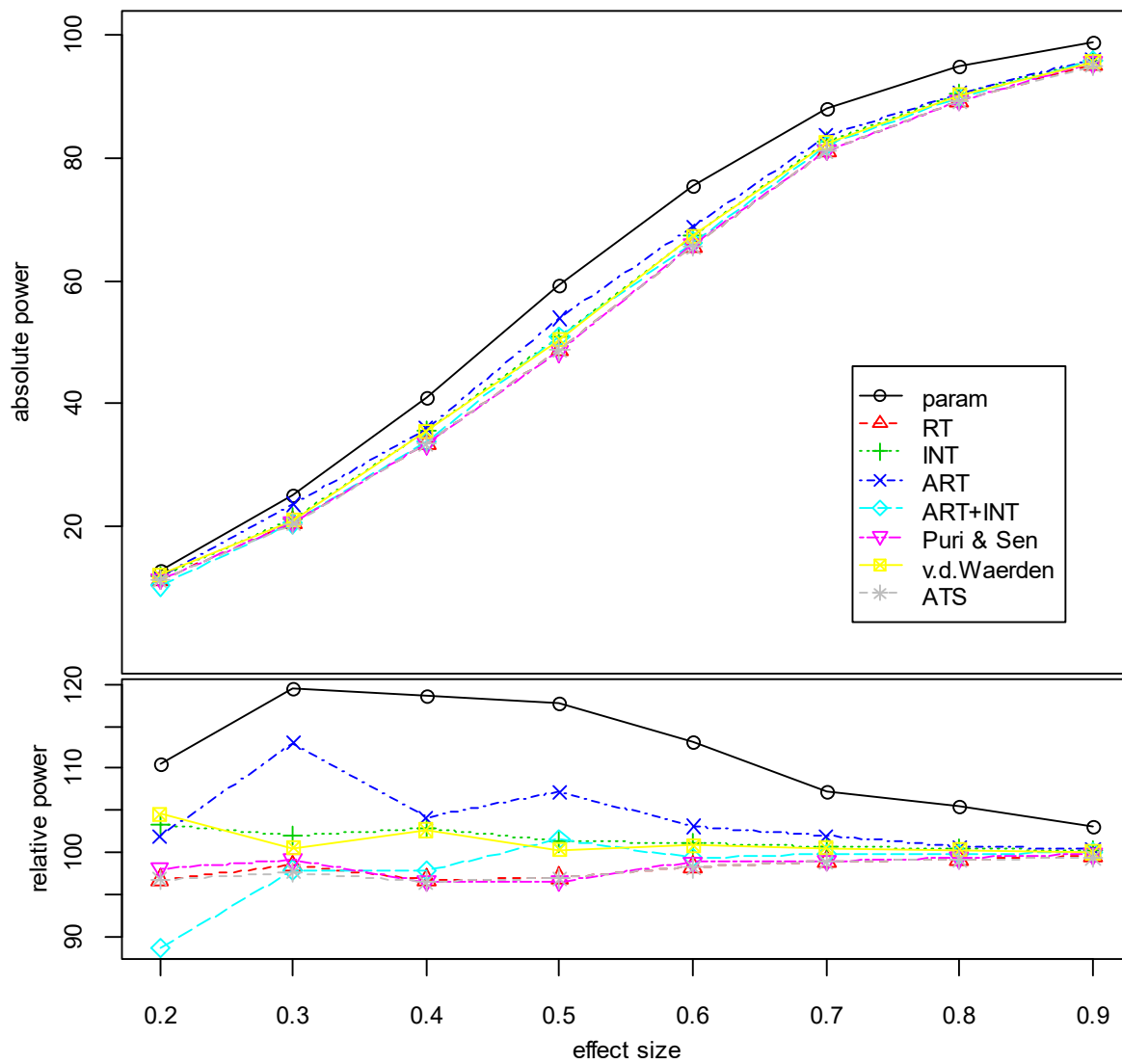
5. 1. 4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.55	25.95	43.05	58.20	76.05	86.65	94.35	97.65
RT	18.70	35.90	54.65	68.70	84.20	90.75	96.00	98.10
INT	24.45	45.45	66.05	77.95	90.85	94.45	98.00	99.15
ART	15.05	30.60	48.60	64.80	81.25	89.15	95.30	98.15
ART+INT	16.95	34.50	55.35	71.45	86.75	92.80	97.45	98.90
Puri & Sen	18.70	36.15	54.40	68.45	84.30	90.65	95.90	98.05
v.d.Waerden	24.70	44.95	65.75	78.05	90.55	94.50	98.10	99.20
ATS	18.65	35.75	54.60	68.65	83.95	90.70	95.95	98.05



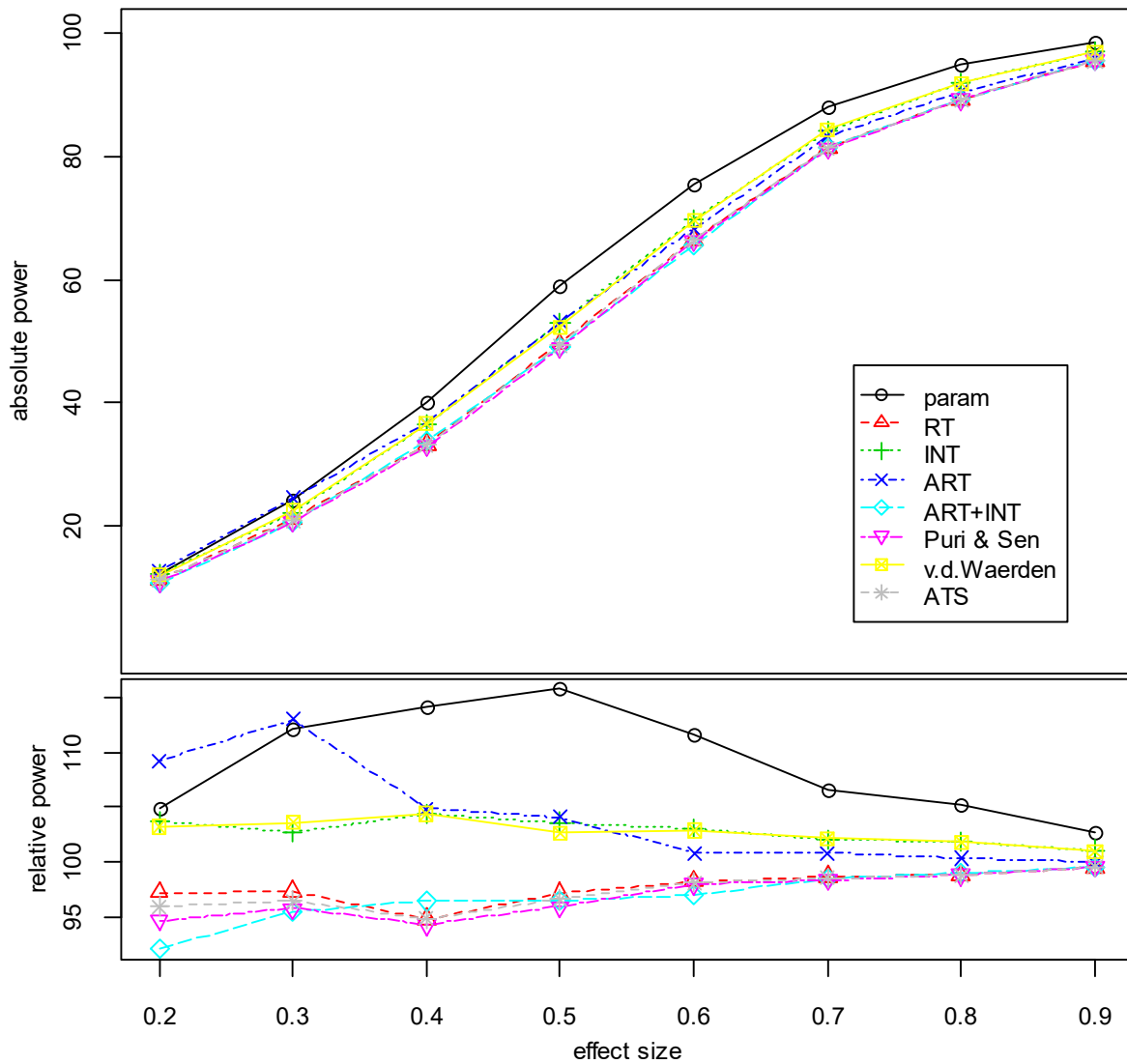
5. 1. 5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	12.85	25.00	41.10	59.15	75.45	88.05	94.85	98.70
RT	11.25	20.60	33.50	48.70	65.60	81.15	89.15	95.15
INT	12.00	21.35	35.60	50.85	67.40	82.60	90.40	95.80
ART	11.85	23.65	36.05	53.85	68.80	83.65	90.45	96.05
ART+INT	10.30	20.50	33.90	51.00	66.30	81.95	89.80	95.75
Puri & Sen	11.40	20.75	33.45	48.50	65.95	81.25	89.35	95.45
v.d.Waerden	12.15	21.05	35.55	50.40	67.30	82.45	90.20	95.65
ATS	11.25	20.45	33.40	48.65	65.50	81.10	89.15	95.05



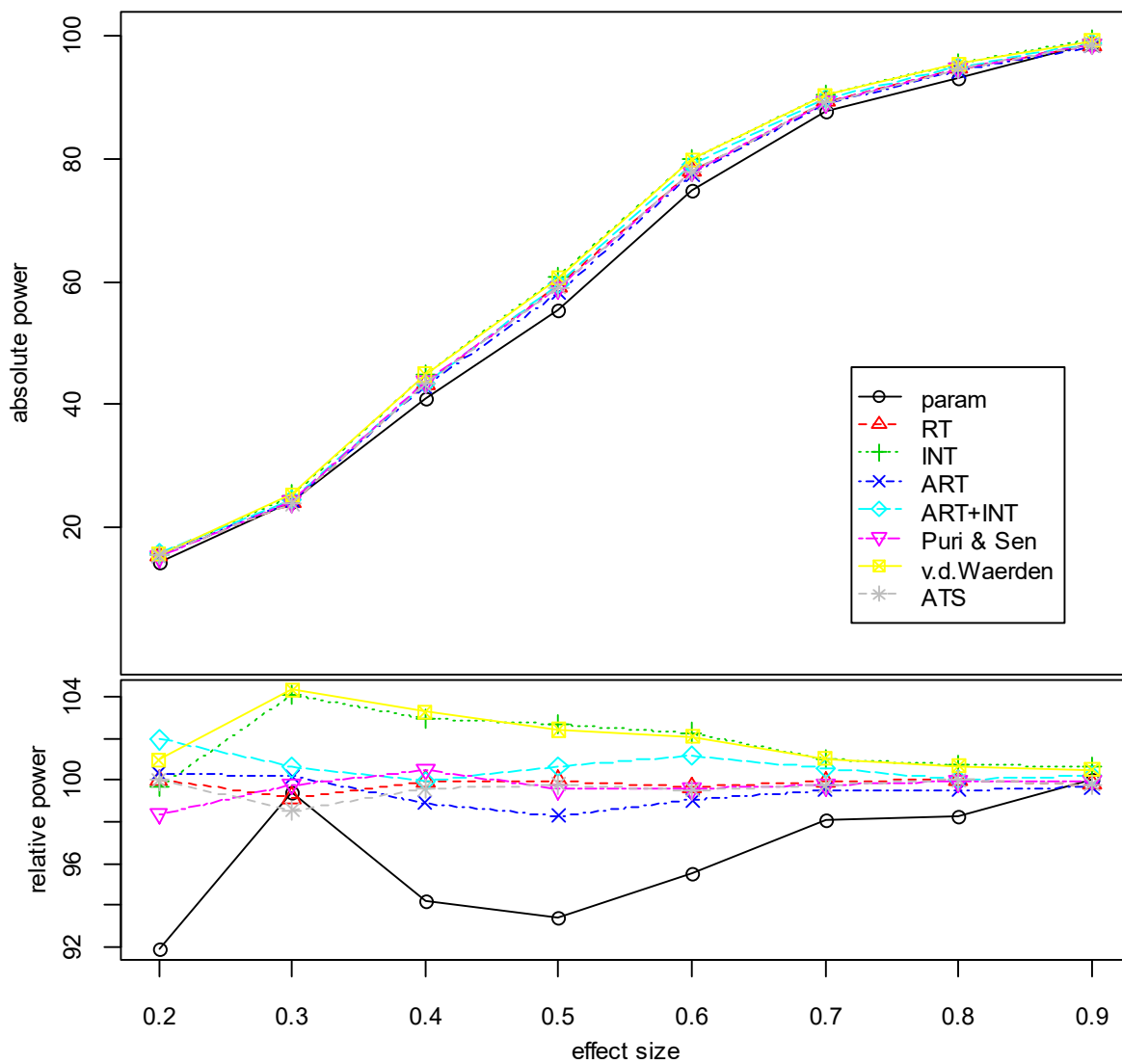
5. 1. 6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	12.25	24.30	39.95	59.05	75.50	88.05	94.95	98.60
RT	11.35	21.10	33.20	49.55	66.45	81.45	89.15	95.55
INT	12.10	22.25	36.55	52.85	69.70	84.20	91.90	97.05
ART	12.75	24.50	36.70	53.10	68.20	83.25	90.55	95.95
ART+INT	10.75	20.70	33.75	49.20	65.65	81.35	89.35	95.55
Puri & Sen	11.05	20.75	33.00	48.90	66.30	81.20	89.15	95.60
v.d.Waerden	12.05	22.45	36.55	52.35	69.60	84.35	91.85	96.90
ATS	11.20	20.90	33.20	49.25	66.40	81.35	89.15	95.55



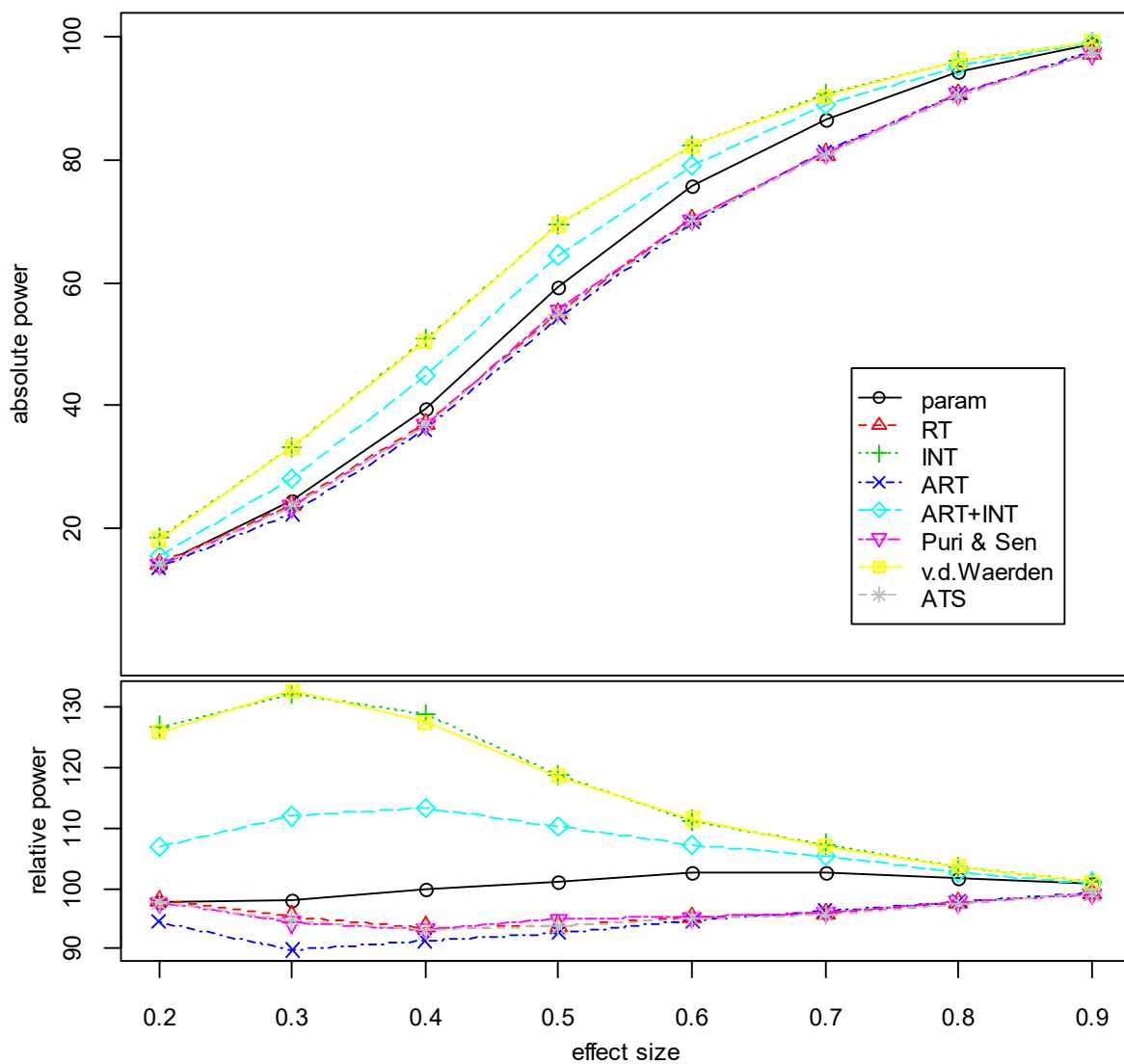
5. 1. 7 lognormal distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	14.20	24.10	40.95	55.25	74.75	87.70	93.15	98.70
RT	15.45	24.05	43.45	59.15	77.95	89.35	94.75	98.50
INT	15.40	25.25	44.75	60.75	80.00	90.30	95.45	99.30
ART	15.50	24.30	43.00	58.15	77.45	89.00	94.30	98.35
ART+INT	15.75	24.40	43.45	59.55	79.15	89.95	94.80	98.90
Puri & Sen	15.20	24.20	43.70	58.90	77.90	89.20	94.70	98.65
v.d.Waerden	15.60	25.30	44.90	60.60	79.85	90.35	95.40	99.20
ATS	15.45	23.90	43.30	59.05	77.85	89.20	94.75	98.50



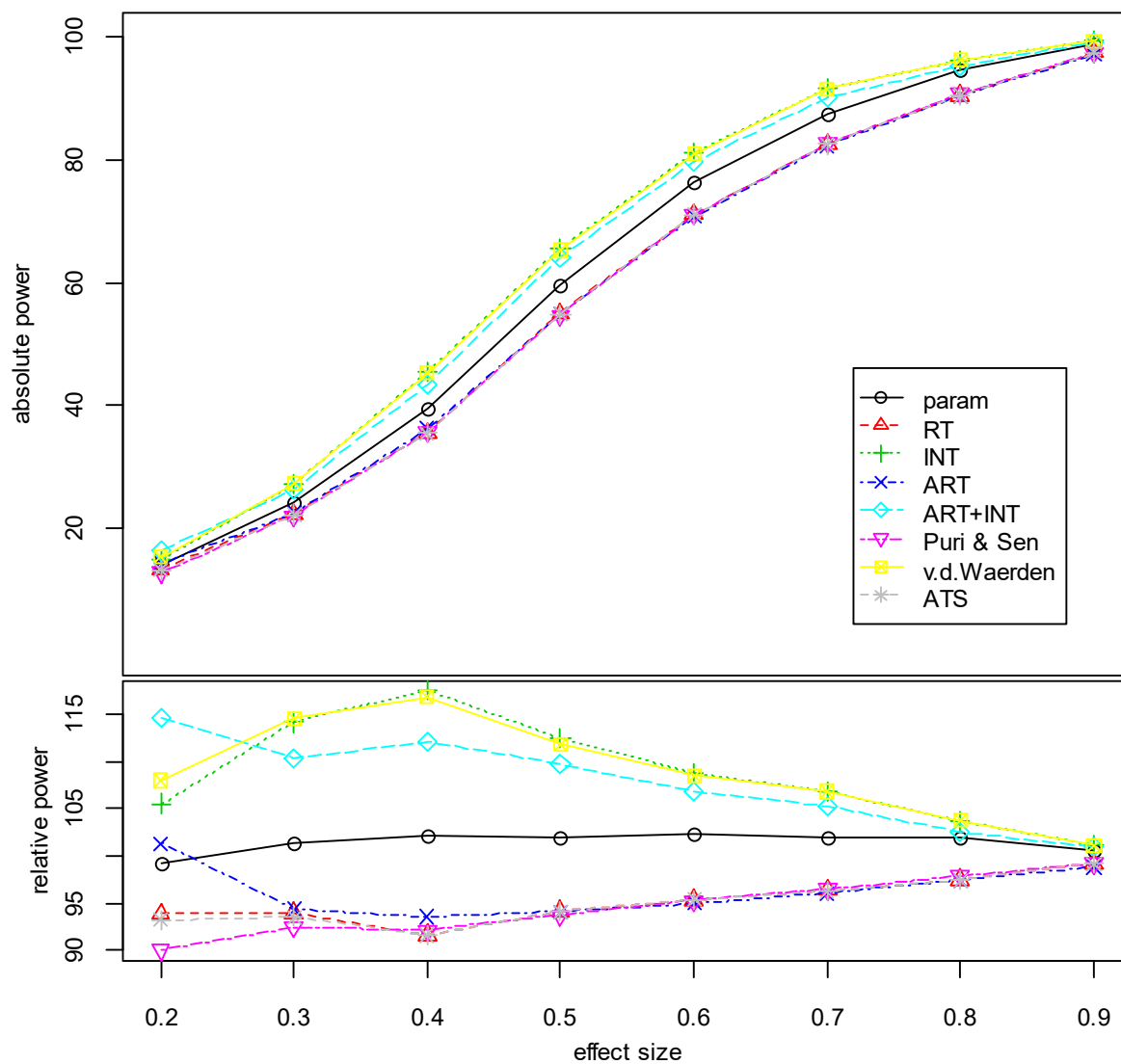
5. 1. 8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	14.15	24.50	39.50	59.25	75.80	86.55	94.45	98.85
RT	14.20	23.85	37.05	54.95	70.25	80.90	90.55	97.40
INT	18.40	33.10	51.00	69.55	82.20	90.65	96.15	99.15
ART	13.70	22.45	36.15	54.25	69.90	81.30	90.80	97.50
ART+INT	15.50	28.00	44.90	64.50	79.10	88.90	95.30	99.10
Puri & Sen	14.15	23.60	36.90	55.55	70.25	81.05	90.70	97.25
v.d.Waerden	18.25	33.20	50.50	69.45	82.30	90.35	96.15	99.15
ATS	14.15	23.70	36.85	54.85	70.15	80.80	90.45	97.35



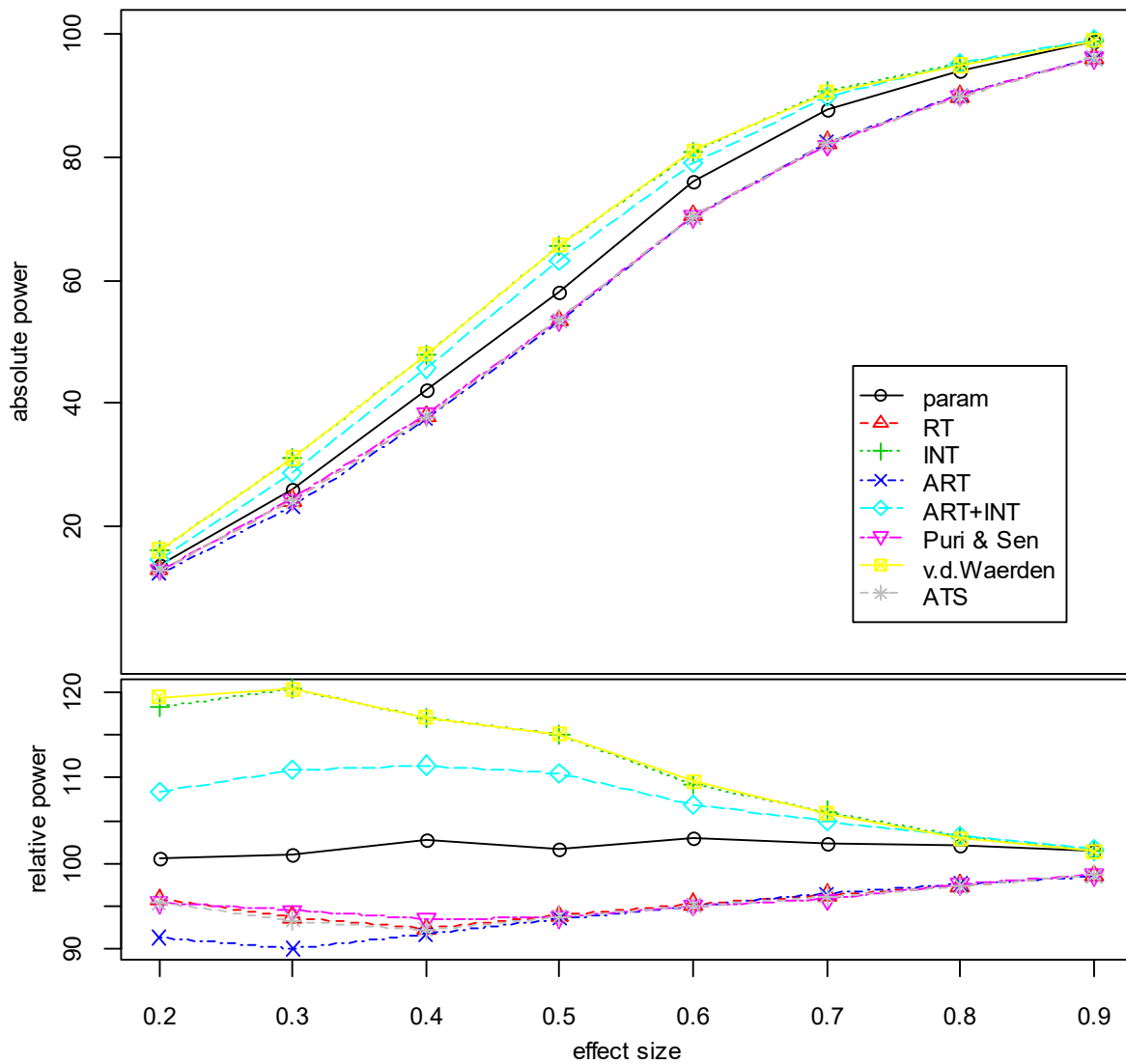
5. 1. 9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	14.10	24.10	39.60	59.50	76.35	87.35	94.60	98.90
RT	13.35	22.35	35.50	54.95	71.10	82.60	90.45	97.45
INT	15.00	27.15	45.50	65.65	81.05	91.55	96.15	99.35
ART	14.40	22.45	36.25	54.90	70.80	82.35	90.40	97.10
ART+INT	16.30	26.25	43.40	64.00	79.60	90.15	95.20	99.15
Puri & Sen	12.80	22.00	35.70	54.65	71.00	82.70	90.85	97.45
v.d.Waerden	15.35	27.25	45.25	65.25	80.90	91.55	96.25	99.35
ATS	13.25	22.25	35.50	54.90	71.10	82.50	90.40	97.45



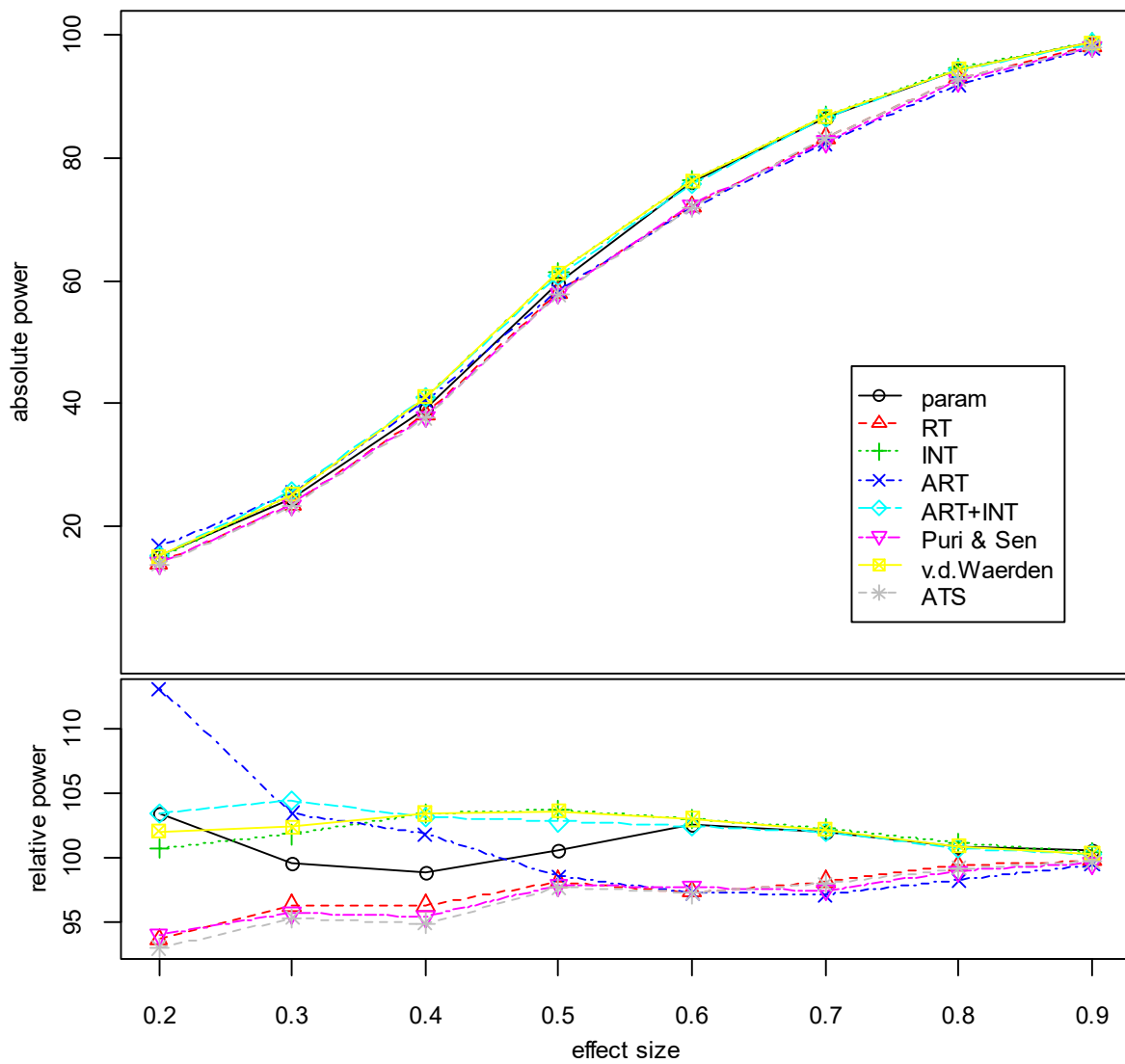
5. 1. 10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.60	26.10	42.10	58.05	76.15	87.60	94.15	98.80
RT	12.95	24.20	37.80	53.55	70.45	82.35	89.85	96.10
INT	16.00	31.10	47.90	65.65	80.75	90.75	95.15	98.95
ART	12.35	23.25	37.55	53.35	70.30	82.45	90.05	96.00
ART+INT	14.65	28.65	45.65	63.10	79.00	89.80	95.15	99.00
Puri & Sen	12.90	24.40	38.25	53.45	70.30	81.90	90.00	96.15
v.d.Waerden	16.15	31.10	47.95	65.70	81.05	90.55	94.95	98.85
ATS	12.90	24.10	37.75	53.50	70.30	82.25	89.85	96.10



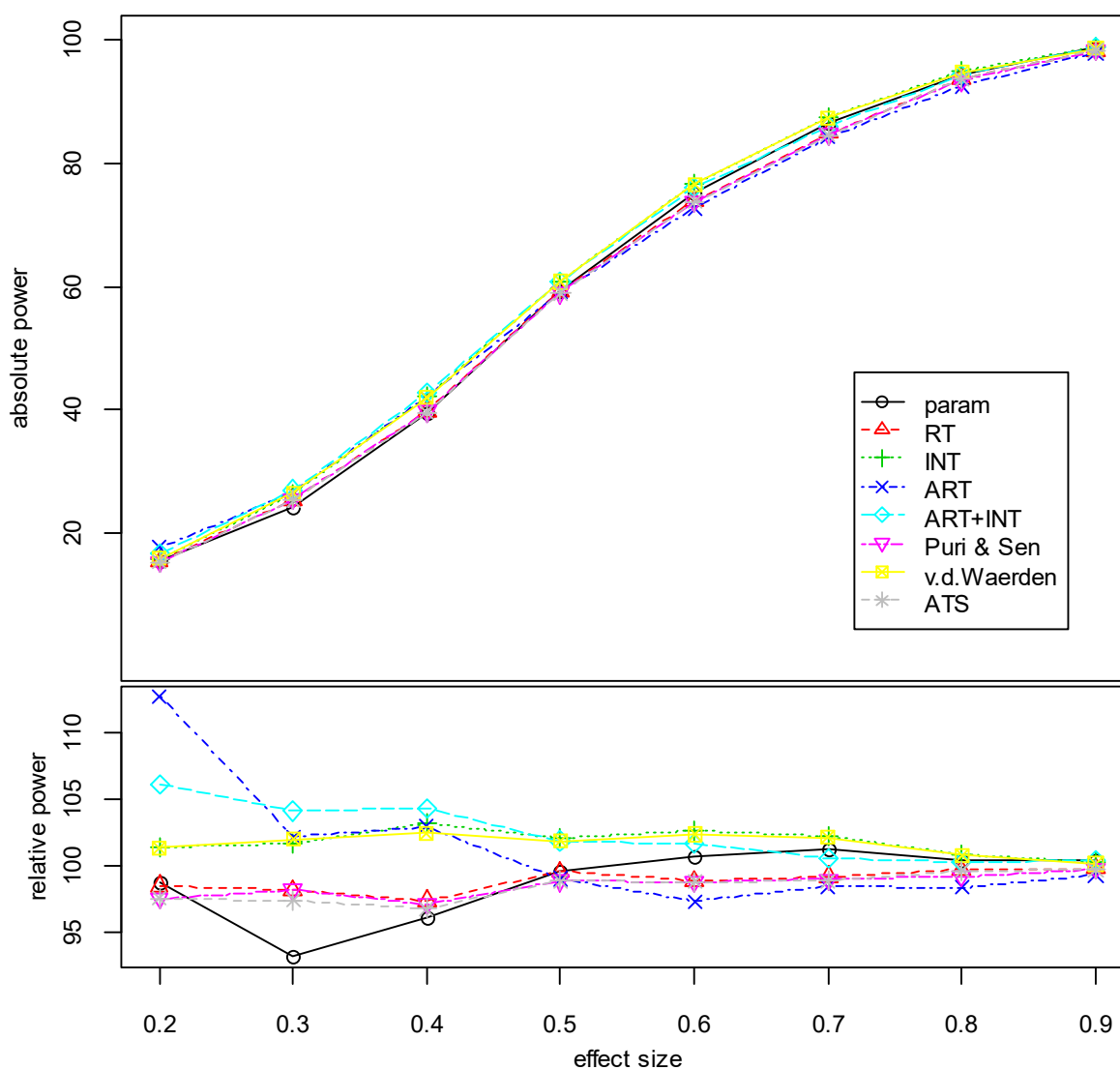
5. 1. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.35	24.45	39.25	59.50	75.90	86.55	94.35	98.95
RT	13.90	23.65	38.25	58.05	72.05	83.25	92.95	98.15
INT	14.95	25.00	41.10	61.35	76.25	86.75	94.60	98.75
ART	16.80	25.40	40.45	58.25	72.00	82.35	91.90	97.85
ART+INT	15.35	25.65	41.00	60.80	75.85	86.50	94.20	98.65
Puri & Sen	13.95	23.50	37.90	57.85	72.35	82.65	92.55	97.95
v.d.Waerden	15.15	25.15	41.10	61.30	76.25	86.70	94.40	98.70
ATS	13.80	23.40	37.70	57.75	71.95	83.10	92.80	98.05



5. 1. 12 left skewed distribution - unequal variances (on A and B)

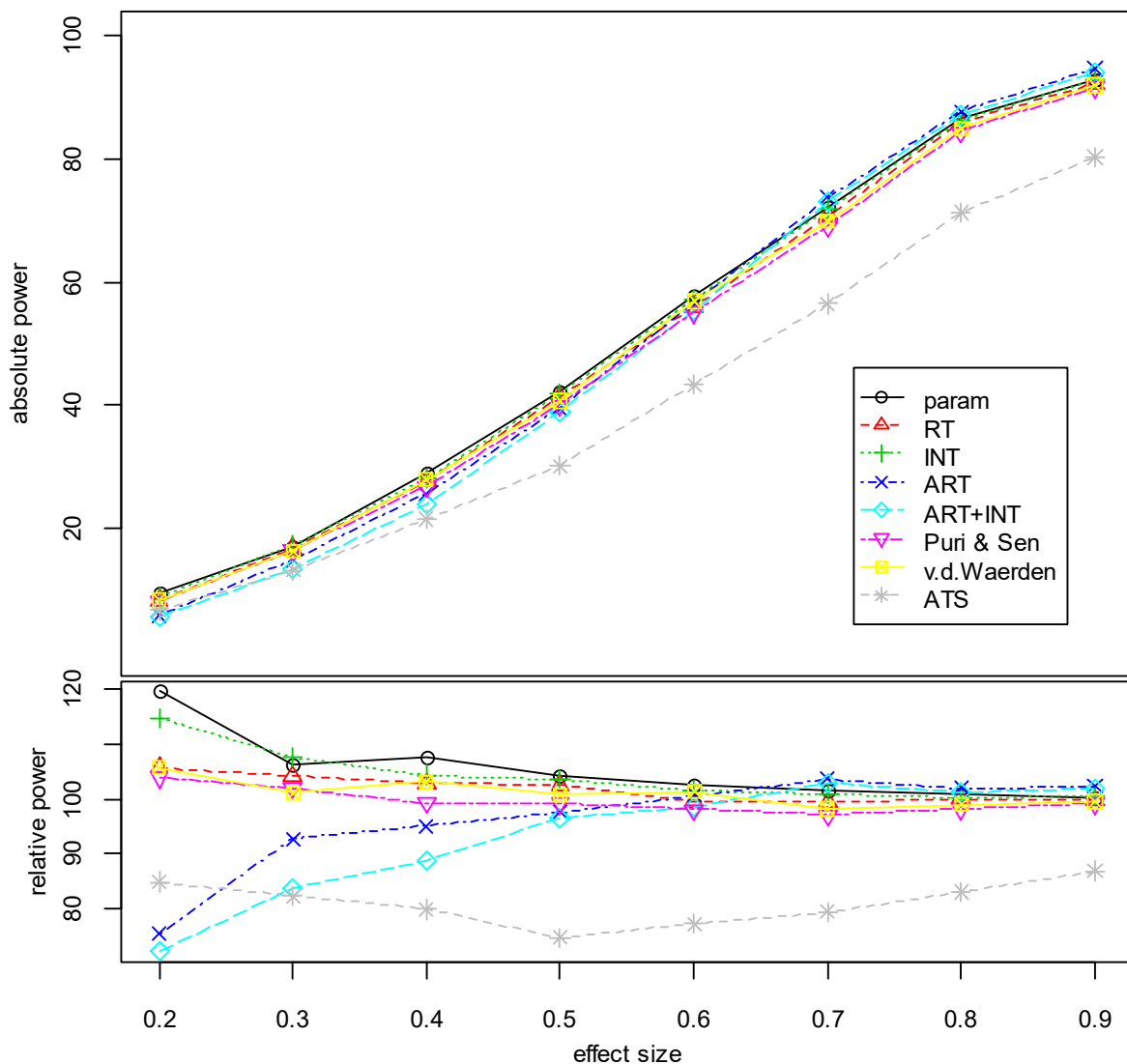
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.55	24.20	39.35	59.35	75.20	86.60	94.45	98.95
RT	15.50	25.50	39.85	59.35	73.85	84.85	93.70	98.30
INT	15.95	26.40	42.25	60.85	76.65	87.45	94.85	98.80
ART	17.75	26.55	42.15	59.05	72.70	84.20	92.50	97.85
ART+INT	16.70	27.05	42.70	60.75	76.00	86.00	94.25	98.90
Puri & Sen	15.35	25.50	39.75	58.95	73.80	84.65	93.30	98.30
v.d.Waerden	15.95	26.50	41.95	60.75	76.50	87.35	94.75	98.65
ATS	15.35	25.30	39.60	58.95	73.80	84.55	93.65	98.20



5. 2. Main effect A (unequal $n_i \sim 5$ / # levels = 4×5)

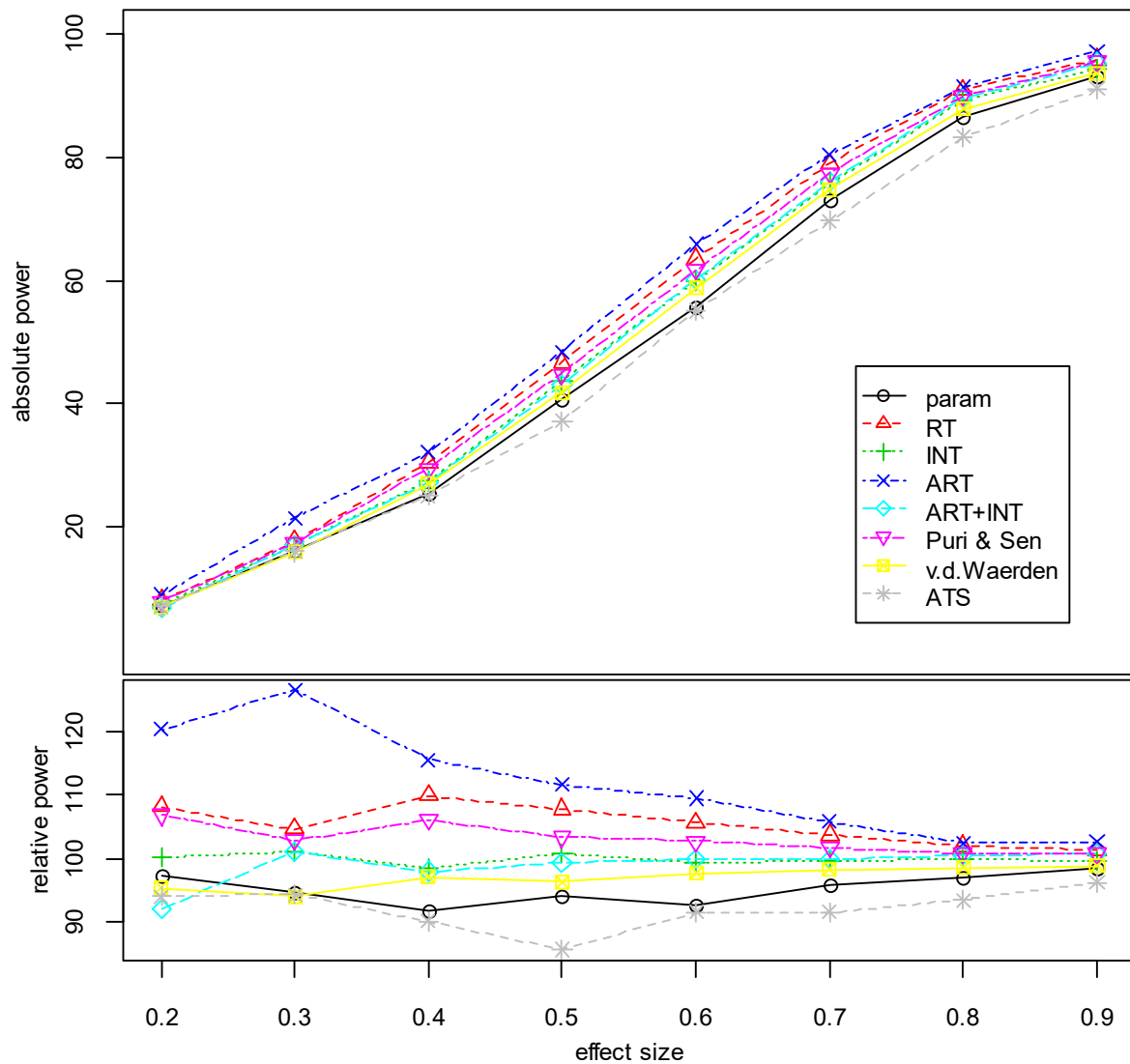
5. 2. 1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.45	17.15	29.05	42.05	57.65	72.20	86.50	92.70
RT	8.35	16.80	27.75	41.40	55.95	70.80	85.85	92.15
INT	9.05	17.35	28.20	41.80	57.05	71.85	86.10	92.85
ART	5.95	14.95	25.65	39.40	56.50	73.75	87.60	94.60
ART+INT	5.70	13.50	23.95	39.00	55.35	73.15	87.00	94.10
Puri & Sen	8.20	16.45	26.80	40.00	55.05	69.05	84.30	91.65
v.d.Waerden	8.35	16.30	27.85	40.70	56.90	69.90	85.00	91.95
ATS	6.70	13.25	21.55	30.15	43.35	56.45	71.25	80.25



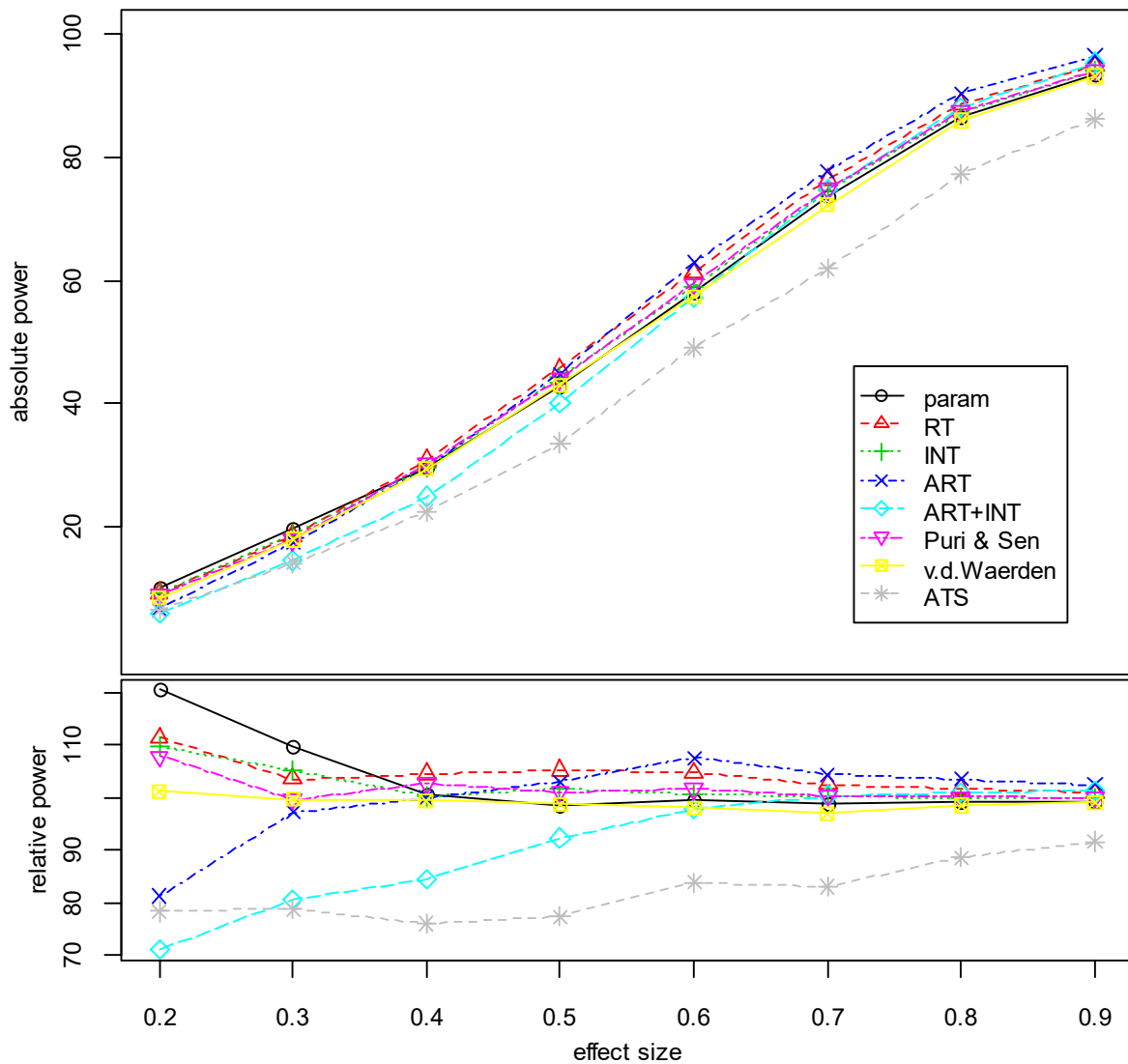
5. 2. 2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.25	16.05	25.55	40.75	55.80	72.95	86.50	93.15
RT	8.05	17.75	30.55	46.75	63.55	78.95	90.90	95.90
INT	7.45	17.15	27.40	43.65	59.75	75.85	89.10	94.25
ART	8.95	21.45	32.10	48.40	65.85	80.50	91.35	97.20
ART+INT	6.85	17.15	27.25	43.10	60.15	76.10	89.55	95.35
Puri & Sen	7.95	17.45	29.50	44.80	61.75	77.45	89.90	95.45
v.d.Waerden	7.10	15.95	27.00	41.80	58.75	74.80	87.85	93.60
ATS	7.00	16.00	25.05	37.15	55.05	69.65	83.30	91.15



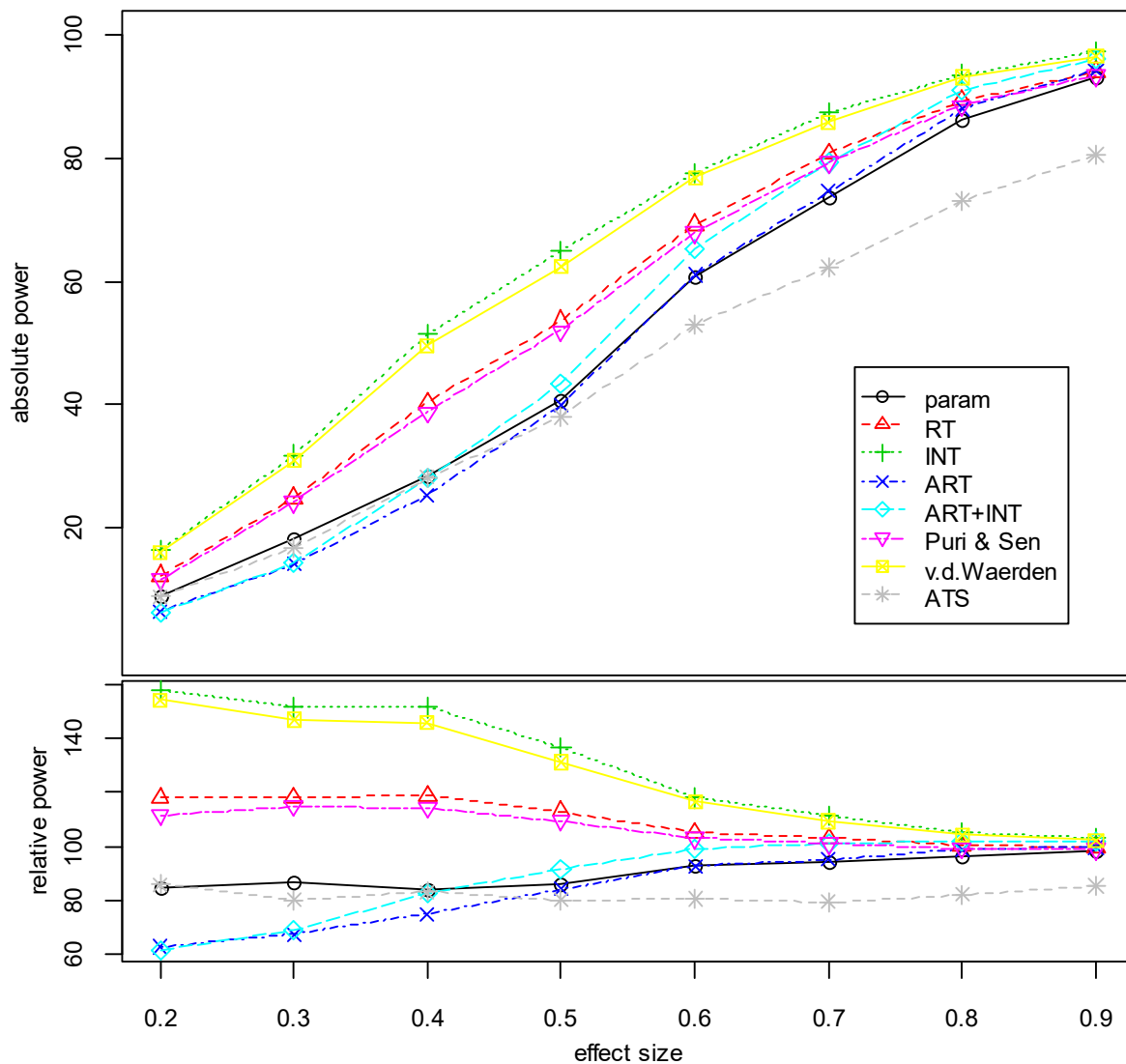
5.2.3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.00	19.70	29.70	42.85	58.20	73.70	86.60	93.30
RT	9.25	18.60	30.85	45.75	61.25	76.35	88.70	94.85
INT	9.10	18.90	29.55	44.20	58.90	74.70	87.10	94.00
ART	6.75	17.45	29.50	44.75	62.85	77.80	90.30	96.40
ART+INT	5.90	14.50	24.95	40.15	57.25	74.80	88.05	95.35
Puri & Sen	8.95	17.90	30.30	43.95	59.45	74.80	87.35	94.10
v.d.Waerden	8.40	17.90	29.35	42.95	57.35	72.30	85.95	93.15
ATS	6.50	14.15	22.45	33.65	49.00	61.85	77.30	86.20



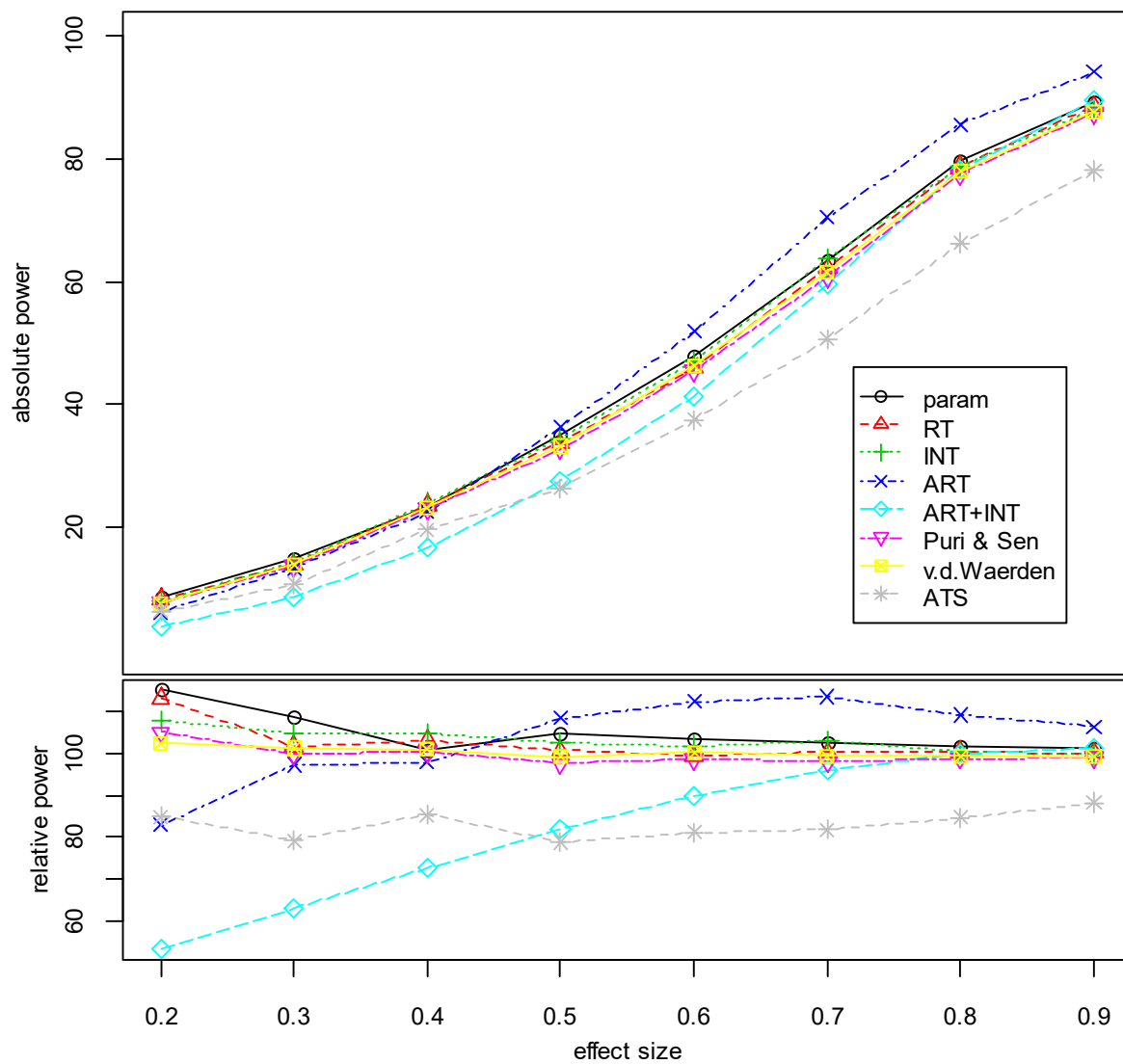
5.2.4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.80	18.25	28.50	40.80	60.90	73.75	86.15	93.05
RT	12.25	24.80	40.35	53.65	69.20	80.80	89.35	94.10
INT	16.40	31.85	51.50	65.05	77.65	87.45	93.55	97.25
ART	6.50	14.10	25.35	39.90	61.05	74.70	88.05	94.20
ART+INT	6.35	14.40	28.00	43.45	65.20	79.20	90.95	96.10
Puri & Sen	11.60	24.15	38.80	51.95	67.90	79.30	88.50	93.40
v.d.Waerden	16.05	30.90	49.55	62.35	76.90	85.85	93.10	96.50
ATS	8.90	16.80	28.20	38.00	52.95	62.25	73.15	80.55



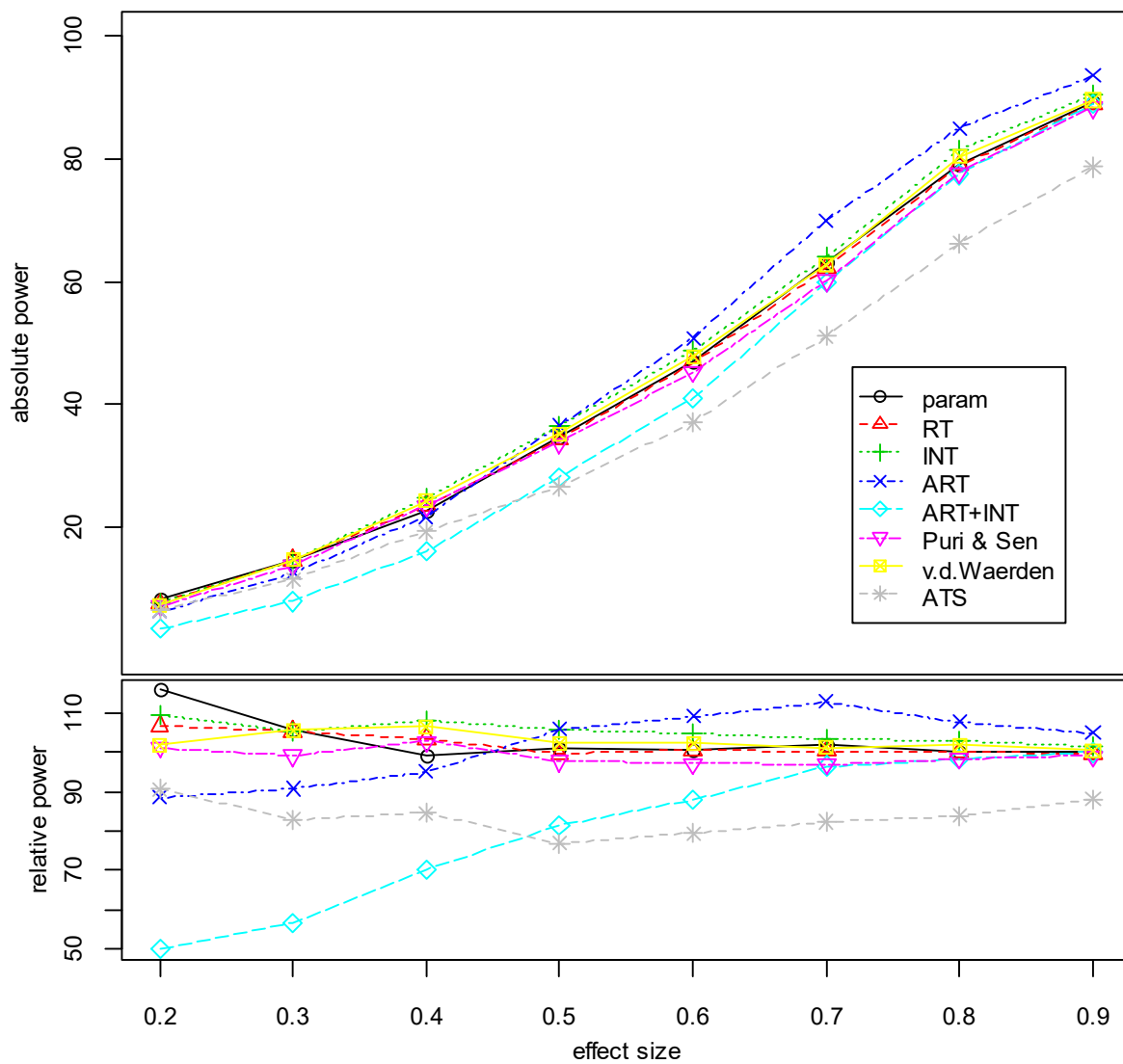
5.2.5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.55	14.95	23.20	35.10	47.75	63.60	79.70	89.30
RT	8.40	13.95	23.70	33.70	45.90	62.15	78.75	88.50
INT	8.00	14.40	24.05	34.30	47.05	63.80	78.65	88.15
ART	6.15	13.35	22.50	36.25	51.90	70.45	85.55	94.10
ART+INT	3.95	8.65	16.70	27.45	41.40	59.45	78.25	89.45
Puri & Sen	7.80	13.70	23.05	32.65	45.50	60.75	77.45	87.45
v.d.Waerden	7.60	13.90	23.20	33.20	46.30	61.60	77.90	87.65
ATS	6.30	10.85	19.60	26.35	37.45	50.70	66.30	78.00



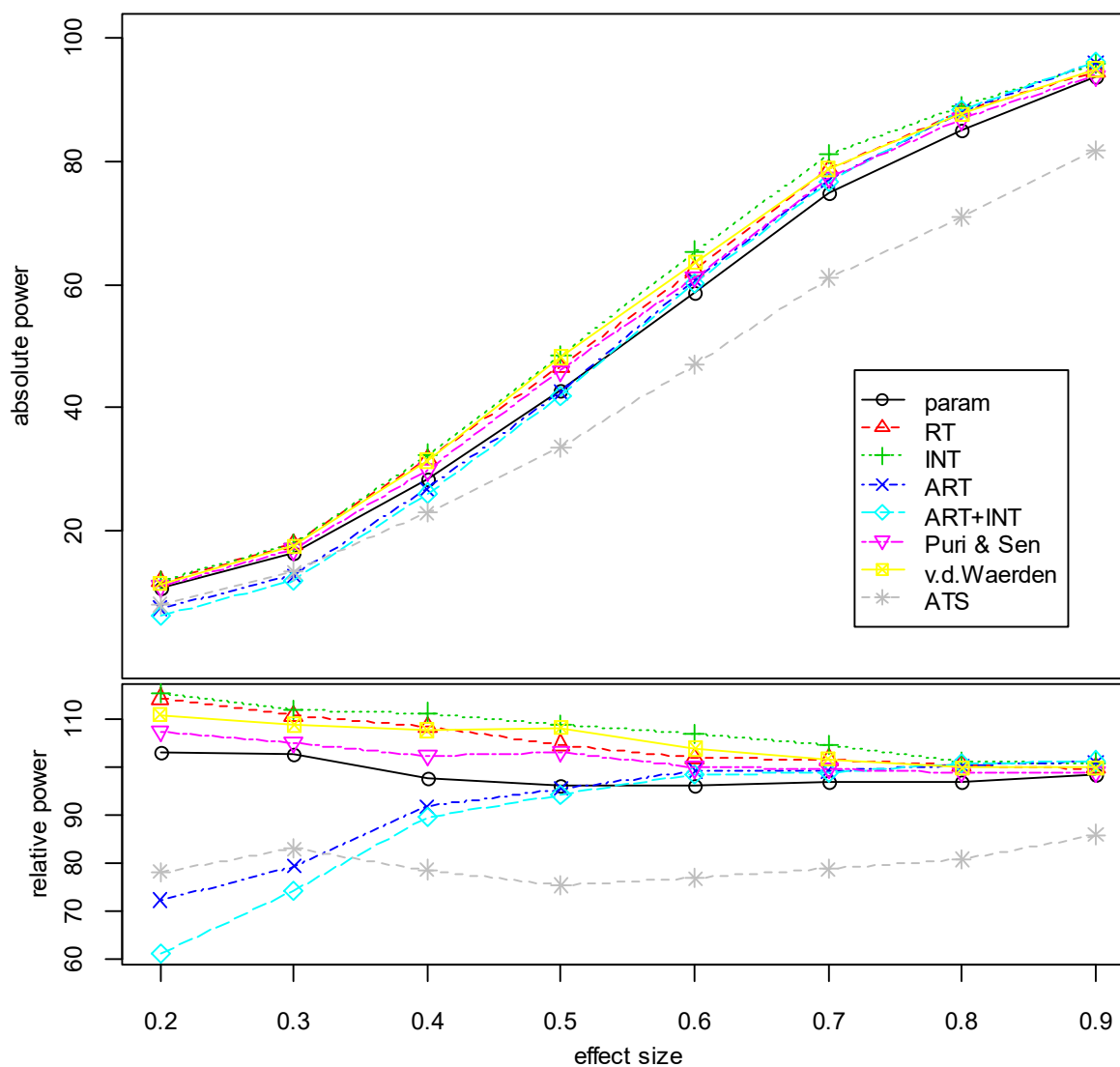
5. 2. 6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.30	14.70	22.70	34.80	46.85	63.30	79.05	89.30
RT	7.65	14.65	23.65	34.30	46.80	62.25	78.85	88.95
INT	7.85	14.65	24.75	36.45	48.90	64.15	81.35	90.55
ART	6.35	12.65	21.75	36.50	50.85	70.00	85.00	93.55
ART+INT	3.60	7.90	16.05	28.15	41.10	59.95	77.40	89.05
Puri & Sen	7.25	13.80	23.50	33.70	45.30	60.15	77.70	88.25
v.d.Waerden	7.30	14.70	24.35	35.25	47.75	62.75	80.35	89.55
ATS	6.50	11.55	19.35	26.55	37.10	51.15	66.25	78.60



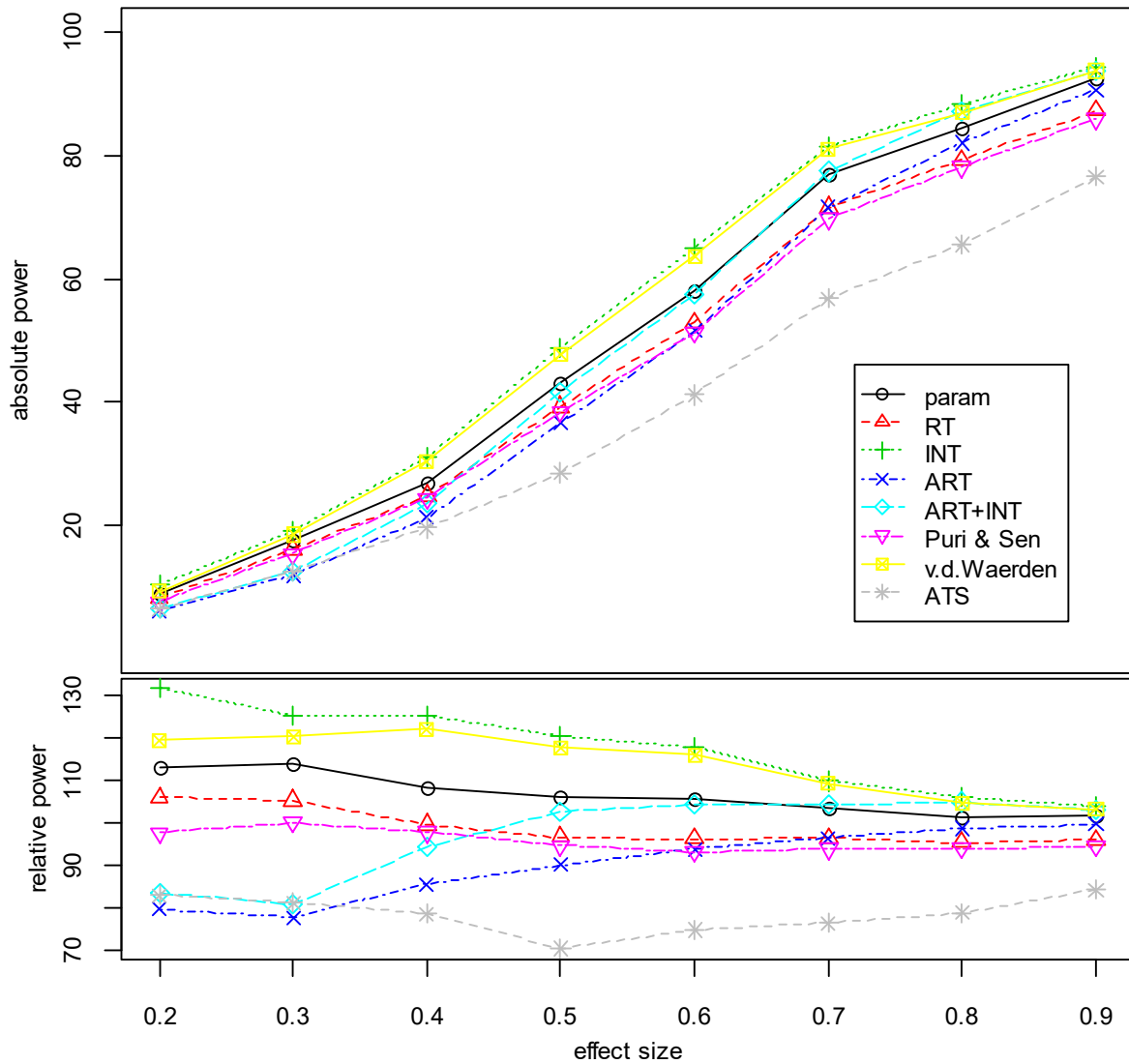
5.2.7 lognormal distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.60	16.55	28.45	42.85	58.75	75.00	84.95	93.65
RT	11.75	17.85	31.60	46.60	62.25	78.70	88.15	94.70
INT	11.85	18.05	32.45	48.50	65.40	81.05	88.90	95.85
ART	7.45	12.80	26.80	42.50	60.70	76.90	88.05	96.00
ART+INT	6.30	12.00	26.15	41.95	60.25	76.60	88.45	96.20
Puri & Sen	11.05	16.95	29.85	45.95	61.10	77.30	86.85	93.90
v.d.Waerden	11.40	17.55	31.40	48.20	63.50	78.75	87.70	94.90
ATS	8.05	13.40	22.95	33.60	47.05	61.05	70.95	81.65



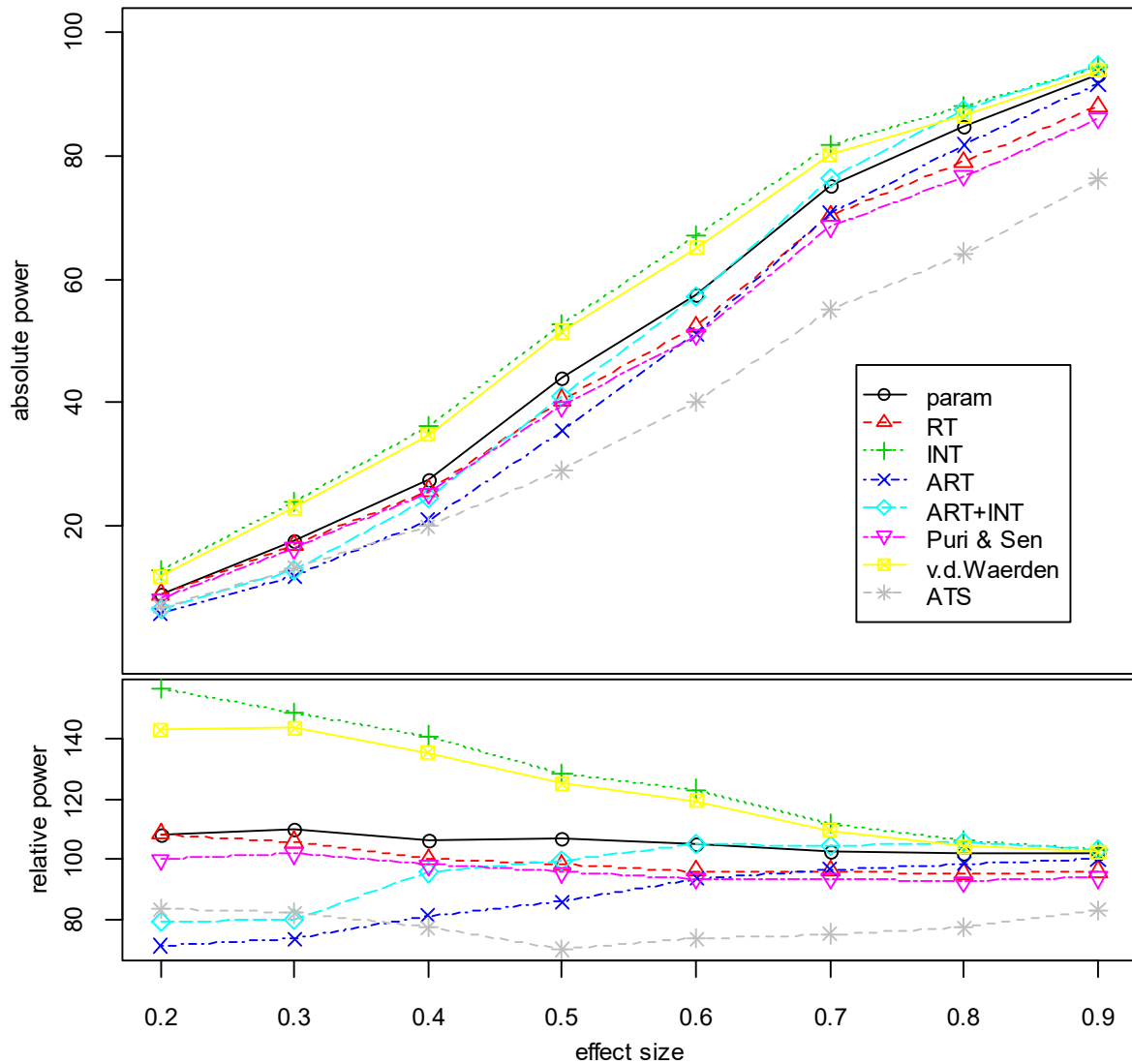
5. 2. 8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.95	17.70	27.40	43.95	57.35	75.15	84.60	93.25
RT	8.95	17.00	25.80	40.40	52.35	70.30	78.95	88.00
INT	12.90	23.85	36.30	52.80	67.05	81.75	88.00	94.45
ART	5.90	11.85	21.00	35.35	51.05	70.65	81.75	91.60
ART+INT	6.55	12.90	24.65	41.05	57.20	76.45	87.45	94.65
Puri & Sen	8.25	16.40	25.30	39.40	51.00	68.50	76.75	86.05
v.d.Waerden	11.80	23.05	34.85	51.50	65.00	80.15	86.40	93.80
ATS	6.90	13.20	19.95	28.90	40.15	55.10	64.20	76.20



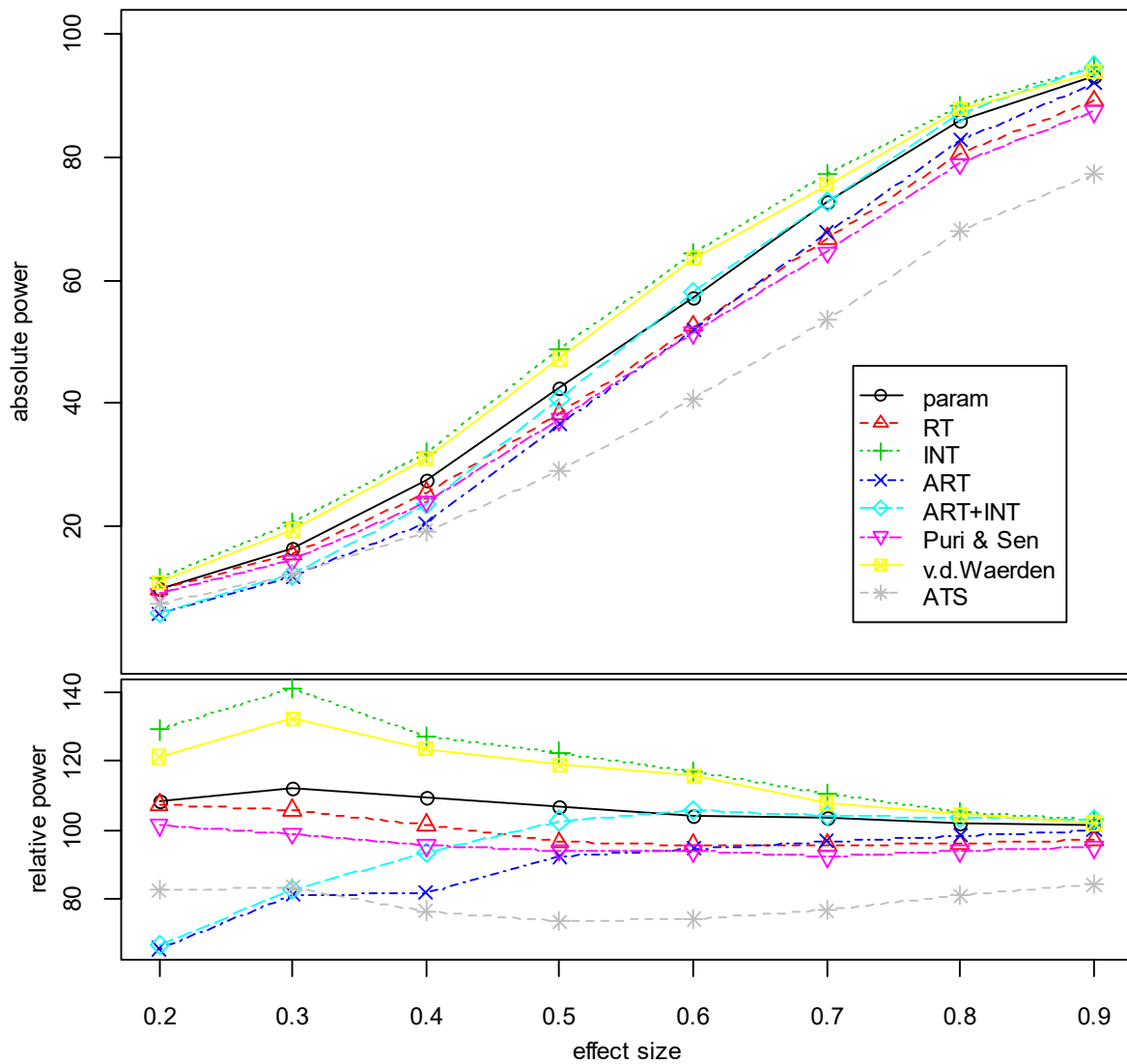
5.2.9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.85	17.50	27.00	43.05	58.15	76.80	84.35	92.40
RT	8.30	16.20	24.85	39.20	52.95	71.60	79.30	87.25
INT	10.30	19.25	31.20	48.75	64.85	81.55	88.30	94.40
ART	6.25	11.95	21.35	36.55	51.60	71.55	82.05	90.60
ART+INT	6.55	12.45	23.55	41.60	57.40	77.40	87.25	93.80
Puri & Sen	7.65	15.40	24.40	38.35	51.25	69.75	78.10	85.85
v.d.Waerden	9.35	18.50	30.40	47.65	63.70	81.10	86.95	93.75
ATS	6.50	12.50	19.60	28.55	41.15	56.80	65.55	76.60



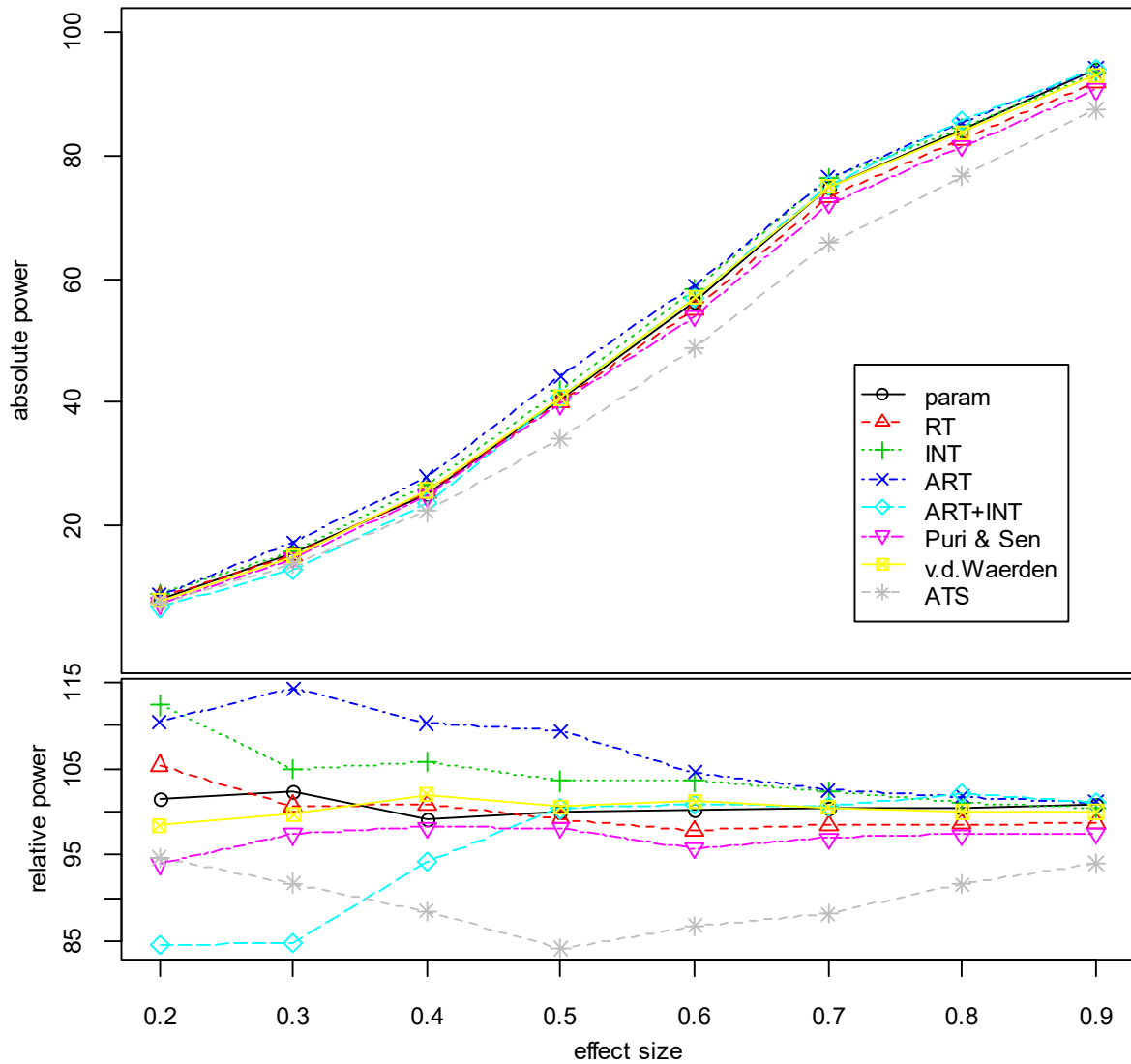
5. 2. 10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.80	16.40	27.50	42.40	57.20	72.70	85.95	93.20
RT	9.70	15.50	25.50	38.30	52.50	66.85	80.60	89.15
INT	11.65	20.65	31.95	48.70	64.25	77.25	88.35	94.65
ART	5.90	11.90	20.55	36.65	51.90	67.75	82.70	92.00
ART+INT	6.00	12.10	23.50	40.80	58.05	72.80	87.25	94.75
Puri & Sen	9.15	14.50	24.00	37.40	51.50	64.55	78.95	87.40
v.d.Waerden	10.95	19.40	31.05	47.30	63.55	75.50	87.80	93.85
ATS	7.45	12.20	19.20	29.10	40.65	53.60	68.00	77.35



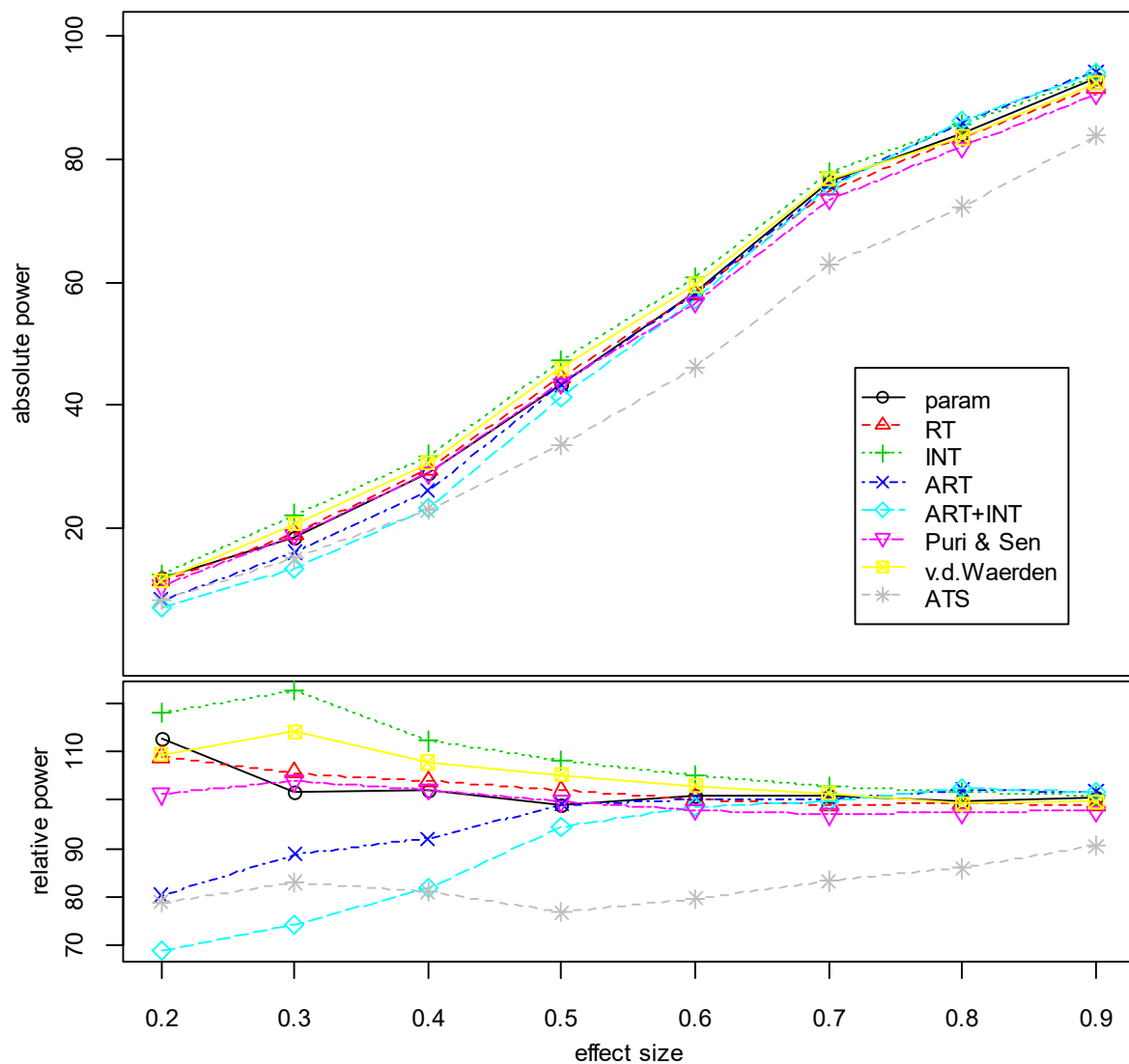
5. 2. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.05	15.45	25.00	40.45	56.40	74.95	84.15	93.90
RT	8.35	15.20	25.40	40.15	55.05	73.40	82.55	91.90
INT	8.90	15.85	26.65	41.90	58.30	76.35	84.55	93.40
ART	8.75	17.25	27.80	44.25	58.85	76.40	85.25	94.10
ART+INT	6.70	12.80	23.75	40.60	56.80	75.05	85.60	93.95
Puri & Sen	7.45	14.70	24.75	39.70	53.95	72.25	81.50	90.75
v.d.Waerden	7.80	15.05	25.70	40.70	57.00	74.90	83.75	93.05
ATS	7.50	13.85	22.30	34.05	48.85	65.75	76.70	87.45



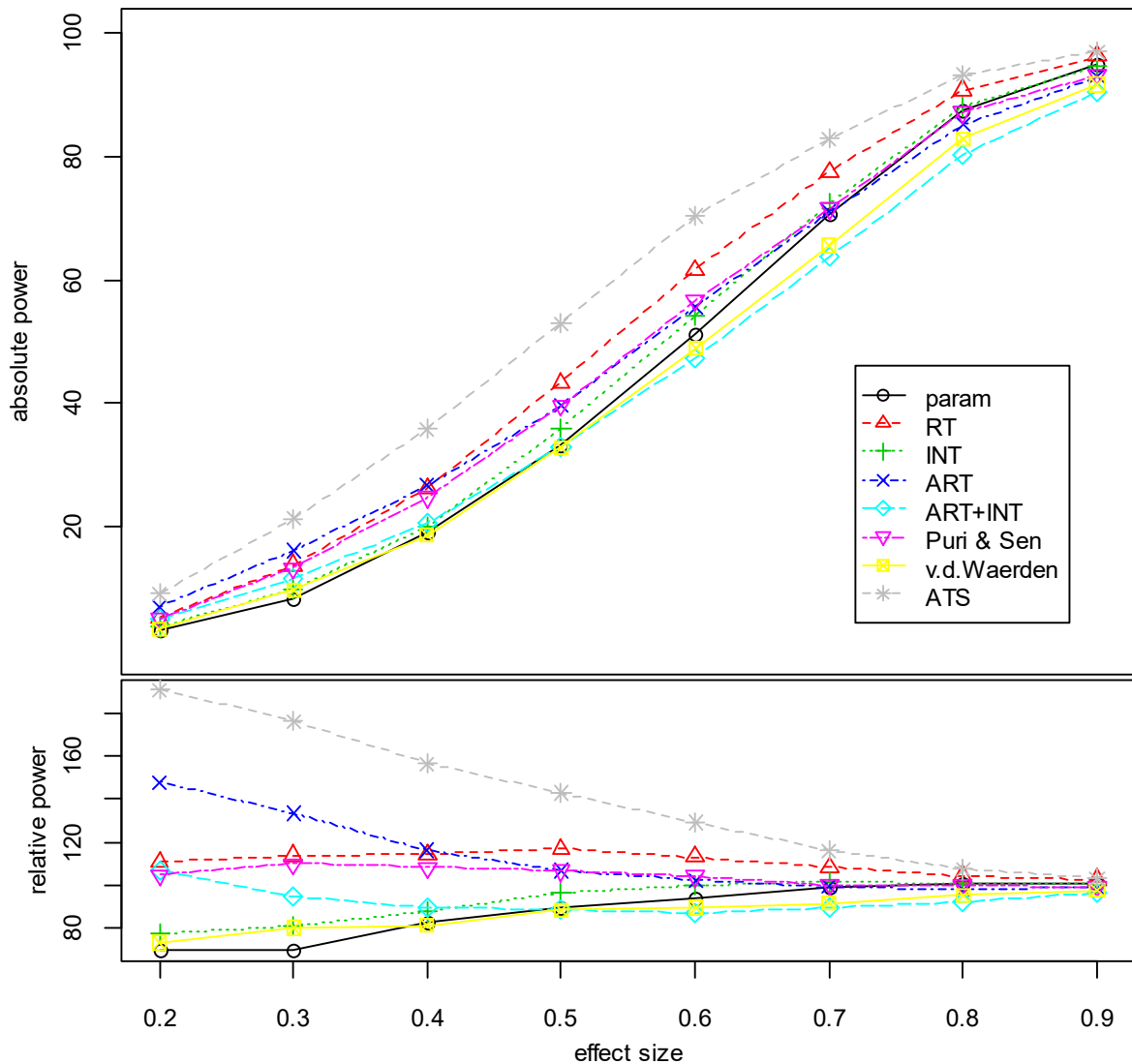
5. 2. 12 left skewed distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.85	18.45	28.95	43.35	58.30	76.40	84.05	93.00
RT	11.45	19.20	29.50	44.55	58.00	75.00	83.50	91.65
INT	12.40	22.25	31.85	47.20	60.80	77.80	85.50	93.55
ART	8.45	16.15	26.15	43.30	58.00	75.85	85.85	94.25
ART+INT	7.25	13.50	23.25	41.25	57.15	75.40	86.25	94.10
Puri & Sen	10.65	18.90	29.00	43.60	56.70	73.50	81.90	90.50
v.d.Waerden	11.50	20.75	30.60	45.95	59.60	76.70	83.55	92.30
ATS	8.30	15.10	23.05	33.60	46.15	63.00	72.30	83.85



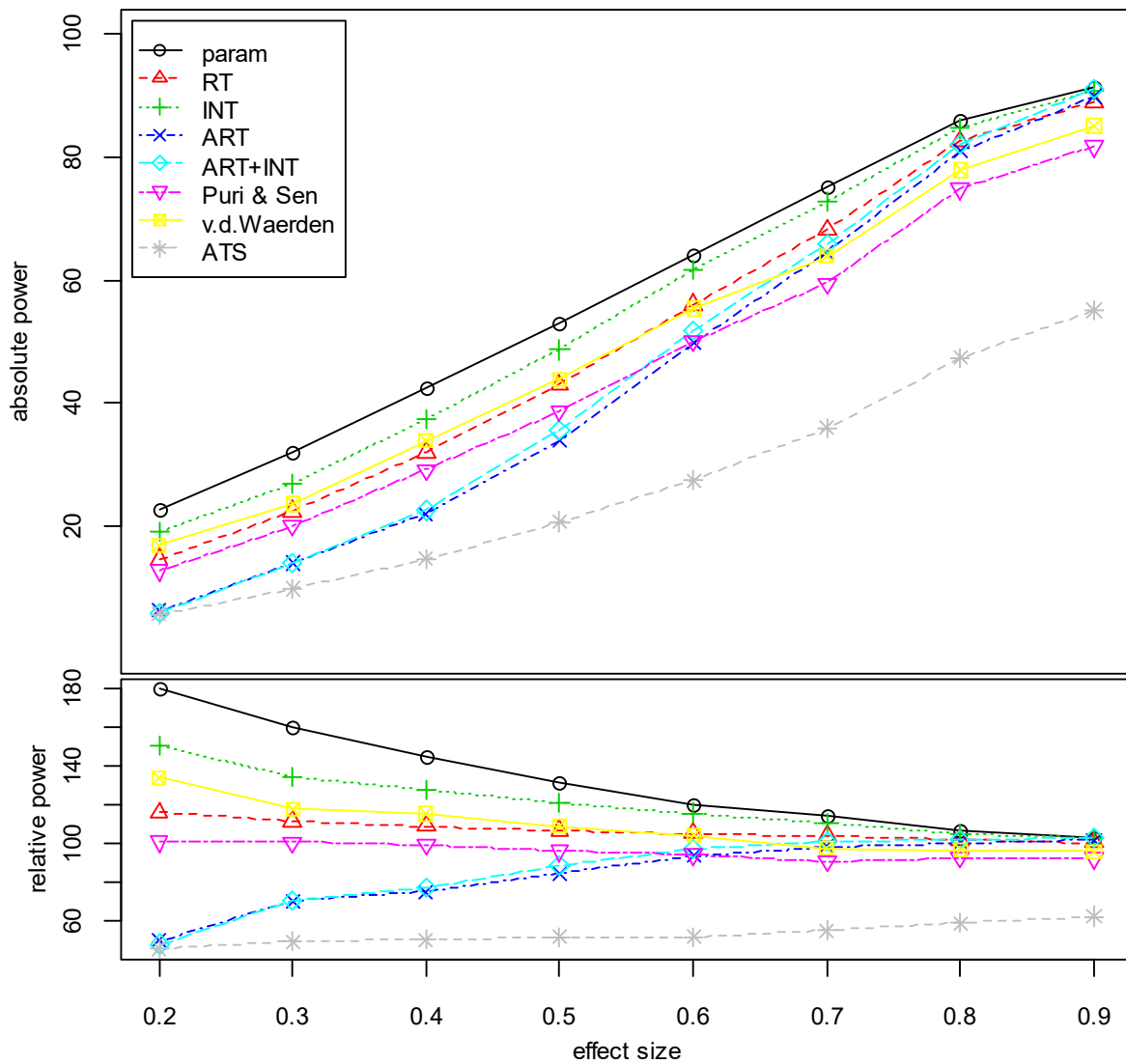
5. 2. 13 normal distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	3.35	8.45	19.05	33.20	51.30	70.80	87.45	94.90
RT	5.00	13.25	26.05	41.95	60.50	77.55	90.60	96.30
INT	3.55	9.70	20.55	35.80	54.15	72.40	87.95	95.15
ART	8.00	18.05	30.80	47.05	64.20	79.45	91.15	96.25
ART+INT	5.80	13.15	24.75	38.95	56.35	72.95	87.75	94.45
Puri & Sen	4.90	12.85	25.75	41.95	61.40	77.80	90.75	96.45
v.d.Waerden	3.65	9.95	20.85	36.45	54.65	72.45	88.25	95.15
ATS	8.40	20.05	34.25	50.55	68.50	81.50	92.20	96.50



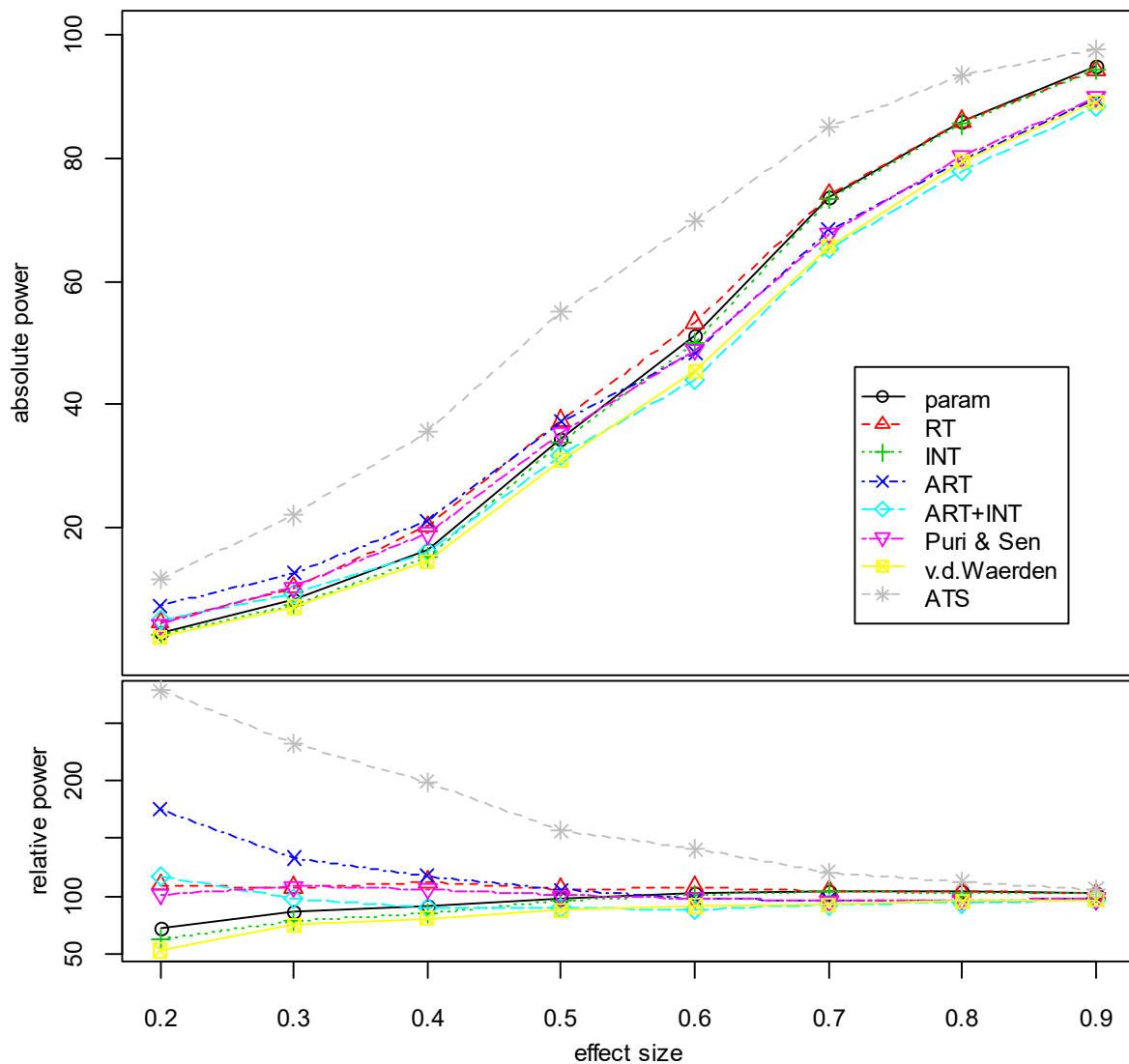
5. 2. 14 normal distribution - unequal variances (small n_i - large s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	22.75	32.10	42.60	52.90	64.15	75.25	85.85	91.45
RT	14.45	22.85	32.90	45.70	57.95	69.70	84.20	90.40
INT	19.15	27.15	38.20	49.30	62.00	73.25	85.20	90.95
ART	6.50	15.55	25.75	39.25	55.70	71.95	86.05	93.75
ART+INT	6.60	15.80	26.85	41.55	57.80	73.40	87.85	94.35
Puri & Sen	13.25	21.55	31.10	43.60	56.05	67.70	81.55	88.75
v.d.Waerden	17.55	24.75	35.70	47.35	59.65	70.15	82.70	89.20
ATS	5.90	10.10	14.95	21.35	29.15	37.50	51.10	58.25



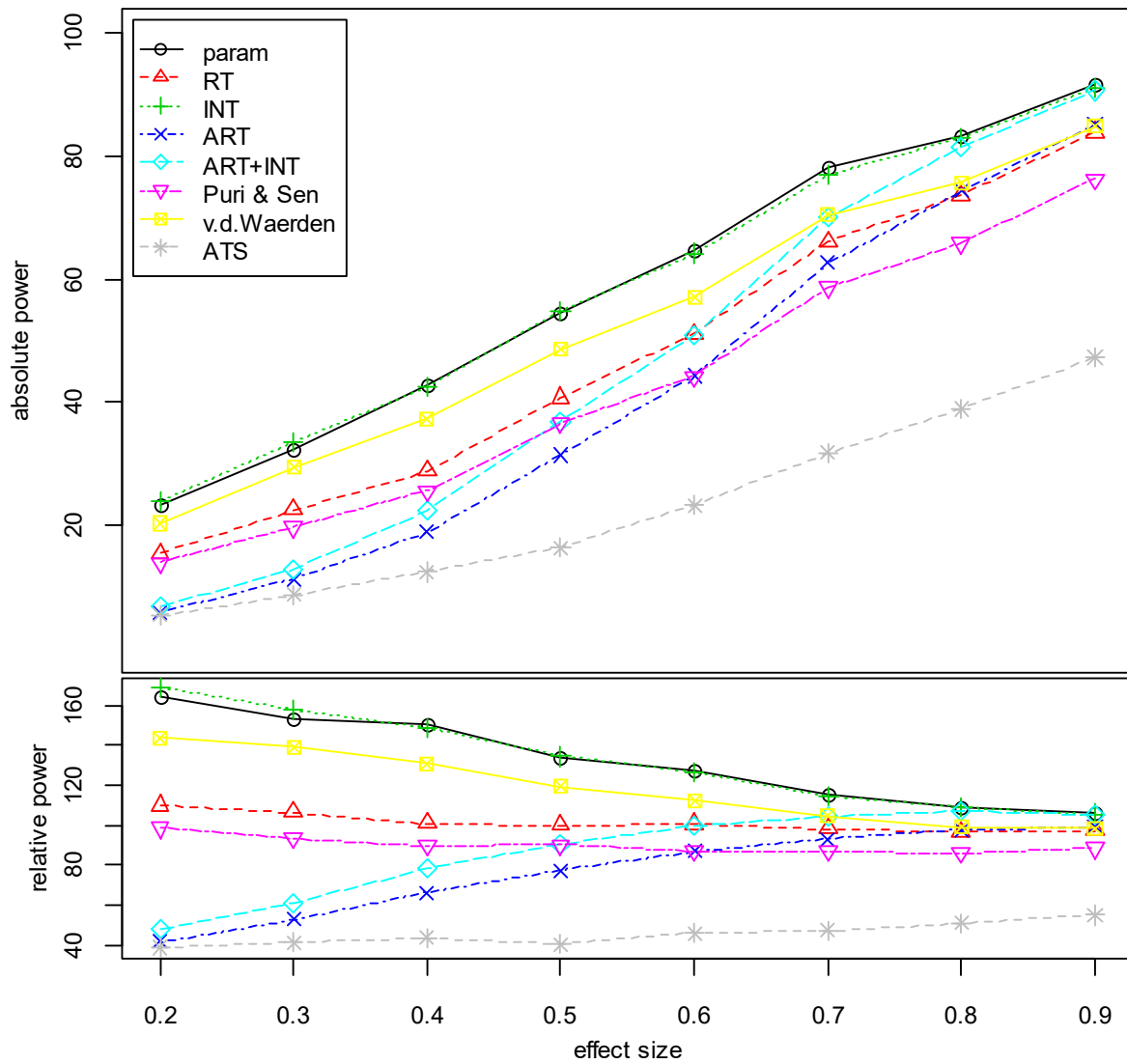
5. 2. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	3.05	8.25	16.40	34.40	51.30	73.65	86.00	95.00
RT	4.25	10.45	20.25	37.40	53.30	75.00	85.35	93.80
INT	3.00	7.95	16.45	35.90	51.90	75.50	86.50	94.75
ART	8.10	14.30	24.90	43.10	56.15	75.00	87.10	93.95
ART+INT	5.05	10.85	19.20	37.30	51.10	72.40	86.00	93.40
Puri & Sen	4.00	11.00	20.35	37.95	53.90	74.30	85.20	94.25
v.d.Waerden	2.55	8.10	16.30	36.20	52.50	75.80	87.15	94.80
ATS	11.25	21.80	35.50	54.30	68.40	84.10	91.85	96.90



5. 2. 16 left skewed distribution - unequal variances (small n_i - large s_j)

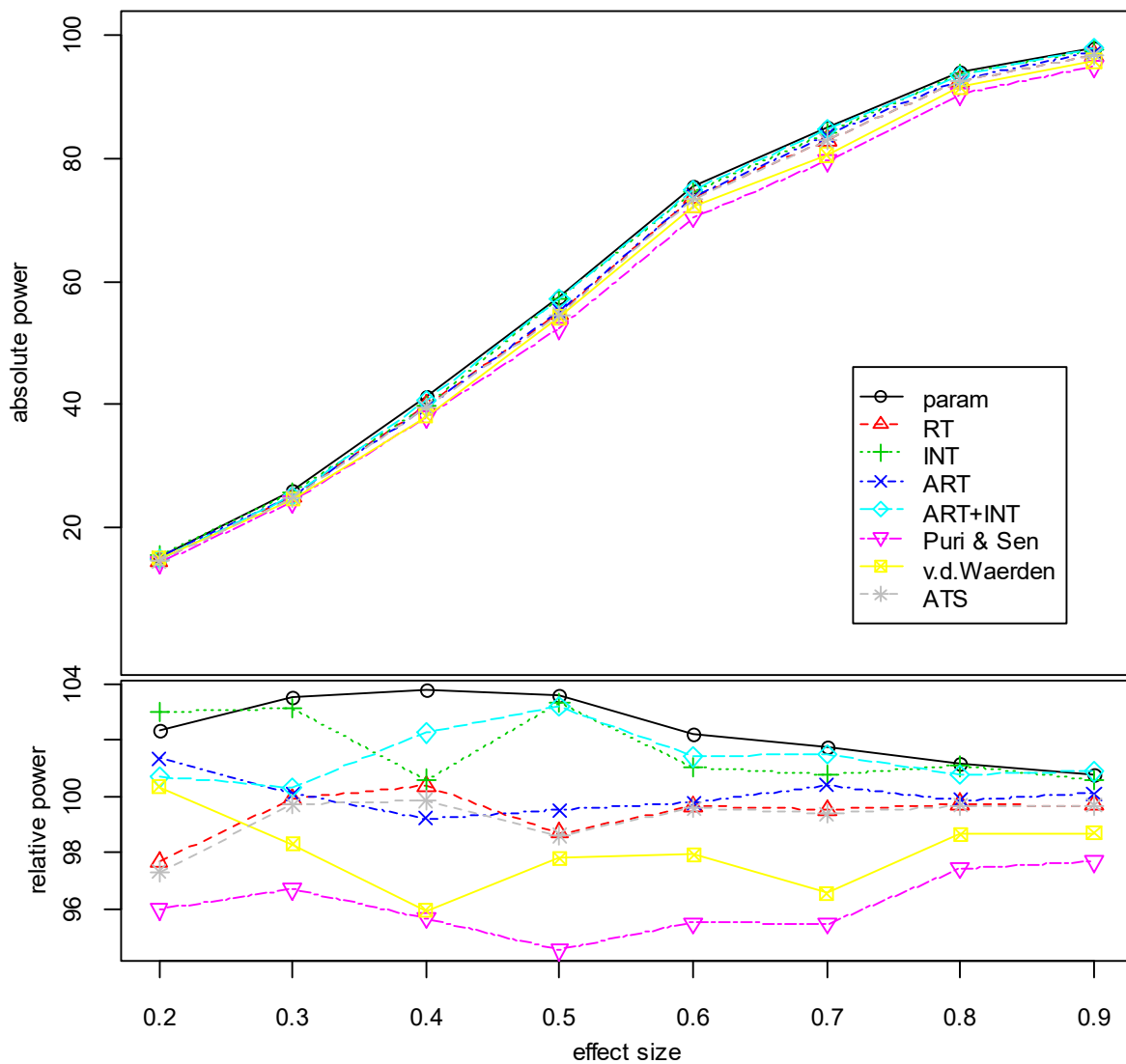
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	23.20	32.40	42.90	54.35	64.65	78.00	83.35	91.70
RT	16.05	22.95	31.10	42.55	53.05	68.05	75.35	85.05
INT	24.65	34.10	43.80	55.40	65.65	79.25	84.15	91.95
ART	6.65	13.40	21.70	35.60	51.70	69.75	81.30	90.55
ART+INT	7.55	15.45	26.50	42.90	58.70	77.05	86.75	94.70
Puri & Sen	14.70	21.05	28.60	39.65	50.00	65.10	72.40	82.65
v.d.Waerden	21.50	31.40	40.40	52.45	61.80	75.95	81.40	89.70
ATS	5.55	8.50	13.25	16.40	23.15	32.10	39.70	47.70



5.3. Main effect A - B significant (equal $n_i=10$ / # levels = $2*4$)

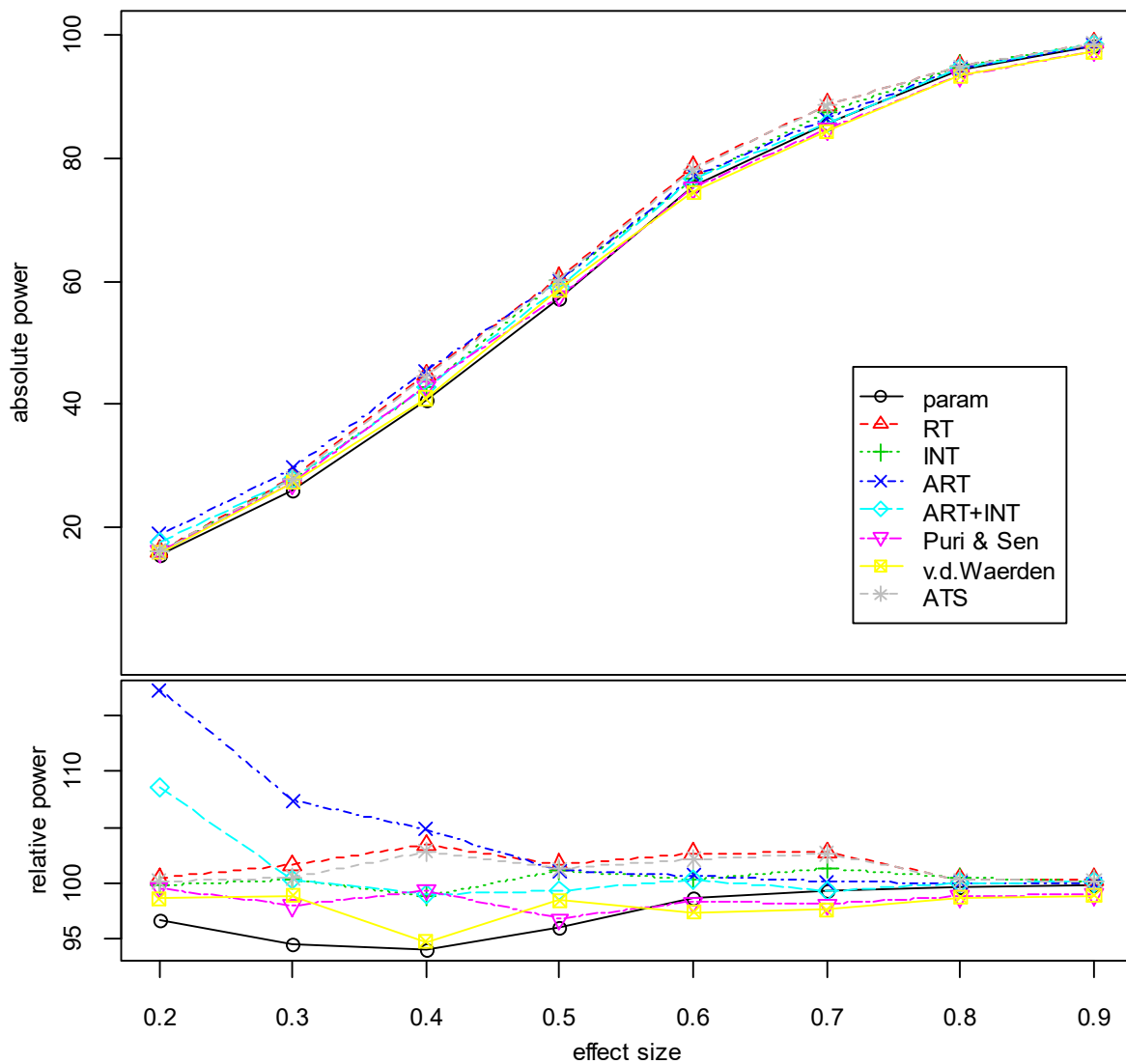
5.3.1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.30	25.90	41.15	57.35	75.45	84.90	93.90	97.85
RT	14.60	25.00	39.80	54.65	73.55	83.00	92.55	96.80
INT	15.40	25.80	39.90	57.20	74.60	84.05	93.80	97.65
ART	15.15	25.05	39.35	55.10	73.65	83.75	92.70	97.20
ART+INT	15.05	25.10	40.55	57.15	74.85	84.65	93.50	97.95
Puri & Sen	14.35	24.20	37.95	52.35	70.50	79.65	90.45	94.85
v.d.Waerden	15.00	24.60	38.05	54.15	72.30	80.55	91.55	95.85
ATS	14.55	24.95	39.60	54.60	73.50	82.90	92.50	96.80



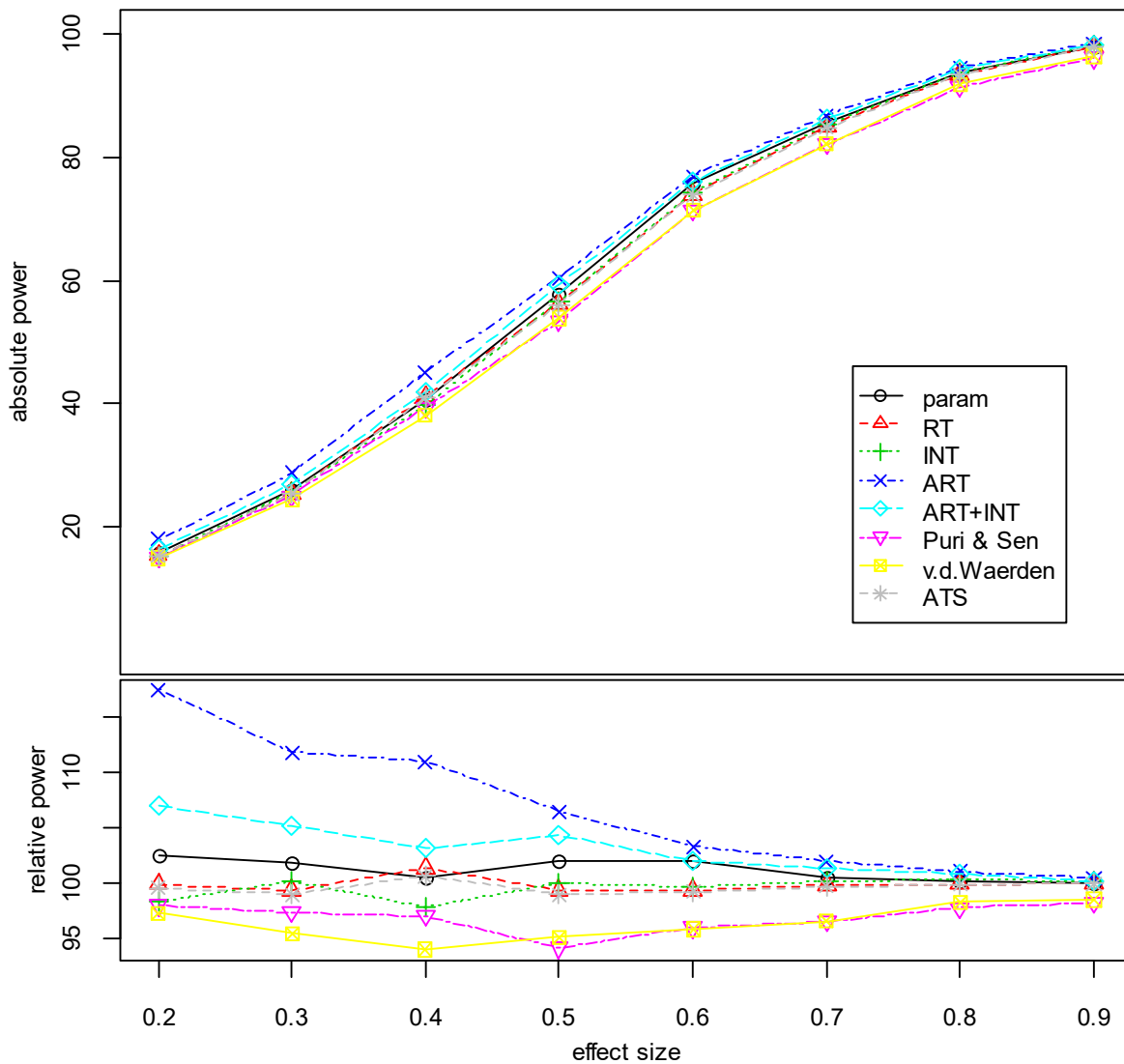
5.3.2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.60	26.15	40.70	57.15	75.50	85.70	94.20	98.10
RT	16.20	28.10	44.75	60.45	78.50	88.70	94.90	98.65
INT	16.10	27.75	42.75	60.15	76.70	87.45	95.05	98.55
ART	18.90	29.70	45.35	60.10	77.00	86.40	94.55	98.25
ART+INT	17.50	27.75	42.85	59.05	76.70	85.75	94.60	98.40
Puri & Sen	16.05	27.10	43.00	57.55	75.15	84.70	93.45	97.35
v.d.Waerden	15.90	27.35	41.00	58.55	74.50	84.30	93.30	97.20
ATS	16.15	27.80	44.50	60.20	78.10	88.60	94.80	98.55



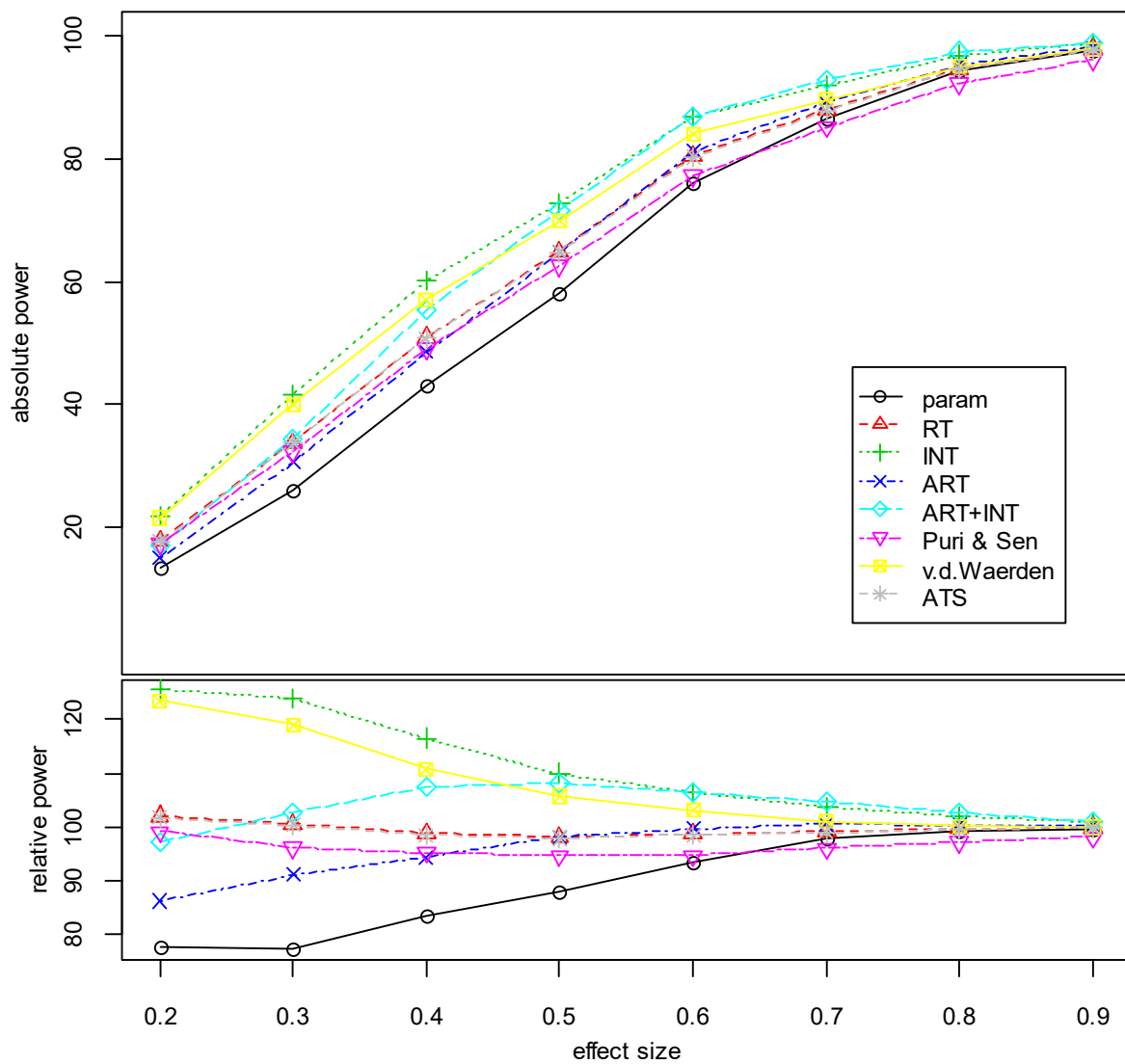
5.3.3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.75	26.15	40.80	57.85	75.85	85.55	93.70	98.00
RT	15.35	25.50	41.15	56.30	73.95	85.00	93.40	97.95
INT	15.10	25.70	39.70	56.65	74.20	85.25	93.75	98.15
ART	18.05	28.70	45.05	60.35	76.85	86.75	94.50	98.40
ART+INT	16.45	27.00	41.90	59.15	75.95	86.20	94.20	98.15
Puri & Sen	15.05	25.00	39.40	53.35	71.40	82.15	91.40	96.15
v.d.Waerden	14.95	24.50	38.15	53.90	71.30	82.15	91.85	96.45
ATS	15.30	25.40	40.85	56.10	73.85	84.85	93.35	97.90



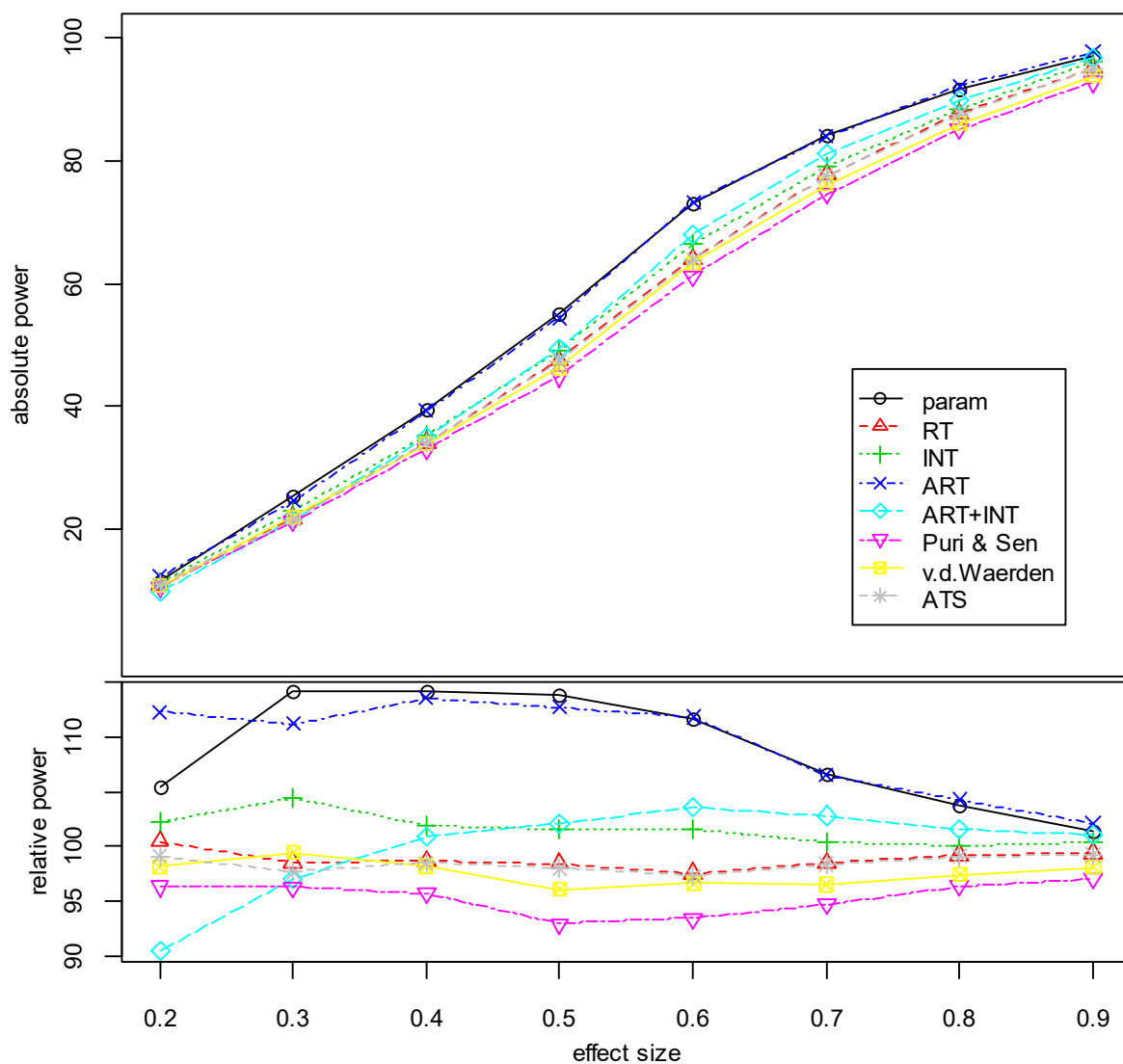
5.3.4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.55	25.95	43.05	58.20	76.05	86.65	94.35	97.65
RT	17.80	33.75	50.90	64.85	80.45	88.00	94.70	97.90
INT	21.90	41.60	60.05	72.70	86.80	91.95	96.85	98.75
ART	15.05	30.60	48.60	64.80	81.25	89.15	95.30	98.15
ART+INT	16.95	34.50	55.35	71.45	86.75	92.80	97.45	98.90
Puri & Sen	17.30	32.25	49.10	62.55	77.20	85.15	92.20	96.05
v.d.Waerden	21.55	39.95	57.10	69.90	84.05	89.60	95.05	97.85
ATS	17.75	33.70	50.75	64.70	80.25	87.80	94.55	97.70



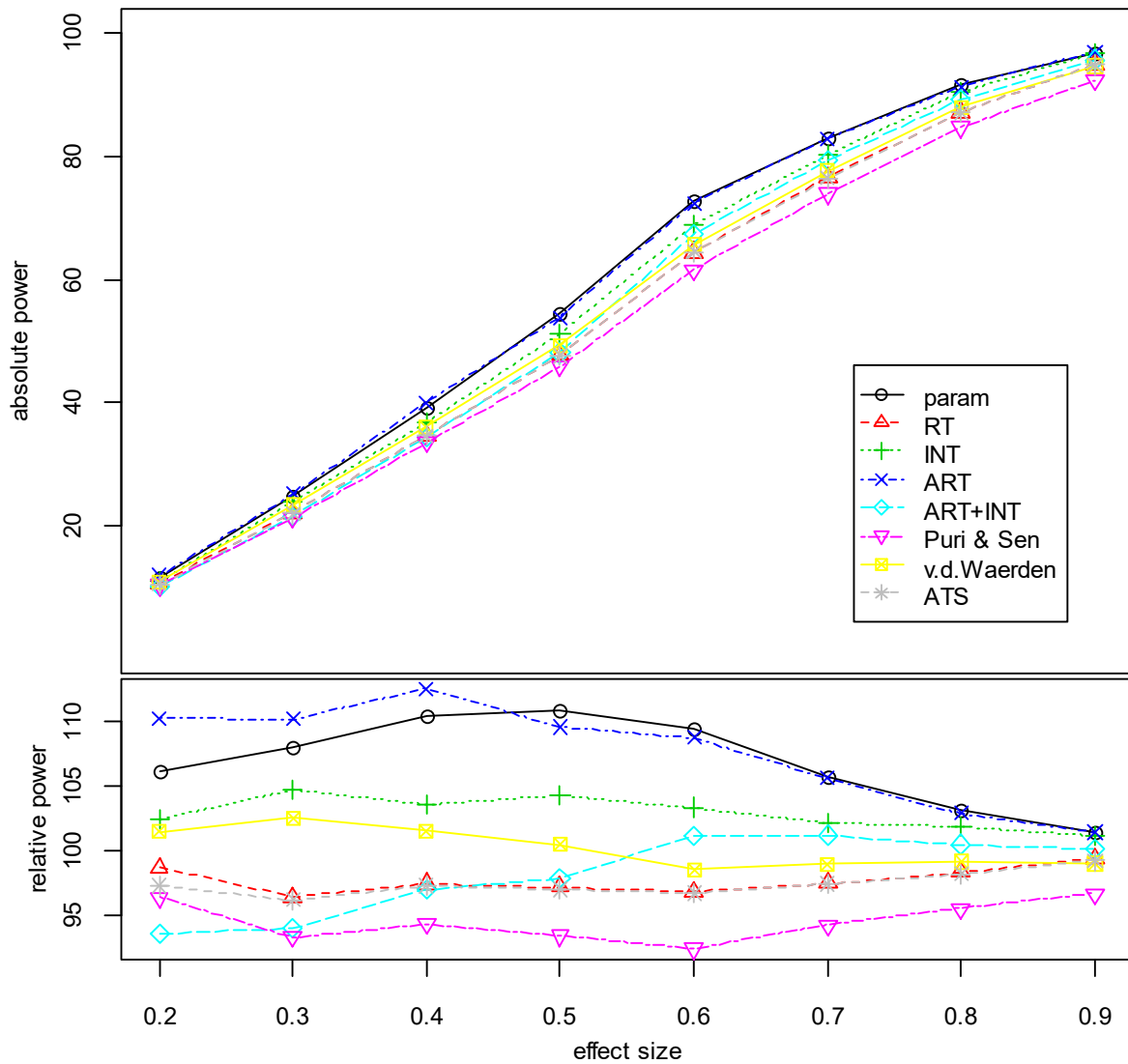
5.3.5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.60	25.30	39.45	54.95	73.20	84.00	91.70	97.00
RT	11.05	21.85	34.10	47.50	63.95	77.65	87.65	95.05
INT	11.25	23.15	35.25	49.00	66.55	79.10	88.40	96.00
ART	12.35	24.65	39.25	54.40	73.30	83.95	92.10	97.65
ART+INT	9.95	21.50	34.90	49.25	67.95	81.05	89.75	96.70
Puri & Sen	10.60	21.35	33.10	44.85	61.25	74.70	85.15	92.85
v.d.Waerden	10.80	22.05	33.95	46.35	63.35	76.10	86.05	93.85
ATS	10.90	21.65	34.05	47.30	63.80	77.55	87.55	94.90



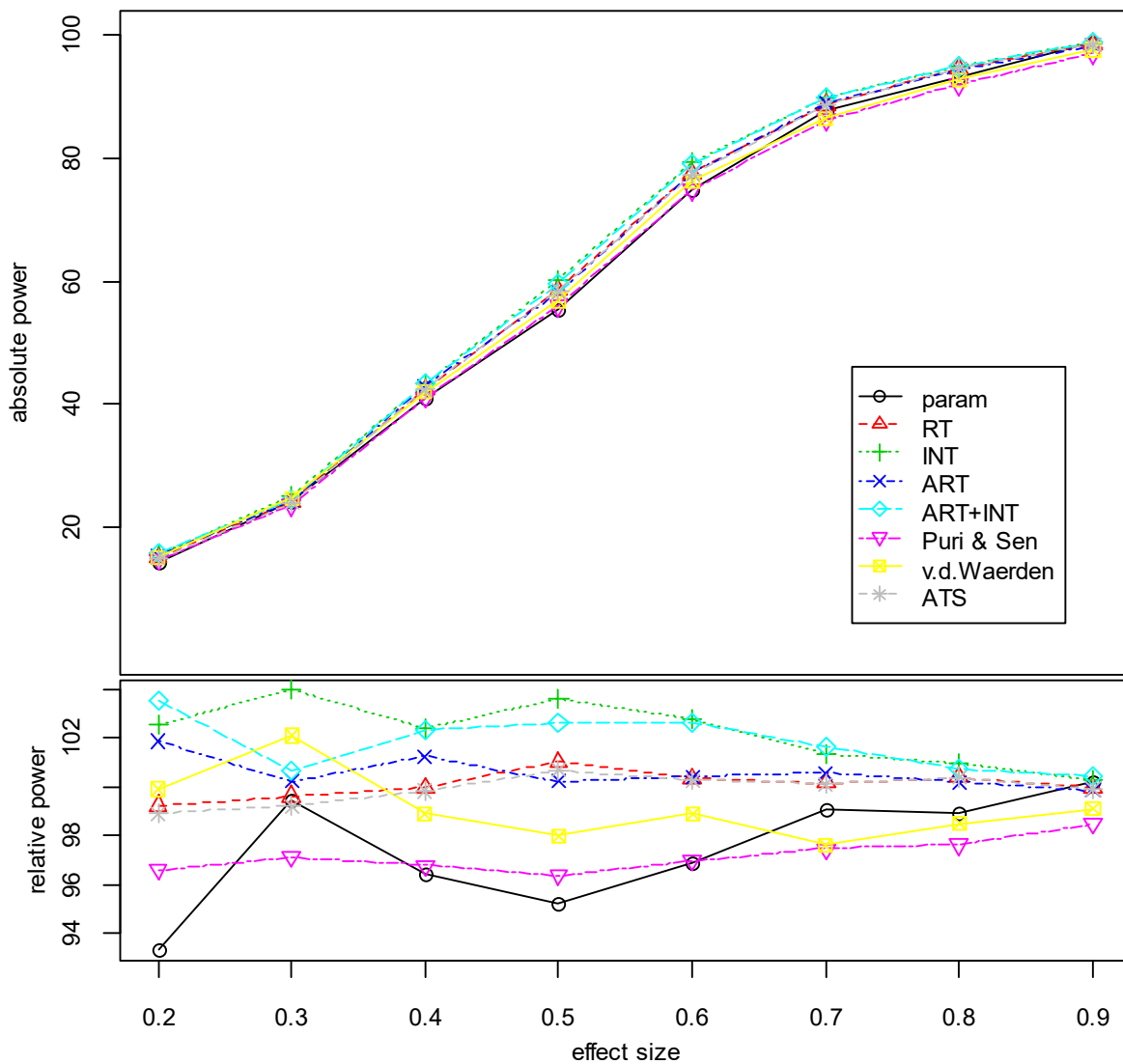
5.3.6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.50	24.70	39.25	54.35	72.85	82.90	91.50	96.85
RT	10.70	22.05	34.65	47.70	64.45	76.50	87.20	94.95
INT	11.10	23.95	36.85	51.15	68.80	80.15	90.30	96.60
ART	11.95	25.20	40.00	53.75	72.40	82.85	91.25	96.90
ART+INT	10.15	21.50	34.50	48.05	67.35	79.40	89.10	95.65
Puri & Sen	10.45	21.35	33.55	45.85	61.55	73.95	84.70	92.35
v.d.Waerden	11.00	23.45	36.10	49.30	65.60	77.65	87.90	94.60
ATS	10.55	22.00	34.60	47.60	64.40	76.45	87.05	94.80



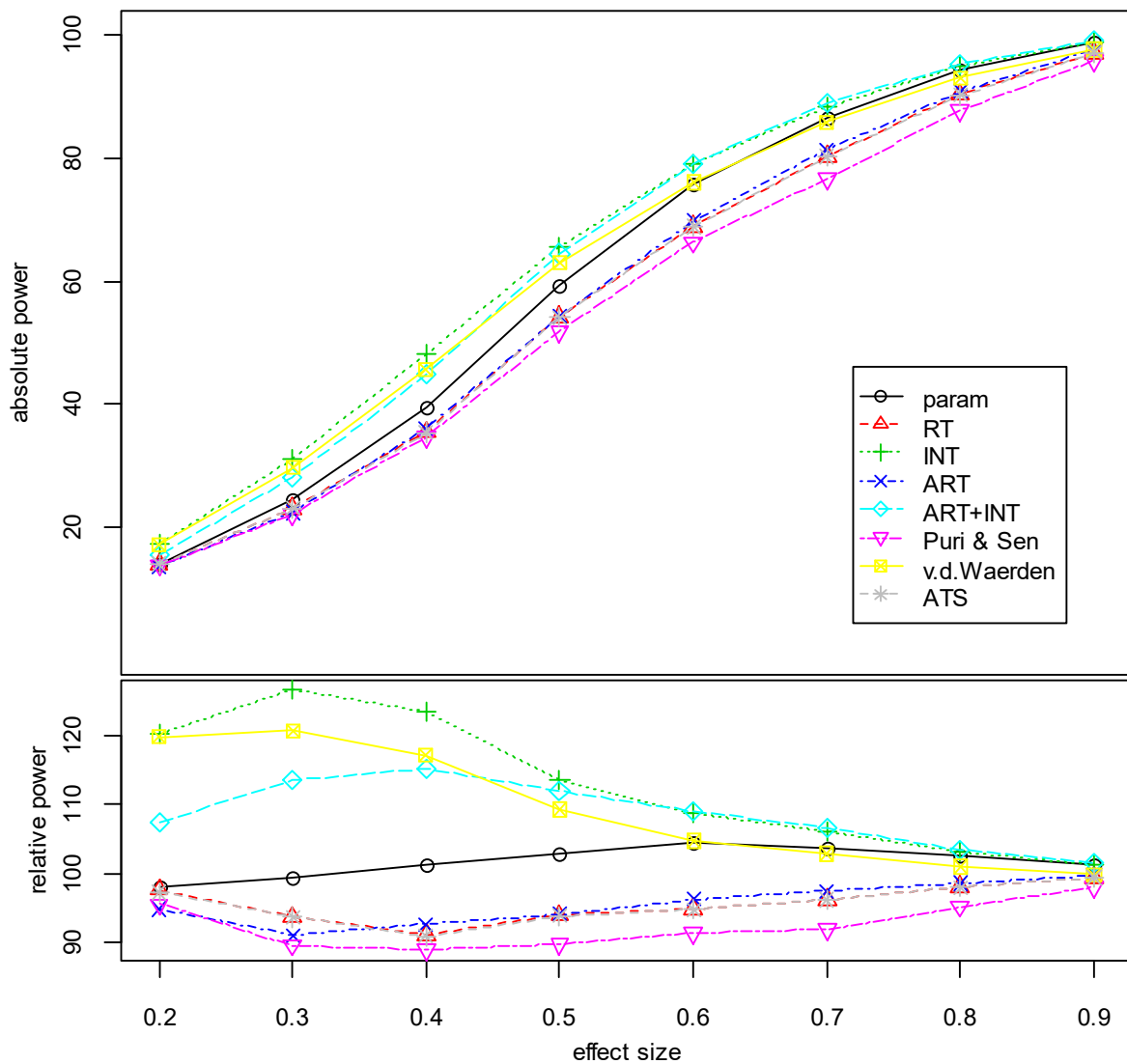
5.3.7 lognormal distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	14.20	24.10	40.95	55.25	74.75	87.70	93.15	98.70
RT	15.10	24.15	42.45	58.60	77.40	88.65	94.50	98.45
INT	15.60	25.20	43.50	60.10	79.30	89.70	95.00	98.75
ART	15.50	24.30	43.00	58.15	77.45	89.00	94.30	98.35
ART+INT	15.75	24.40	43.45	59.55	79.15	89.95	94.80	98.90
Puri & Sen	14.70	23.55	41.10	55.90	74.80	86.25	91.90	97.00
v.d.Waerden	15.20	24.75	42.00	56.85	76.30	86.40	92.70	97.60
ATS	15.05	24.05	42.40	58.40	77.35	88.60	94.50	98.40



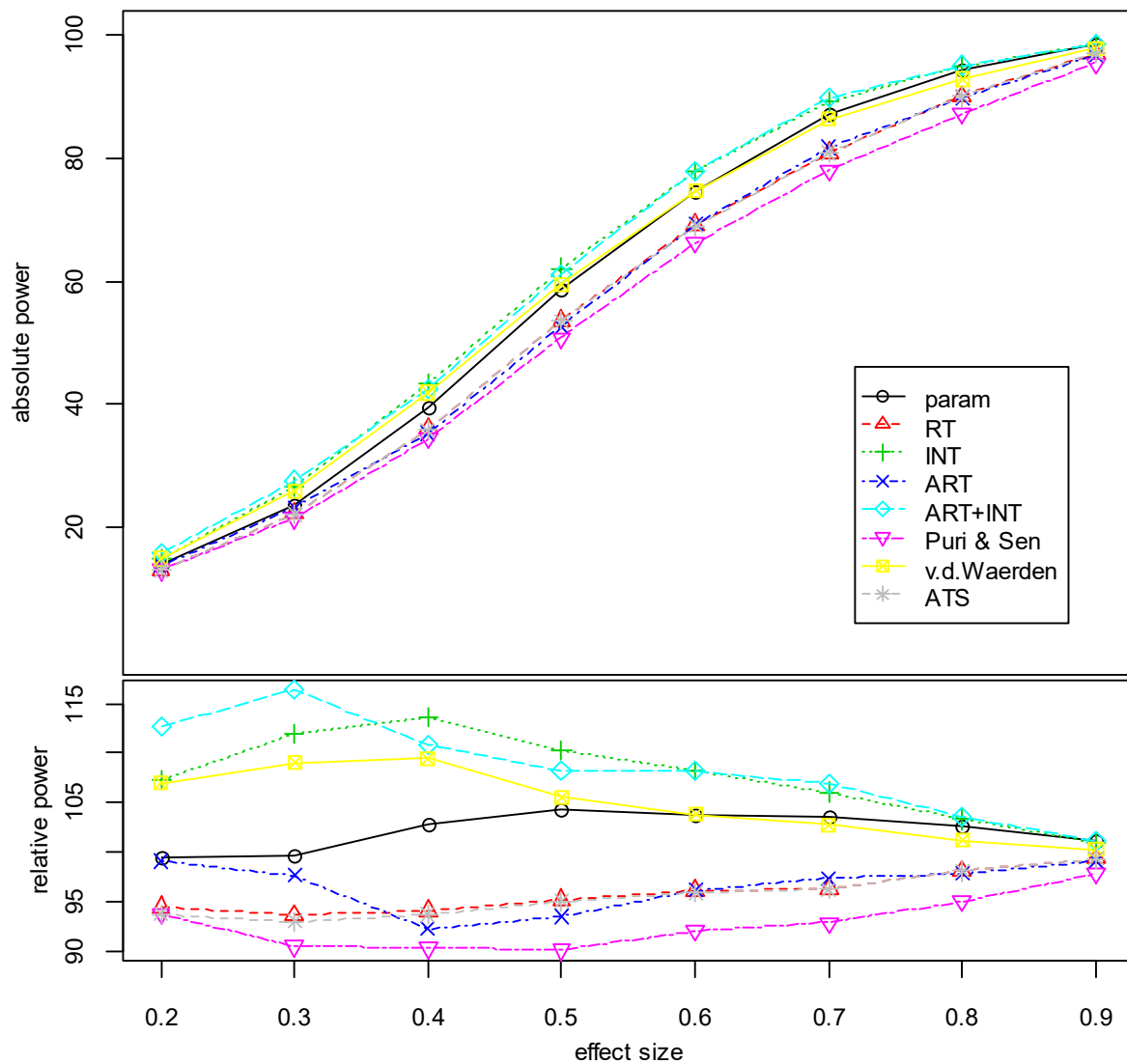
5.3.8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	14.15	24.50	39.50	59.25	75.80	86.55	94.45	98.85
RT	14.10	23.10	35.55	54.20	68.90	80.25	90.35	97.10
INT	17.35	31.20	48.10	65.50	78.95	88.45	95.00	98.90
ART	13.70	22.45	36.15	54.25	69.90	81.30	90.80	97.50
ART+INT	15.50	28.00	44.90	64.50	79.10	88.90	95.30	99.10
Puri & Sen	13.80	22.10	34.70	51.75	66.35	76.65	87.65	95.75
v.d.Waerden	17.30	29.75	45.65	63.00	76.05	85.85	93.00	97.60
ATS	14.05	23.10	35.45	54.10	68.85	80.25	90.25	97.10



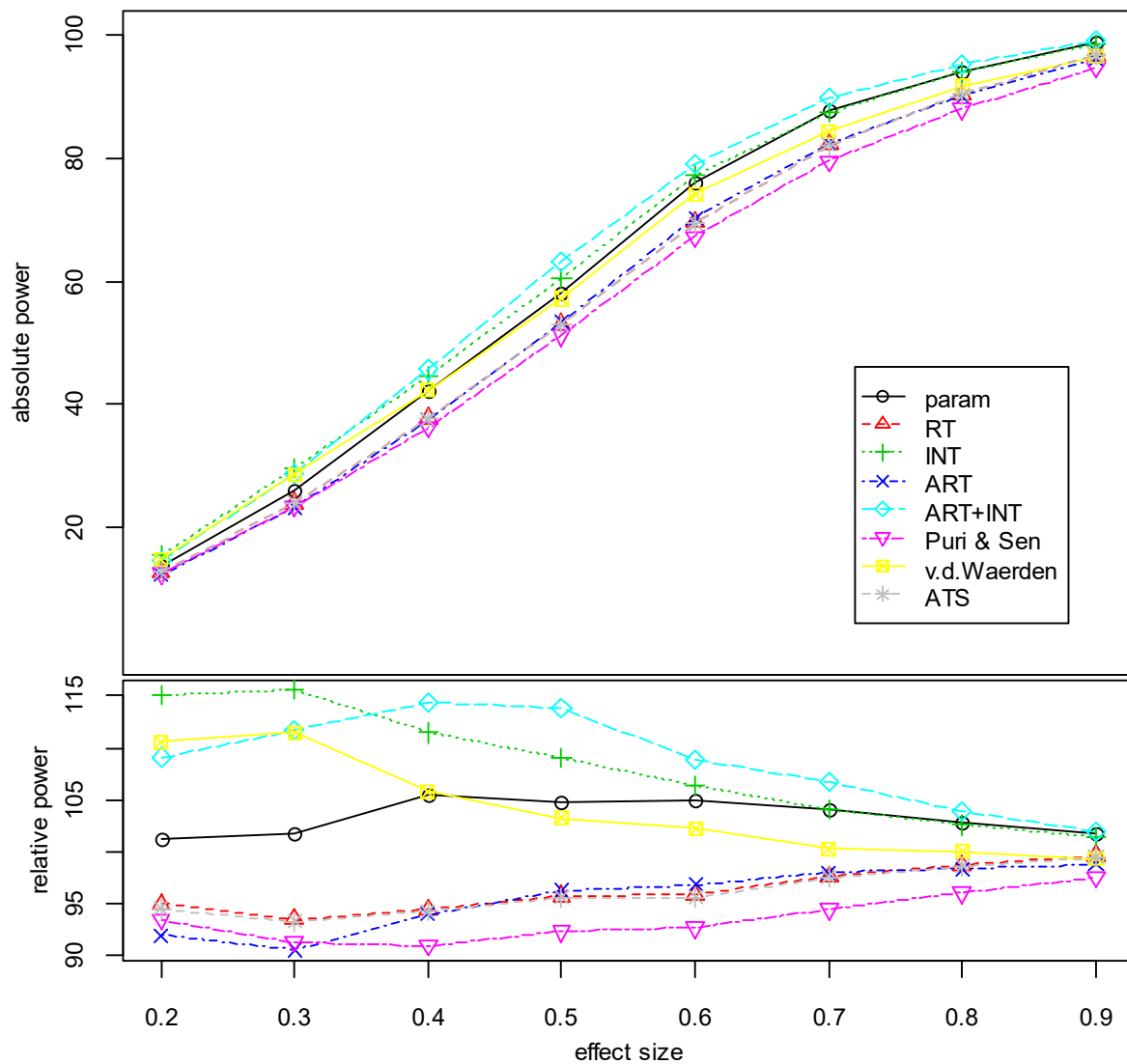
5.3.9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.90	23.70	39.35	58.70	74.70	87.05	94.20	98.60
RT	13.20	22.25	36.00	53.60	69.15	80.90	90.05	96.90
INT	15.00	26.60	43.50	62.10	77.90	89.10	94.80	98.50
ART	13.85	23.20	35.30	52.65	69.20	81.75	89.80	96.65
ART+INT	15.75	27.65	42.45	60.95	77.85	89.85	95.05	98.55
Puri & Sen	13.10	21.50	34.55	50.75	66.20	78.00	87.25	95.40
v.d.Waerden	14.95	25.90	41.90	59.45	74.70	86.30	92.85	97.80
ATS	13.10	22.10	35.85	53.50	69.00	80.85	90.00	96.90



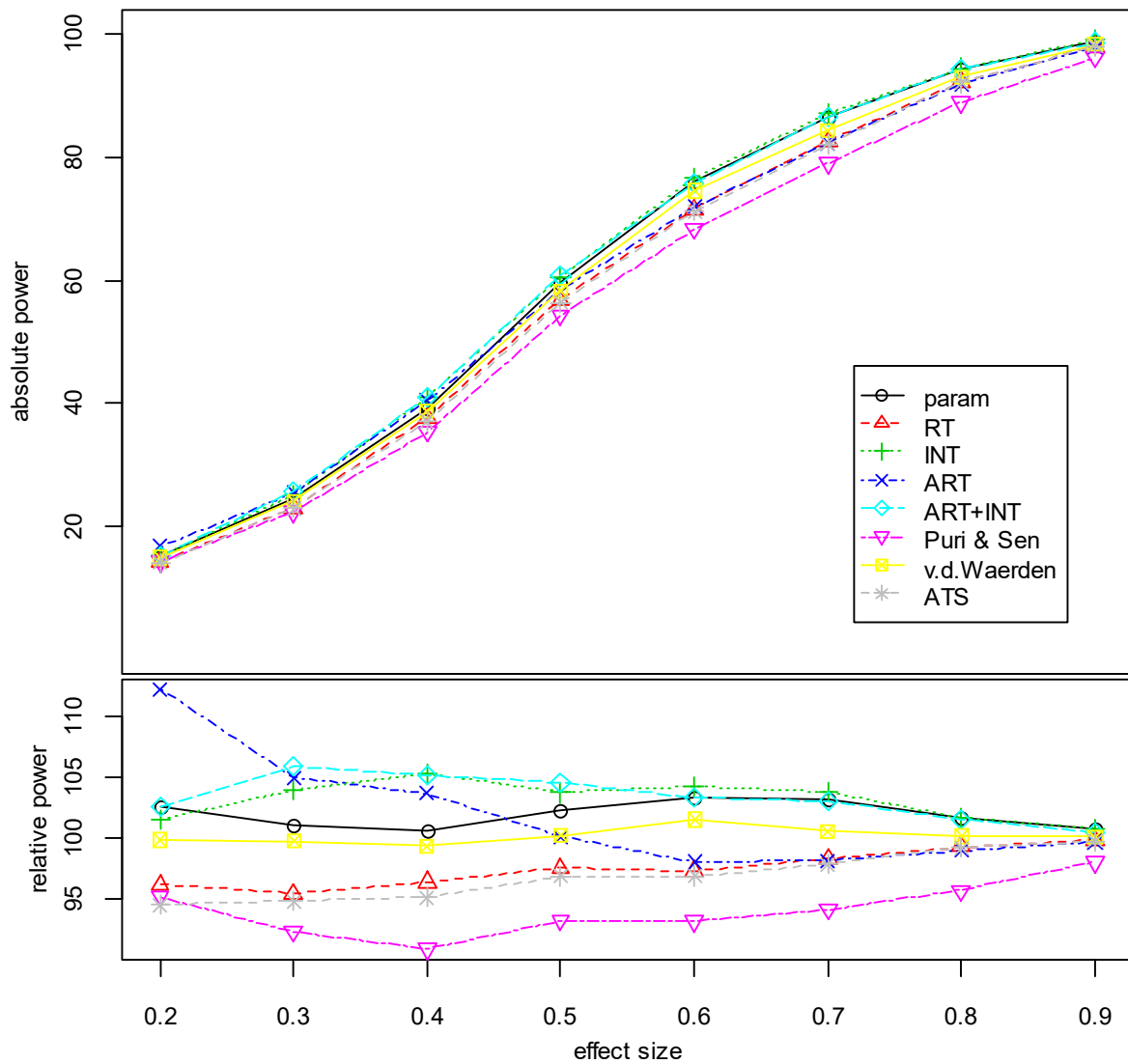
5.3.10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.60	26.10	42.10	58.05	76.15	87.60	94.15	98.80
RT	12.75	24.00	37.70	53.05	69.55	82.15	90.35	96.80
INT	15.45	29.65	44.50	60.45	77.15	87.50	93.90	98.50
ART	12.35	23.25	37.55	53.35	70.30	82.45	90.05	96.00
ART+INT	14.65	28.65	45.65	63.10	79.00	89.80	95.15	99.00
Puri & Sen	12.55	23.45	36.35	51.20	67.25	79.50	87.95	94.75
v.d.Waerden	14.85	28.60	42.25	57.20	74.20	84.35	91.60	96.50
ATS	12.70	23.95	37.65	53.00	69.40	82.10	90.30	96.7



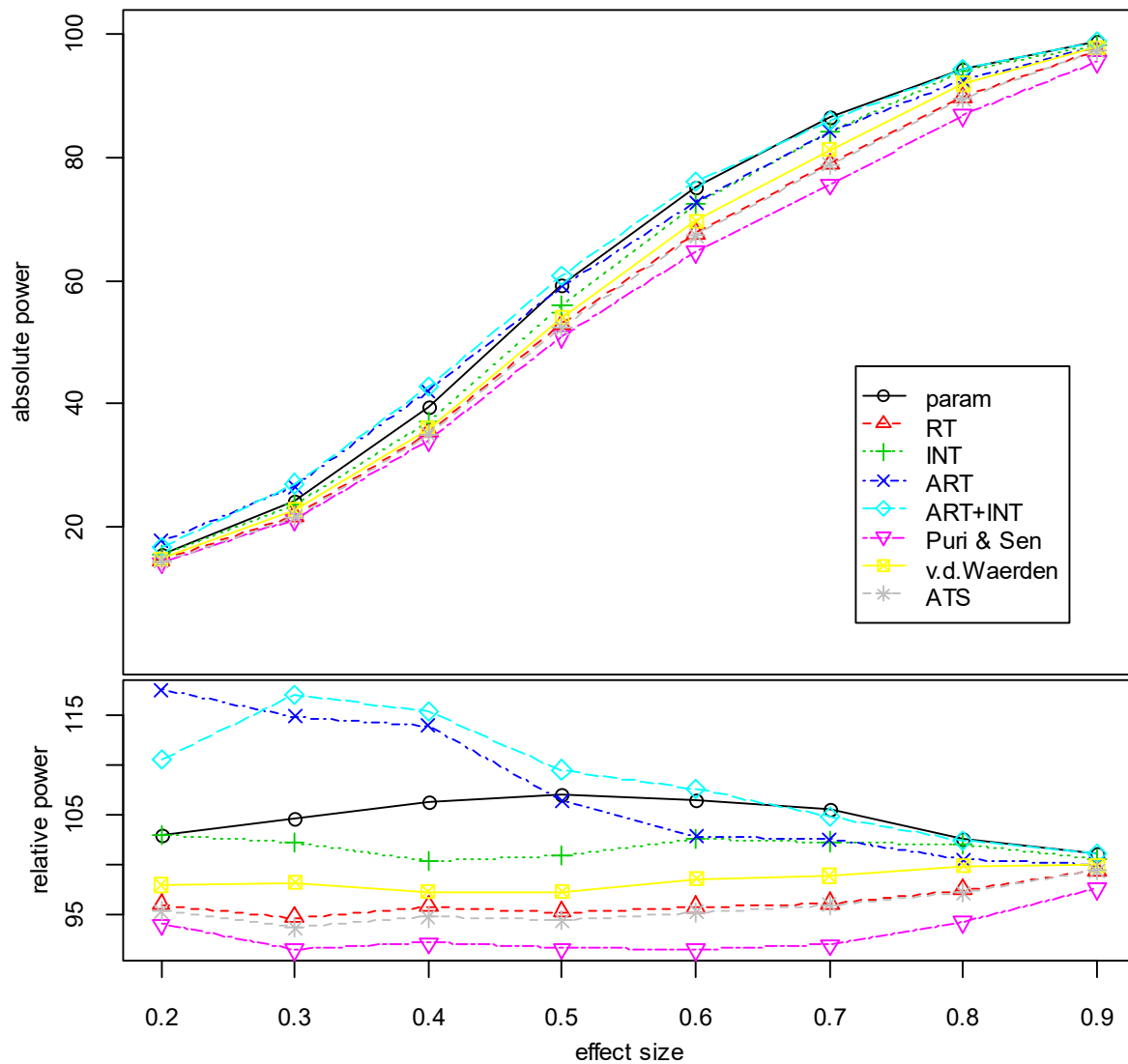
5. 3. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.35	24.45	39.25	59.50	75.90	86.55	94.35	98.95
RT	14.40	23.10	37.60	56.75	71.45	82.50	92.20	98.00
INT	15.20	25.15	41.05	60.35	76.60	87.10	94.45	99.00
ART	16.80	25.40	40.45	58.25	72.00	82.35	91.90	97.85
ART+INT	15.35	25.65	41.00	60.80	75.85	86.50	94.20	98.65
Puri & Sen	14.25	22.35	35.45	54.25	68.40	79.00	88.85	96.25
v.d.Waerden	14.95	24.15	38.75	58.30	74.55	84.40	93.00	98.30
ATS	14.15	22.95	37.10	56.35	71.15	82.10	92.10	97.95



5.3.12 left skewed distribution - unequal variances (on A and B)

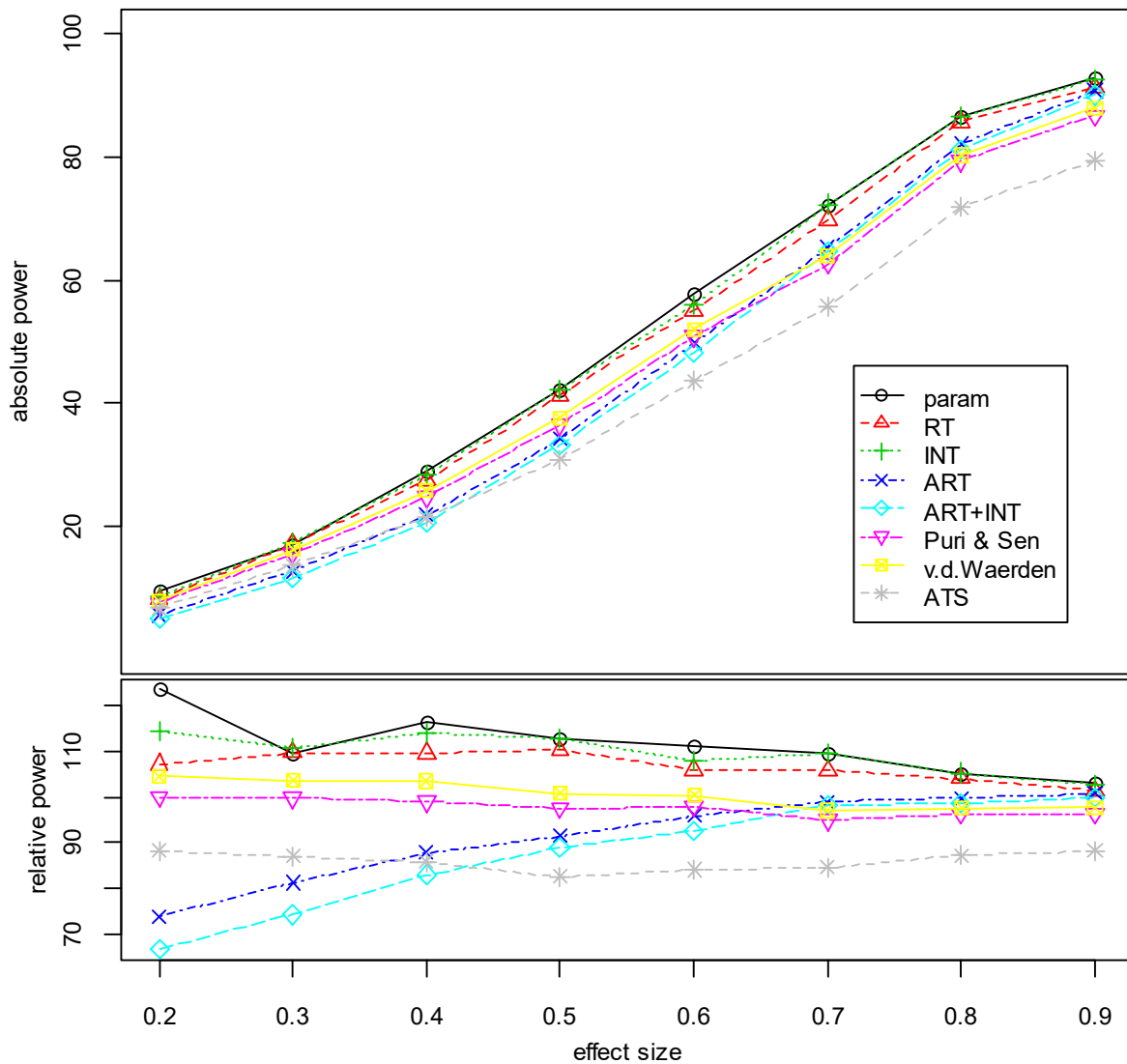
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.55	24.20	39.35	59.35	75.20	86.60	94.45	98.95
RT	14.50	21.90	35.45	52.85	67.70	78.90	89.75	97.25
INT	15.55	23.65	37.15	55.95	72.55	84.00	93.90	98.30
ART	17.75	26.55	42.15	59.05	72.70	84.20	92.50	97.85
ART+INT	16.70	27.05	42.70	60.75	76.00	86.00	94.25	98.90
Puri & Sen	14.20	21.15	34.10	50.80	64.65	75.50	86.75	95.50
v.d.Waerden	14.80	22.70	36.00	53.95	69.65	81.20	91.95	97.80
ATS	14.40	21.65	35.05	52.35	67.30	78.80	89.45	97.25



5. 4. Main effect A - B significant (unequal $n_i \sim 5$ / # levels = 4*5)

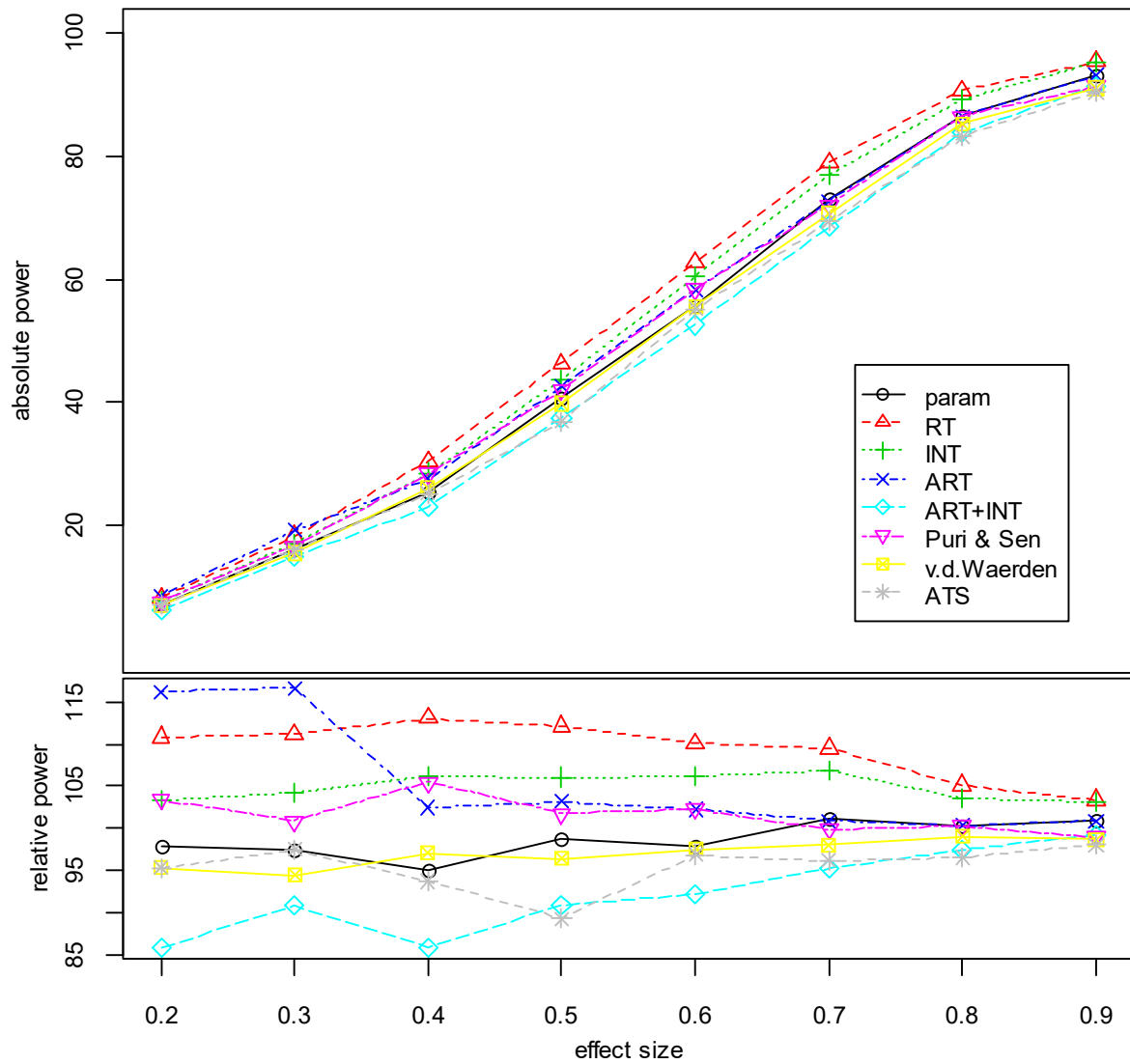
5. 4. 1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.45	17.15	29.05	42.05	57.65	72.20	86.50	92.70
RT	8.20	17.15	27.40	41.15	55.00	69.80	85.65	91.25
INT	8.75	17.30	28.50	42.15	55.95	72.30	86.65	92.50
ART	5.65	12.70	21.95	34.15	49.75	65.25	82.05	90.75
ART+INT	5.10	11.60	20.75	33.25	48.10	64.75	81.25	90.00
Puri & Sen	7.65	15.60	24.75	36.45	50.80	62.60	79.30	86.70
v.d.Waerden	8.00	16.20	25.85	37.65	52.05	64.00	80.25	88.00
ATS	6.75	13.60	21.45	30.85	43.65	55.75	71.75	79.40



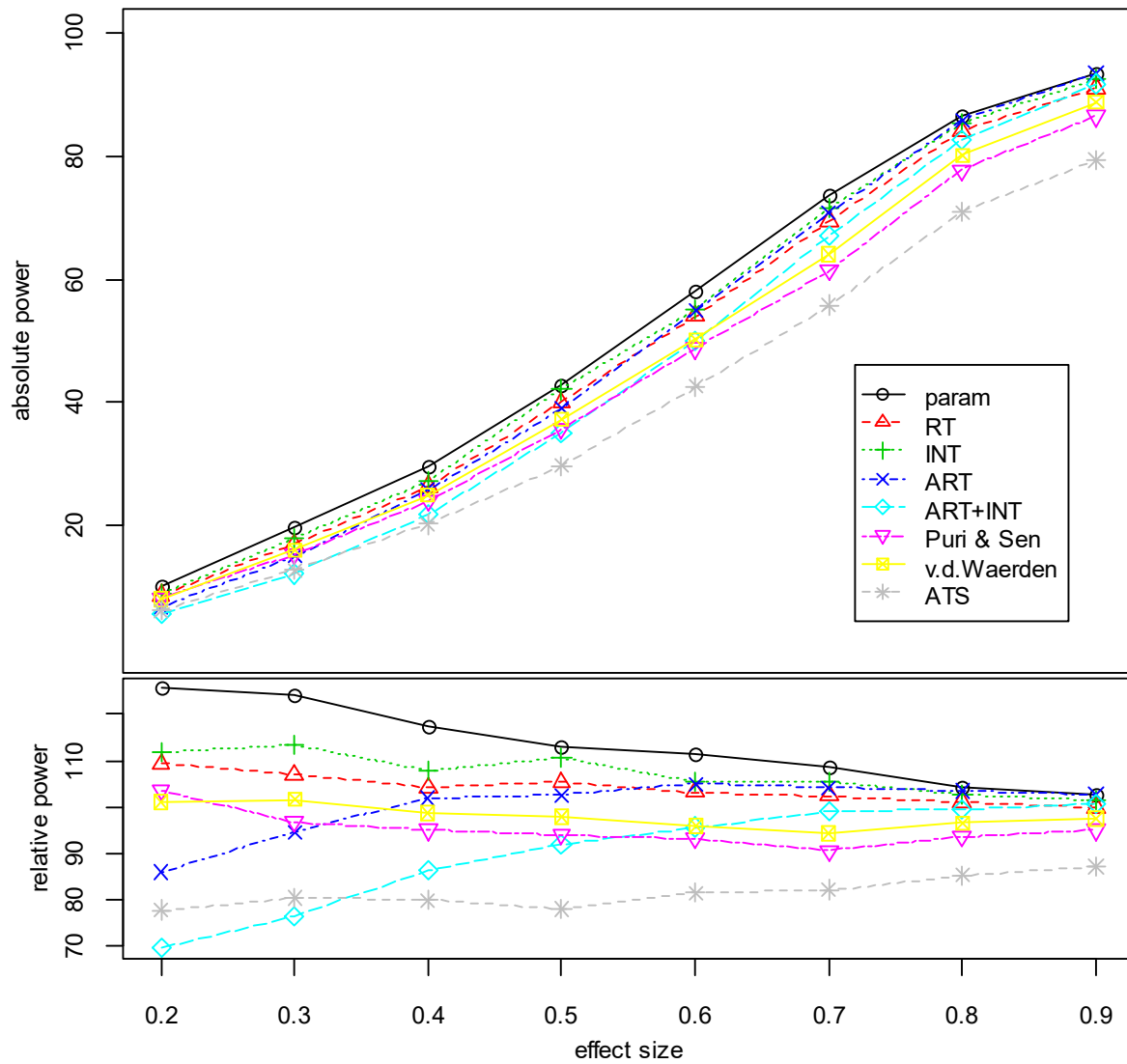
5. 4. 2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.25	16.05	25.55	40.75	55.80	72.95	86.50	93.15
RT	8.20	18.30	30.40	46.30	62.70	78.95	90.60	95.35
INT	7.65	17.15	28.55	43.80	60.50	77.05	89.25	95.20
ART	8.60	19.20	27.55	42.60	58.25	72.70	86.45	93.10
ART+INT	6.35	14.95	23.10	37.55	52.55	68.70	83.90	91.45
Puri & Sen	7.65	16.60	28.35	42.00	58.30	72.05	86.40	91.40
v.d.Waerden	7.05	15.55	26.10	39.80	55.55	70.65	85.30	91.05
ATS	7.05	16.05	25.20	36.85	55.20	69.35	83.20	90.45



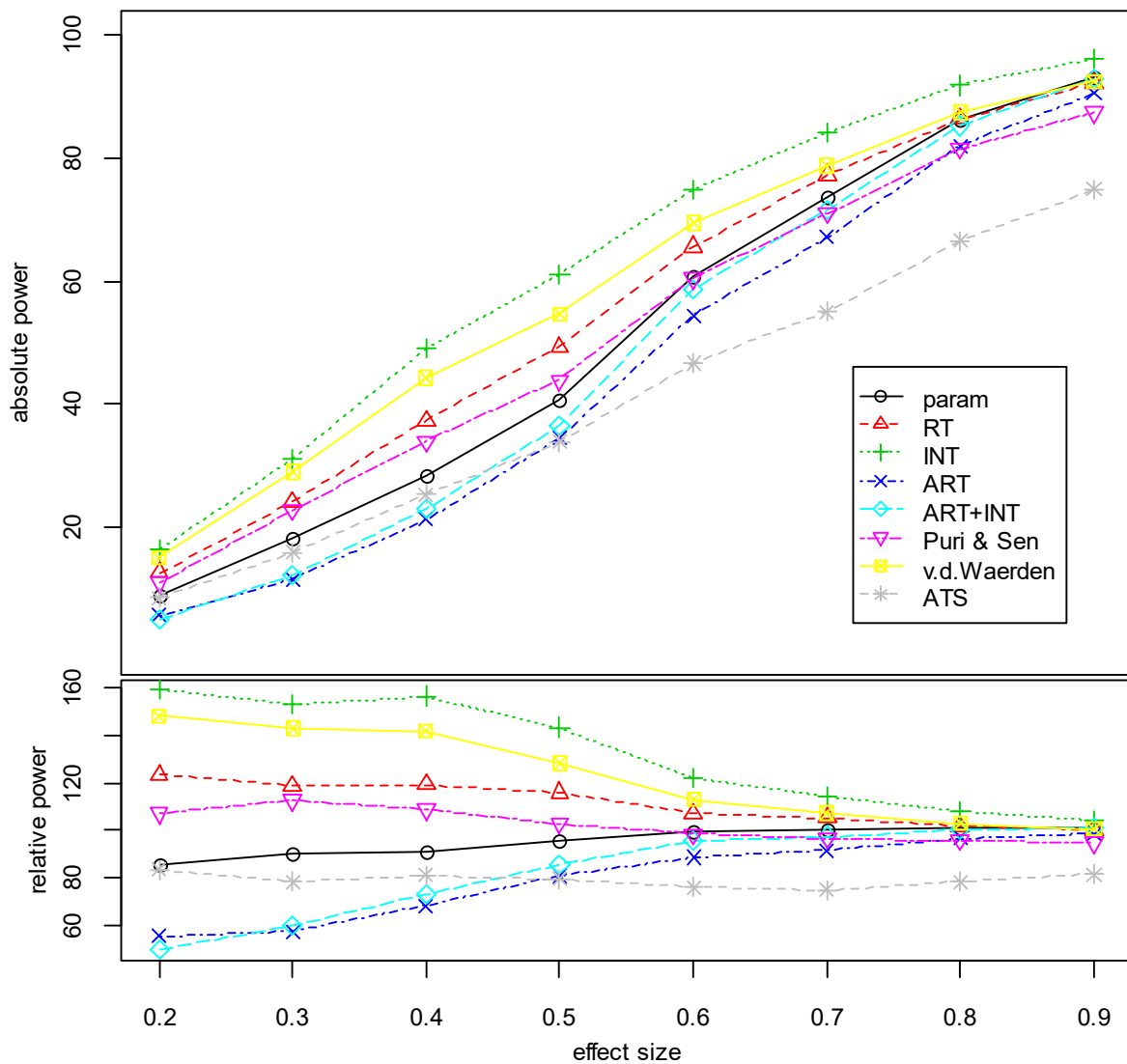
5.4.3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.00	19.70	29.70	42.85	58.20	73.70	86.60	93.30
RT	8.70	16.95	26.35	40.00	54.00	69.50	84.05	91.00
INT	8.90	18.00	27.30	42.05	55.10	71.65	85.30	92.50
ART	6.85	15.00	25.75	38.95	54.90	70.70	85.90	93.45
ART+INT	5.55	12.10	21.85	34.90	50.05	67.15	82.55	91.75
Puri & Sen	8.25	15.35	24.05	35.75	48.80	61.50	77.75	86.55
v.d.Waerden	8.05	16.10	24.95	37.20	50.15	64.05	80.20	88.75
ATS	6.20	12.75	20.20	29.65	42.60	55.80	70.85	79.35



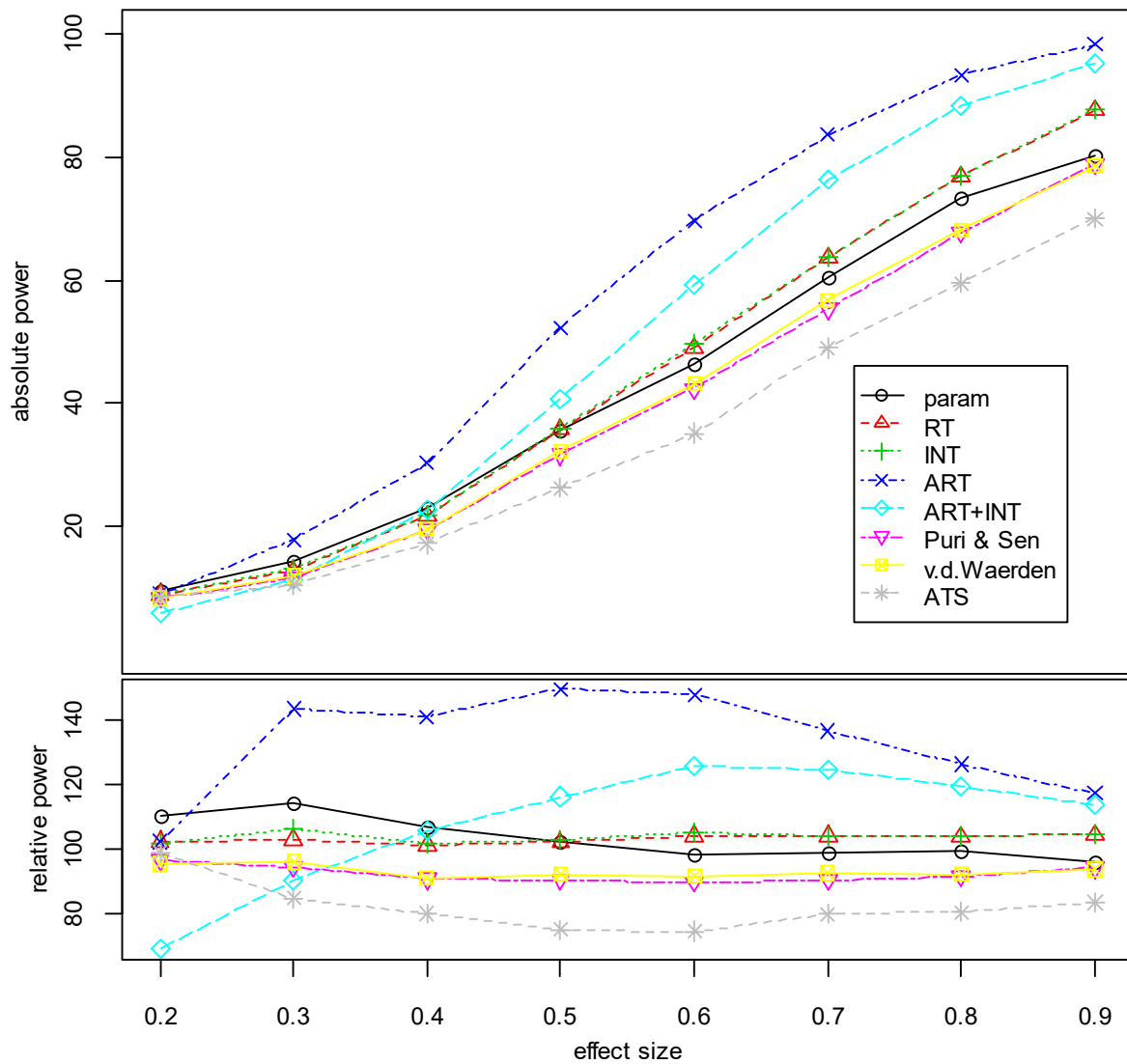
5.4.4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.80	18.25	28.50	40.80	60.90	73.75	86.15	93.05
RT	12.65	24.10	37.30	49.35	65.65	77.25	86.35	92.30
INT	16.30	31.10	49.00	61.10	74.75	84.05	91.80	96.05
ART	5.70	11.60	21.35	34.45	54.40	67.15	81.95	90.55
ART+INT	5.10	12.20	22.90	36.45	58.65	71.65	85.20	92.85
Puri & Sen	11.00	22.85	34.00	43.90	60.40	71.05	81.50	87.35
v.d.Waerden	15.20	29.00	44.30	54.65	69.45	78.75	87.45	92.40
ATS	8.55	15.90	25.35	33.90	46.70	55.00	66.55	74.95



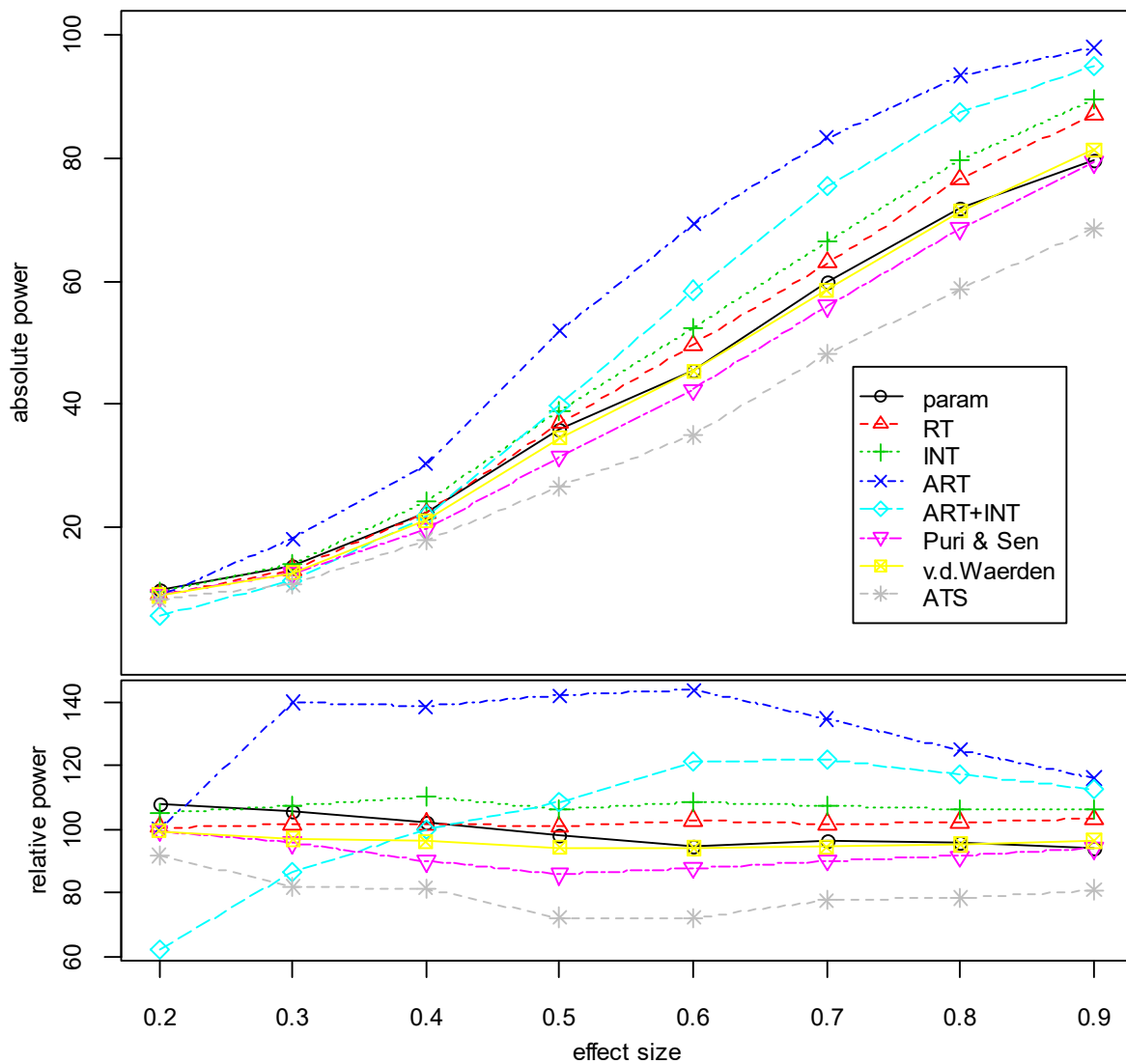
5.4.5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.65	14.25	23.00	35.70	46.45	60.40	73.45	80.35
RT	8.95	12.80	21.75	35.70	49.00	63.70	76.85	87.55
INT	8.90	13.20	21.85	35.95	49.60	63.80	76.85	87.75
ART	8.95	17.85	30.30	52.25	69.65	83.65	93.35	98.35
ART+INT	6.05	11.25	22.70	40.65	59.30	76.25	88.30	95.25
Puri & Sen	8.45	11.75	19.50	31.65	42.35	55.40	67.70	78.90
v.d.Waerden	8.35	11.95	19.55	32.25	43.15	56.75	68.15	78.55
ATS	8.65	10.55	17.20	26.25	35.15	48.95	59.45	69.95



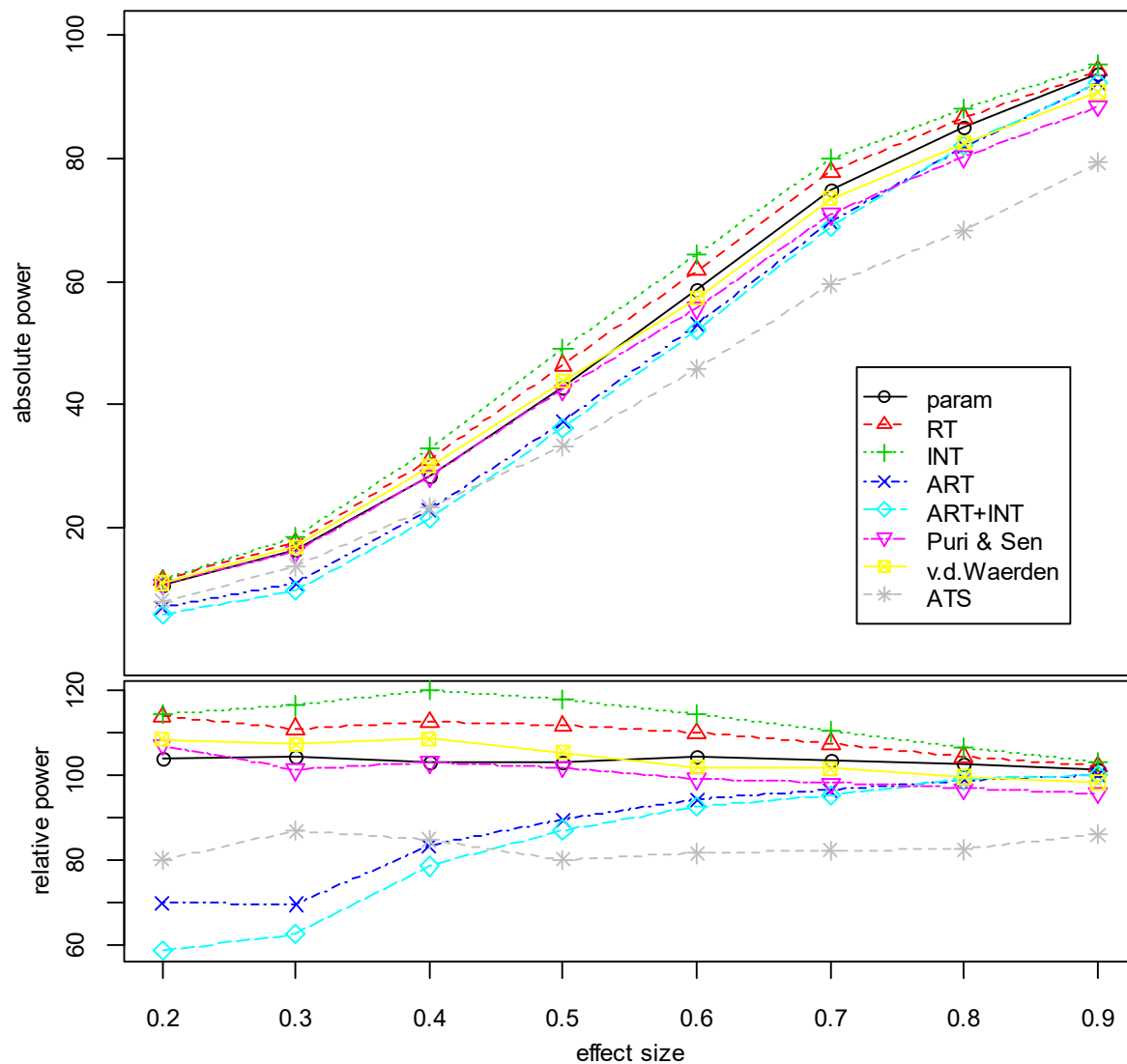
5.4.6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.70	13.70	22.40	36.00	45.60	59.85	71.90	79.55
RT	9.05	13.20	22.30	36.90	49.55	63.00	76.60	87.15
INT	9.45	13.95	24.15	38.90	52.35	66.40	79.55	89.45
ART	9.00	18.15	30.35	51.90	69.20	83.35	93.40	97.90
ART+INT	5.60	11.25	21.95	39.75	58.50	75.45	87.55	94.95
Puri & Sen	8.95	12.45	19.75	31.45	42.40	55.90	68.50	79.30
v.d.Waerden	8.95	12.60	21.10	34.50	45.35	58.55	71.30	81.40
ATS	8.25	10.65	17.90	26.50	34.90	48.15	58.80	68.45



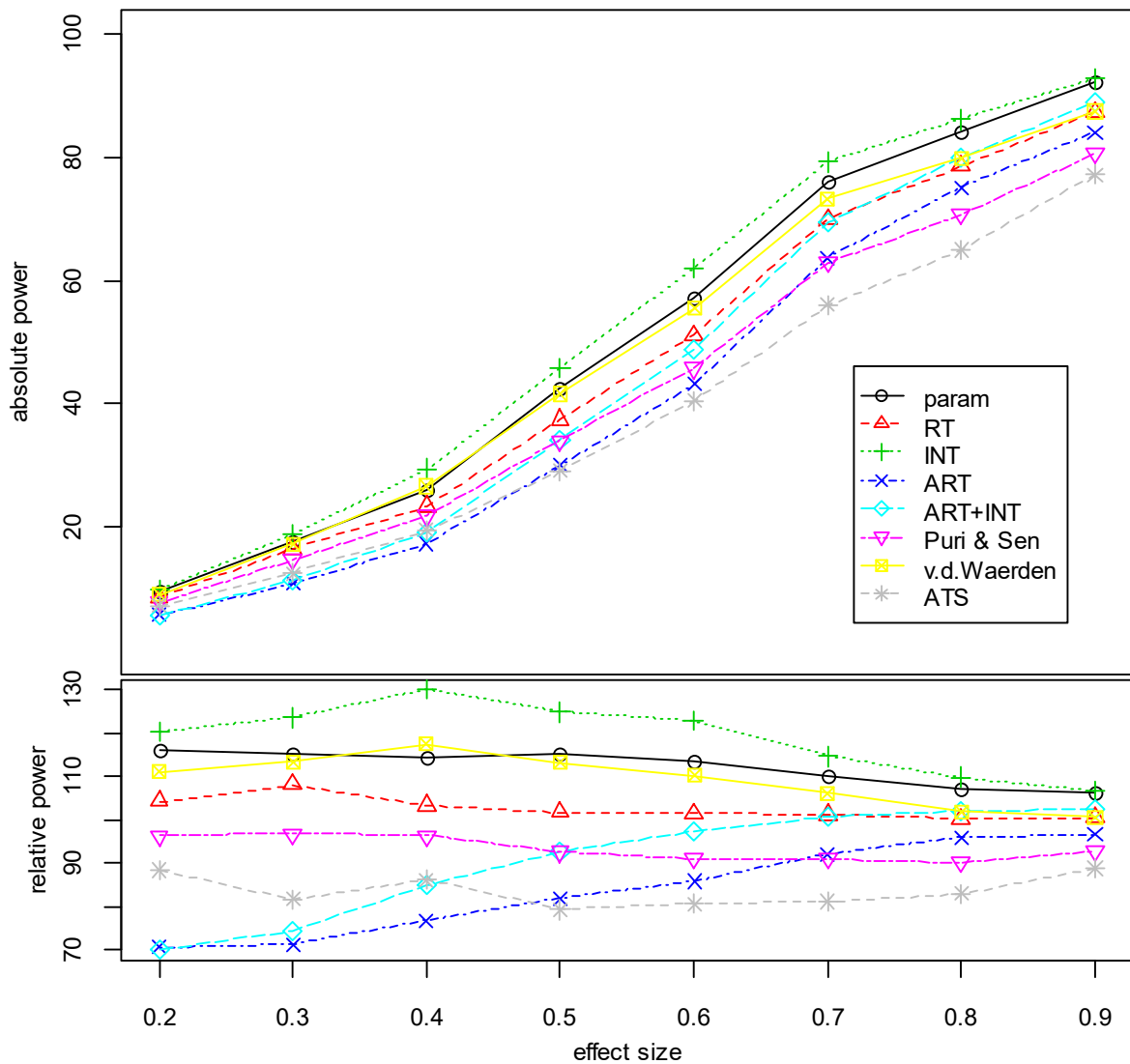
5.4.7 lognormal distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.60	16.55	28.45	42.85	58.75	75.00	84.95	93.65
RT	11.60	17.60	31.00	46.45	61.80	77.80	86.55	94.15
INT	11.65	18.45	33.05	49.05	64.40	79.80	88.10	95.20
ART	7.10	11.00	22.95	37.15	53.00	69.75	81.80	92.25
ART+INT	5.95	9.90	21.60	36.20	52.00	68.80	81.95	92.25
Puri & Sen	10.90	16.05	28.40	42.35	55.70	70.95	80.20	88.40
v.d.Waerden	11.05	17.00	29.95	43.80	57.30	73.50	82.45	90.70
ATS	8.15	13.75	23.35	33.25	45.80	59.50	68.20	79.30



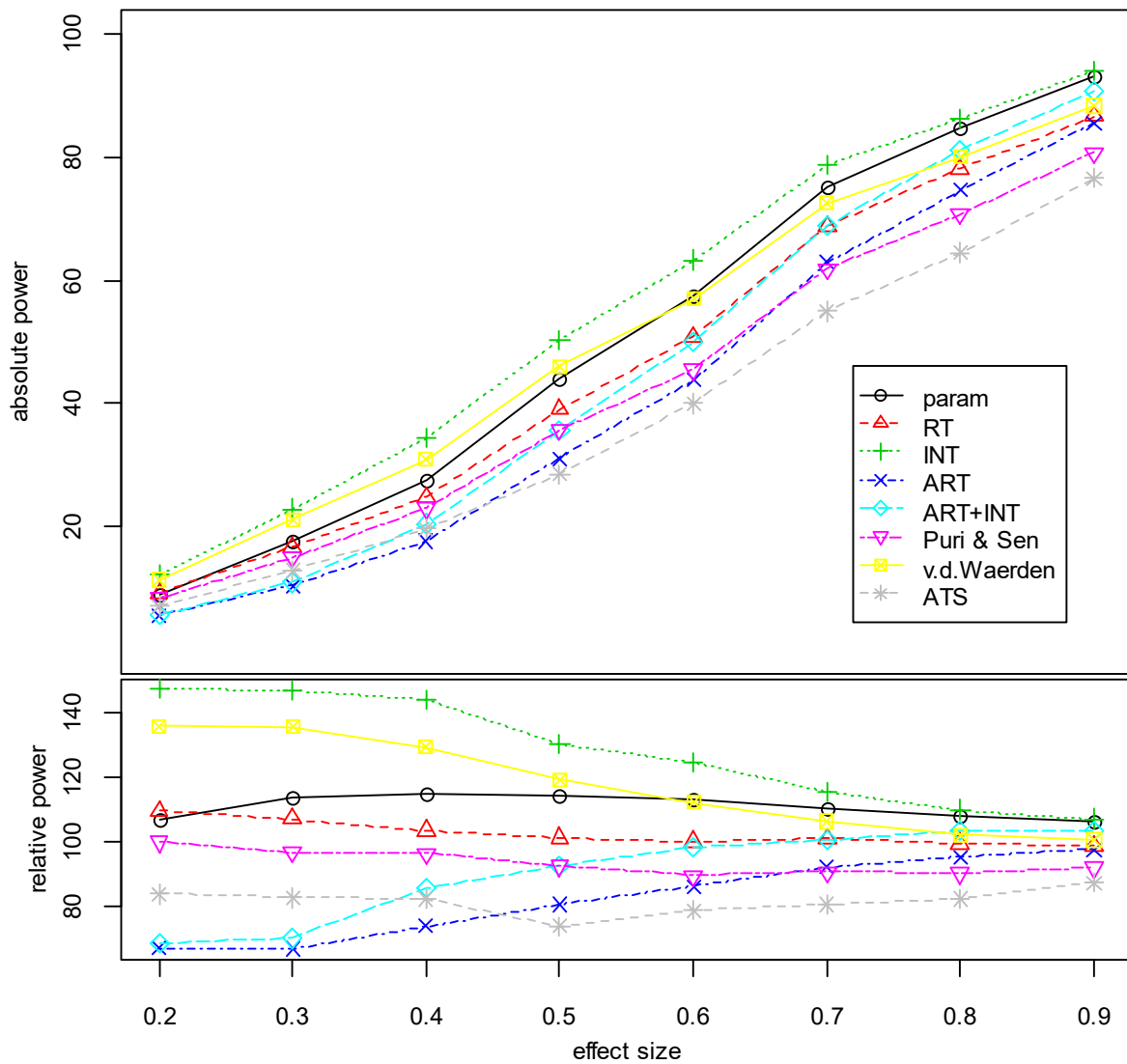
5.4.8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.95	17.70	27.40	43.95	57.35	75.15	84.60	93.25
RT	9.15	16.65	24.70	39.00	50.85	68.80	78.05	86.65
INT	12.30	22.85	34.40	50.25	63.30	78.85	86.25	94.05
ART	5.60	10.40	17.65	31.05	43.75	62.90	74.65	85.60
ART+INT	5.75	10.90	20.45	35.60	49.95	68.75	81.05	90.80
Puri & Sen	8.35	15.05	23.00	35.70	45.45	61.85	70.70	80.70
v.d.Waerden	11.35	21.10	30.85	45.95	57.00	72.50	80.05	88.35
ATS	7.00	12.85	19.65	28.50	39.95	54.95	64.50	76.60



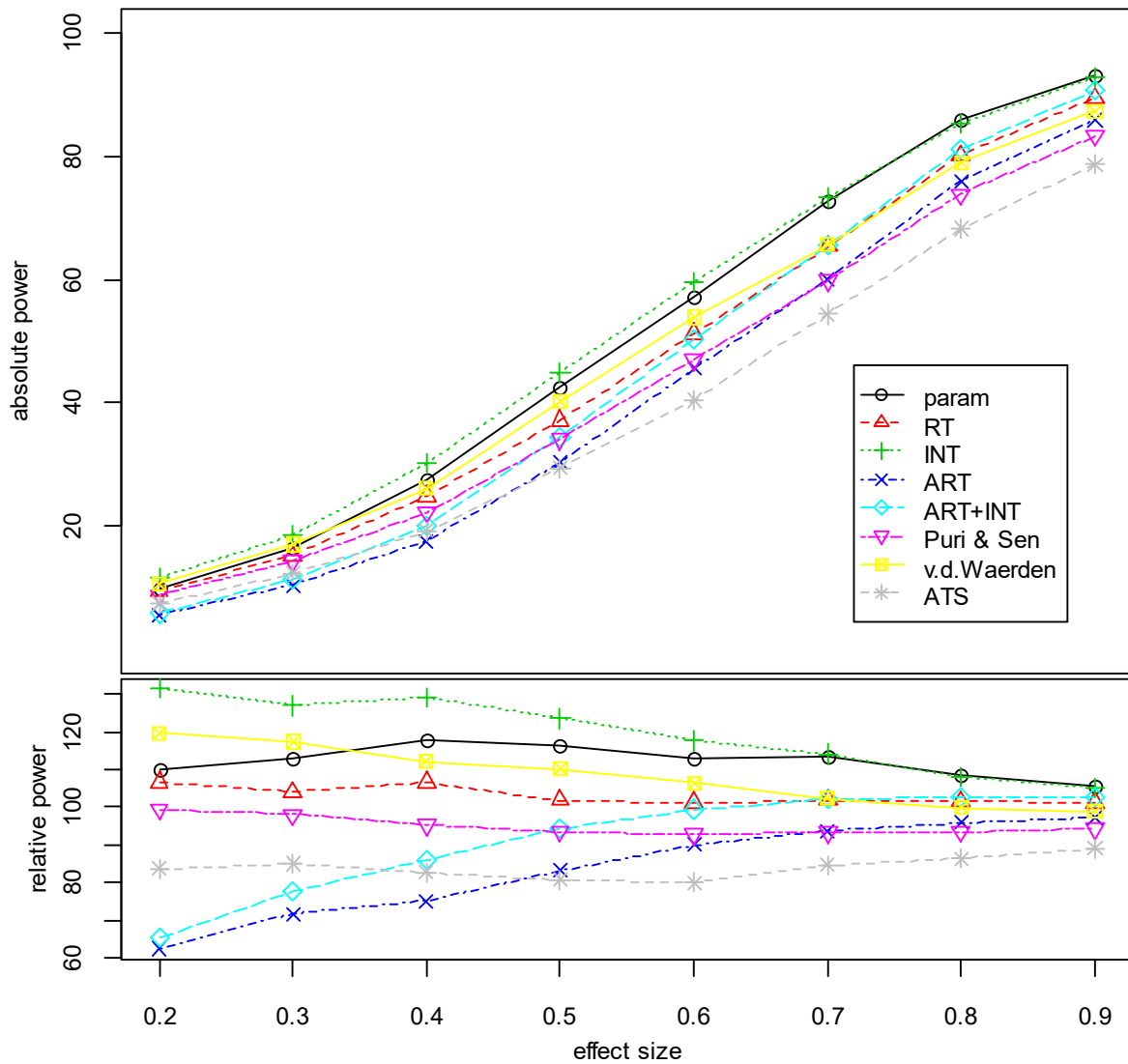
5.4.9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.45	17.60	25.90	42.40	57.05	76.00	84.10	92.30
RT	8.50	16.50	23.40	37.40	51.05	69.95	78.55	87.35
INT	9.80	18.85	29.45	45.90	61.85	79.20	86.10	92.70
ART	5.75	10.85	17.35	30.05	43.15	63.65	75.10	84.00
ART+INT	5.70	11.30	19.25	34.05	48.90	69.50	79.95	88.95
Puri & Sen	7.85	14.75	21.80	34.00	45.80	62.95	70.70	80.60
v.d.Waerden	9.05	17.30	26.60	41.60	55.50	73.30	79.85	87.45
ATS	7.20	12.45	19.50	29.10	40.50	56.05	64.95	77.20



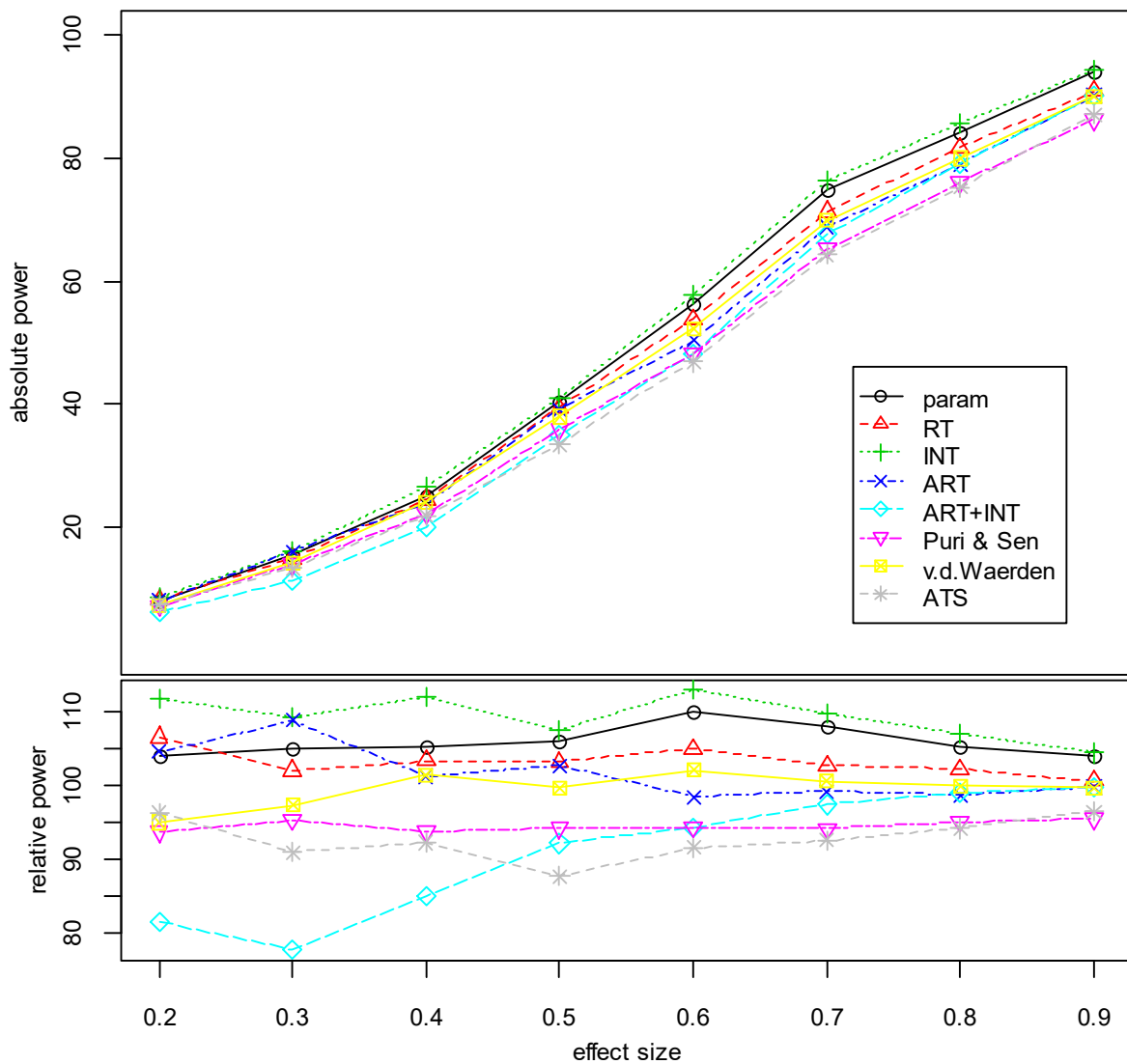
5. 4. 10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.80	16.40	27.50	42.40	57.20	72.70	85.95	93.20
RT	9.50	15.10	24.85	37.10	51.20	65.40	80.20	89.40
INT	11.70	18.45	30.15	45.00	59.50	73.30	85.45	92.75
ART	5.55	10.40	17.50	30.30	45.55	60.10	75.90	85.95
ART+INT	5.80	11.25	20.00	34.35	50.30	65.55	81.10	90.75
Puri & Sen	8.85	14.25	22.20	34.05	46.90	59.85	73.85	83.35
v.d.Waerden	10.65	17.05	26.15	40.15	53.85	65.65	79.00	87.40
ATS	7.45	12.35	19.25	29.40	40.40	54.35	68.25	78.70



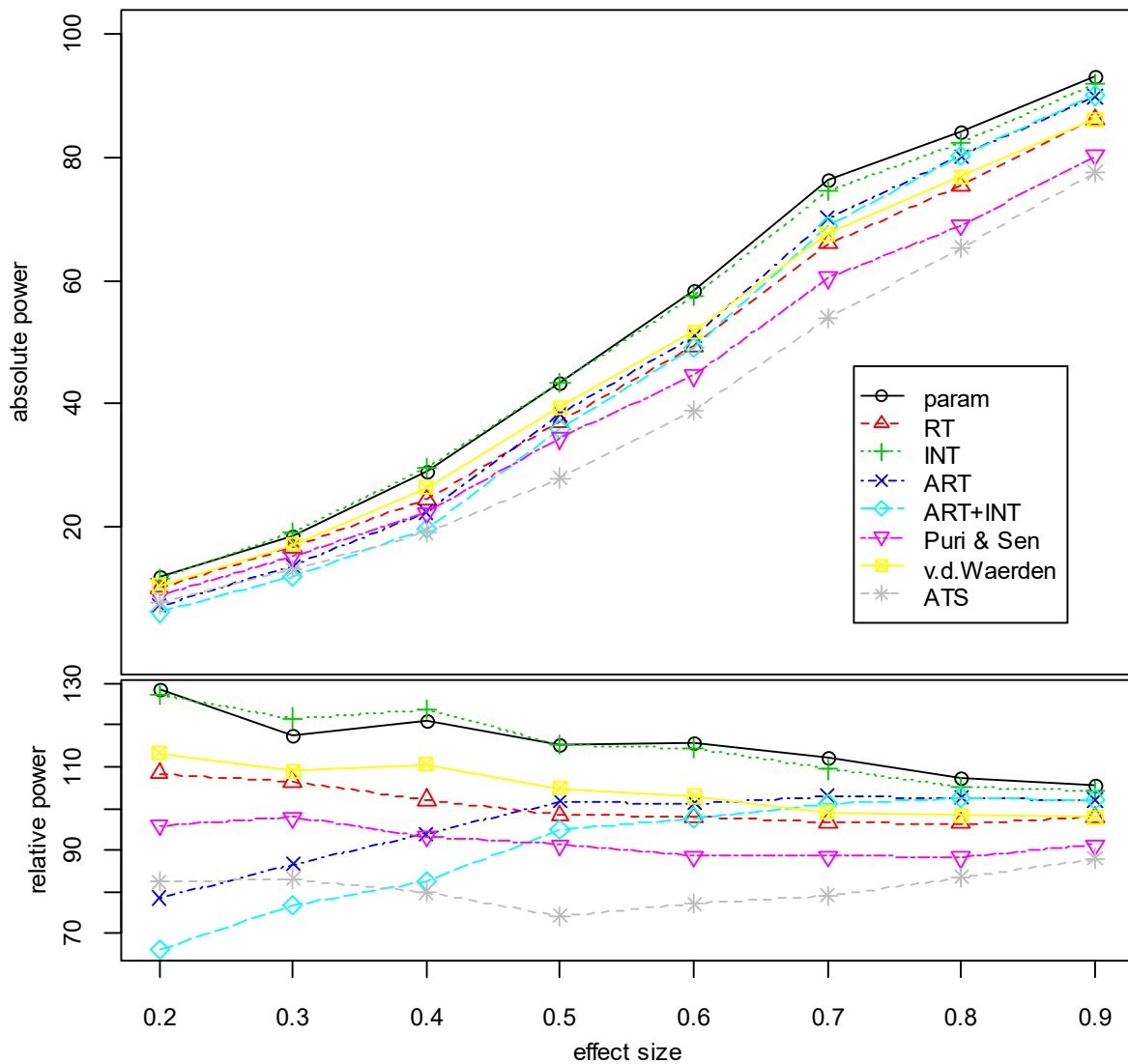
5. 4. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.05	15.45	25.00	40.45	56.40	74.95	84.15	93.90
RT	8.25	15.00	24.55	39.35	53.75	71.30	81.70	90.85
INT	8.65	16.05	26.60	41.00	57.85	76.25	85.60	94.30
ART	8.10	16.00	24.05	39.15	50.40	68.85	78.95	90.10
ART+INT	6.30	11.40	20.15	35.10	48.20	67.60	79.15	90.10
Puri & Sen	7.25	14.00	22.25	35.90	48.30	65.35	76.00	86.20
v.d.Waerden	7.35	14.30	24.10	38.00	52.25	69.80	79.95	90.05
ATS	7.45	13.35	21.90	33.40	46.85	64.25	75.25	87.05



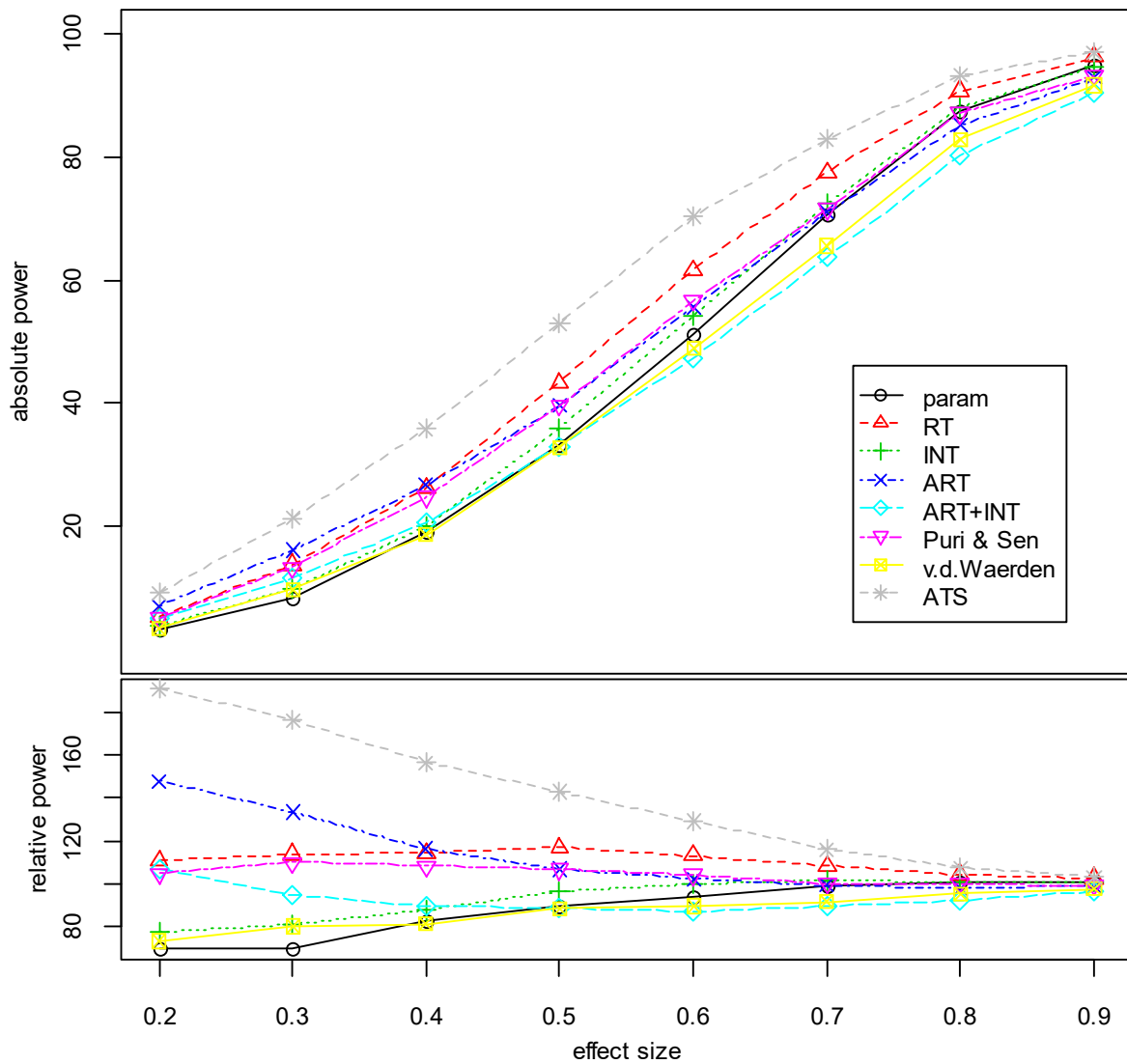
5. 4. 12 left skewed distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.85	18.45	28.95	43.35	58.30	76.40	84.05	93.00
RT	10.00	16.70	24.40	37.00	49.25	66.00	75.35	86.15
INT	11.75	19.10	29.55	43.45	57.50	74.55	82.30	91.95
ART	7.25	13.60	22.45	38.30	50.95	70.20	80.15	89.85
ART+INT	6.10	12.05	19.70	35.80	49.20	68.90	80.25	90.00
Puri & Sen	8.85	15.35	22.30	34.35	44.55	60.40	68.95	80.30
v.d.Waerden	10.45	17.10	26.45	39.45	51.75	67.55	76.80	86.15
ATS	7.60	13.05	19.10	27.95	38.80	53.95	65.30	77.55



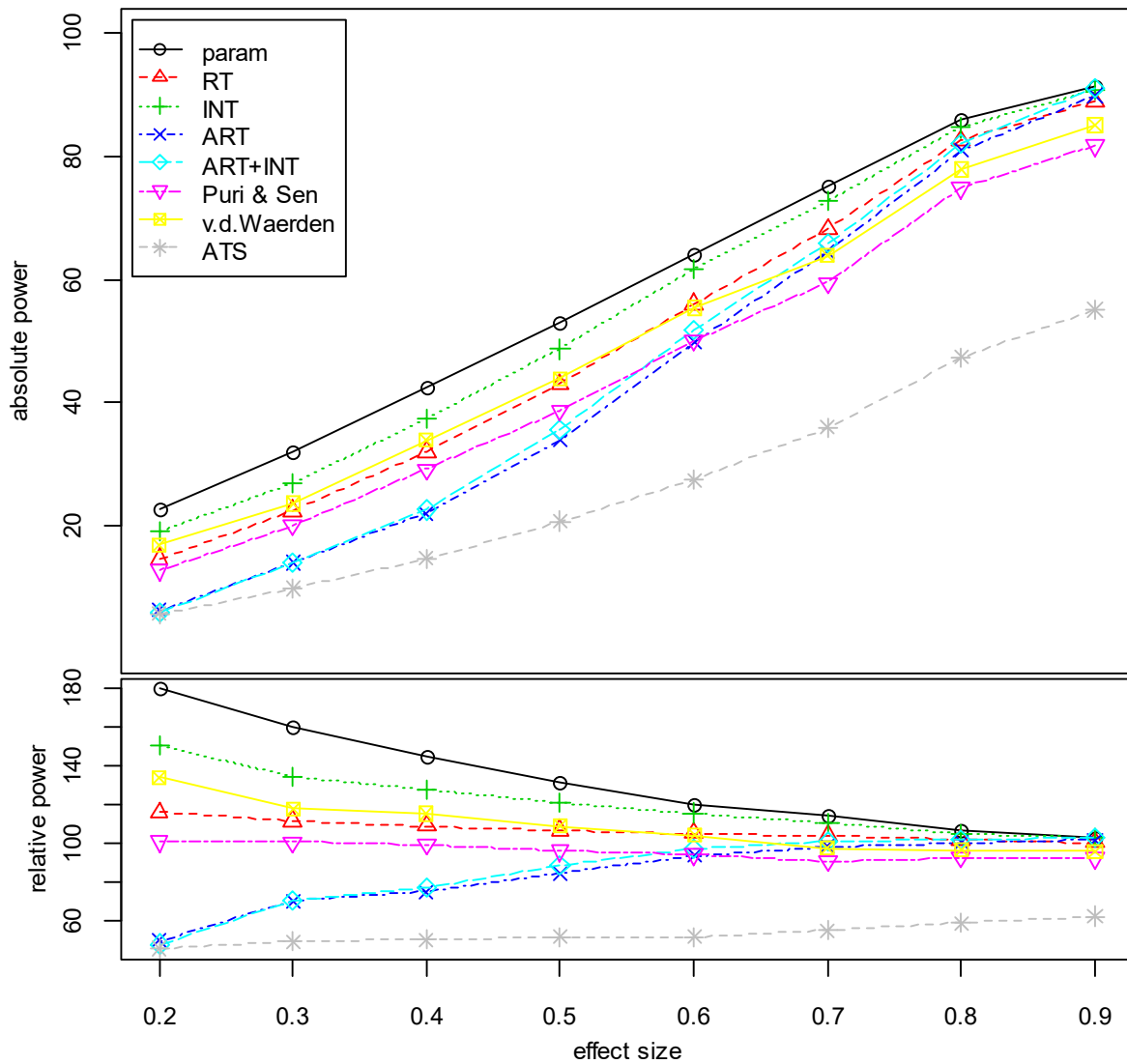
5. 4. 13 normal distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	3.35	8.45	19.05	33.20	51.30	70.80	87.45	94.90
RT	5.30	13.75	26.20	43.35	61.60	77.40	90.75	96.25
INT	3.70	9.85	20.05	35.85	54.25	72.35	87.95	94.75
ART	7.05	16.15	26.65	39.60	55.60	71.00	85.15	92.95
ART+INT	5.10	11.50	20.60	33.00	47.30	63.85	80.15	90.50
Puri & Sen	5.00	13.30	24.80	39.60	56.70	71.55	87.05	93.25
v.d.Waerden	3.50	9.70	18.60	32.80	48.85	65.55	82.90	91.60
ATS	9.10	21.30	35.80	52.95	70.35	82.90	93.20	96.90



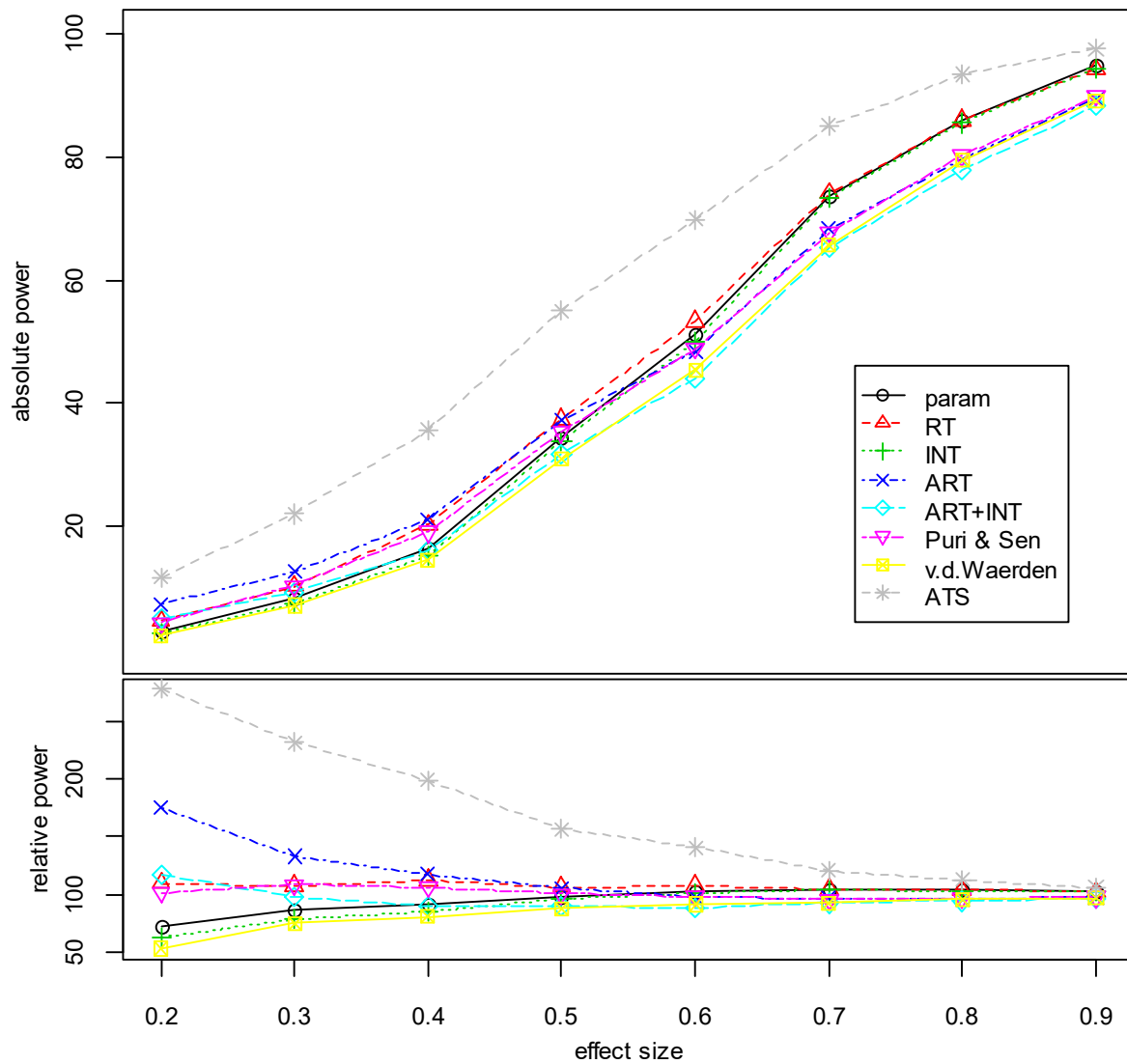
5. 4. 14 normal distribution - unequal variances (small n_i - large s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	22.75	32.10	42.60	52.90	64.15	75.25	85.85	91.45
RT	14.65	22.40	32.00	43.00	55.95	68.20	82.50	88.90
INT	19.05	26.90	37.45	48.65	61.60	72.65	84.60	90.75
ART	6.30	14.05	22.00	33.95	49.80	64.55	80.95	89.85
ART+INT	6.05	14.15	22.60	35.50	51.85	65.95	82.10	91.05
Puri & Sen	12.75	20.15	29.20	38.70	50.10	59.45	74.80	81.70
v.d.Waerden	16.95	23.60	33.85	43.85	55.35	63.85	77.85	85.05
ATS	5.75	9.85	14.70	20.75	27.45	35.95	47.40	55.10



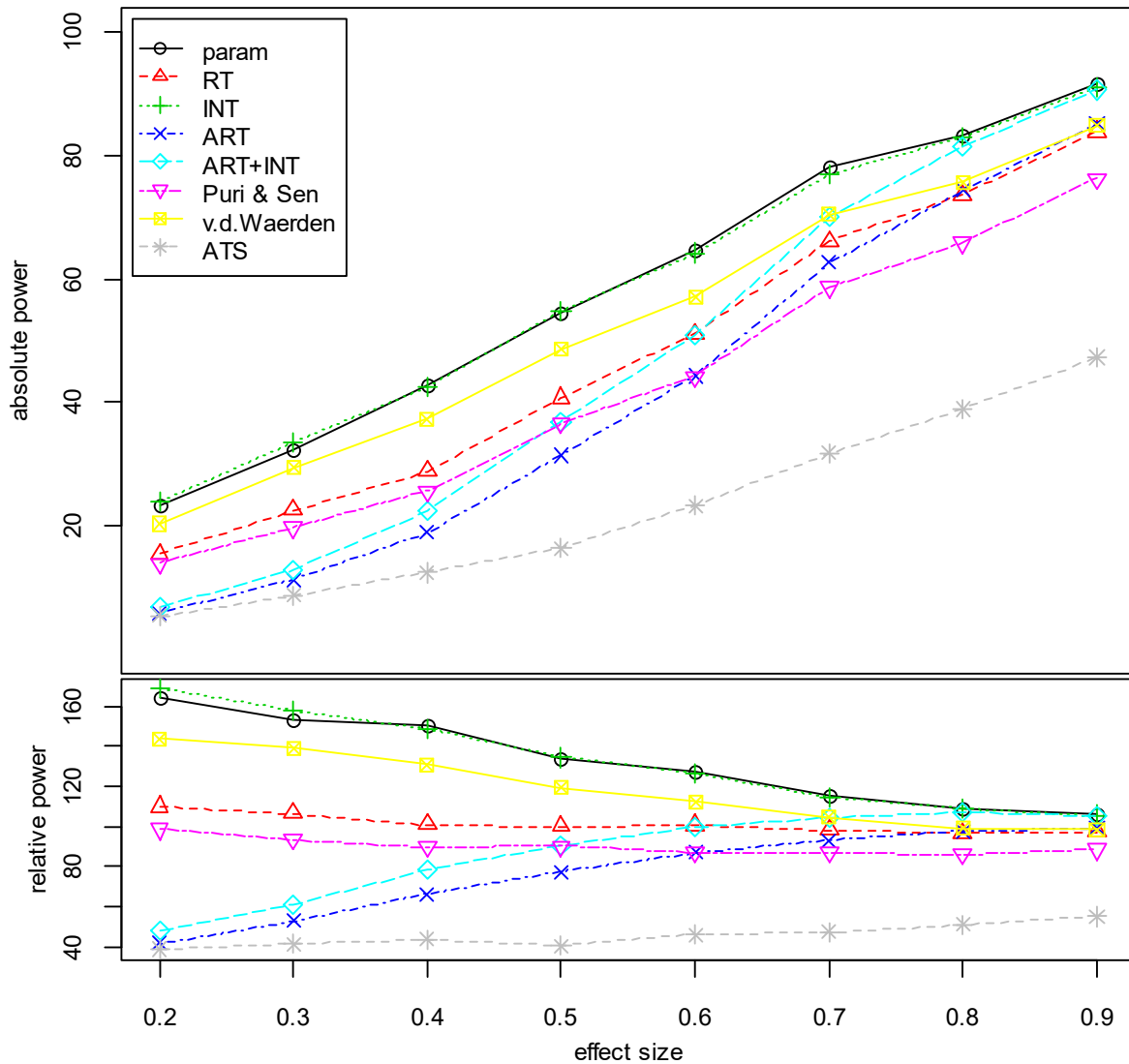
5. 4. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	3.05	8.25	16.40	34.40	51.30	73.65	86.00	95.00
RT	4.65	10.25	20.20	37.45	53.35	74.05	85.95	94.25
INT	2.65	7.45	15.35	33.90	50.10	73.25	85.50	94.40
ART	7.40	12.65	21.10	37.15	48.40	68.40	79.50	89.40
ART+INT	4.95	9.25	16.15	31.65	44.05	65.30	77.75	88.30
Puri & Sen	4.30	10.30	19.05	35.30	48.85	67.75	80.25	89.90
v.d.Waerden	2.25	7.15	14.50	30.95	45.40	65.70	79.45	89.15
ATS	11.75	22.00	35.65	55.00	69.80	85.15	93.40	97.50



5. 4. 16 left skewed distribution - unequal variances (small n_i - large s_j)

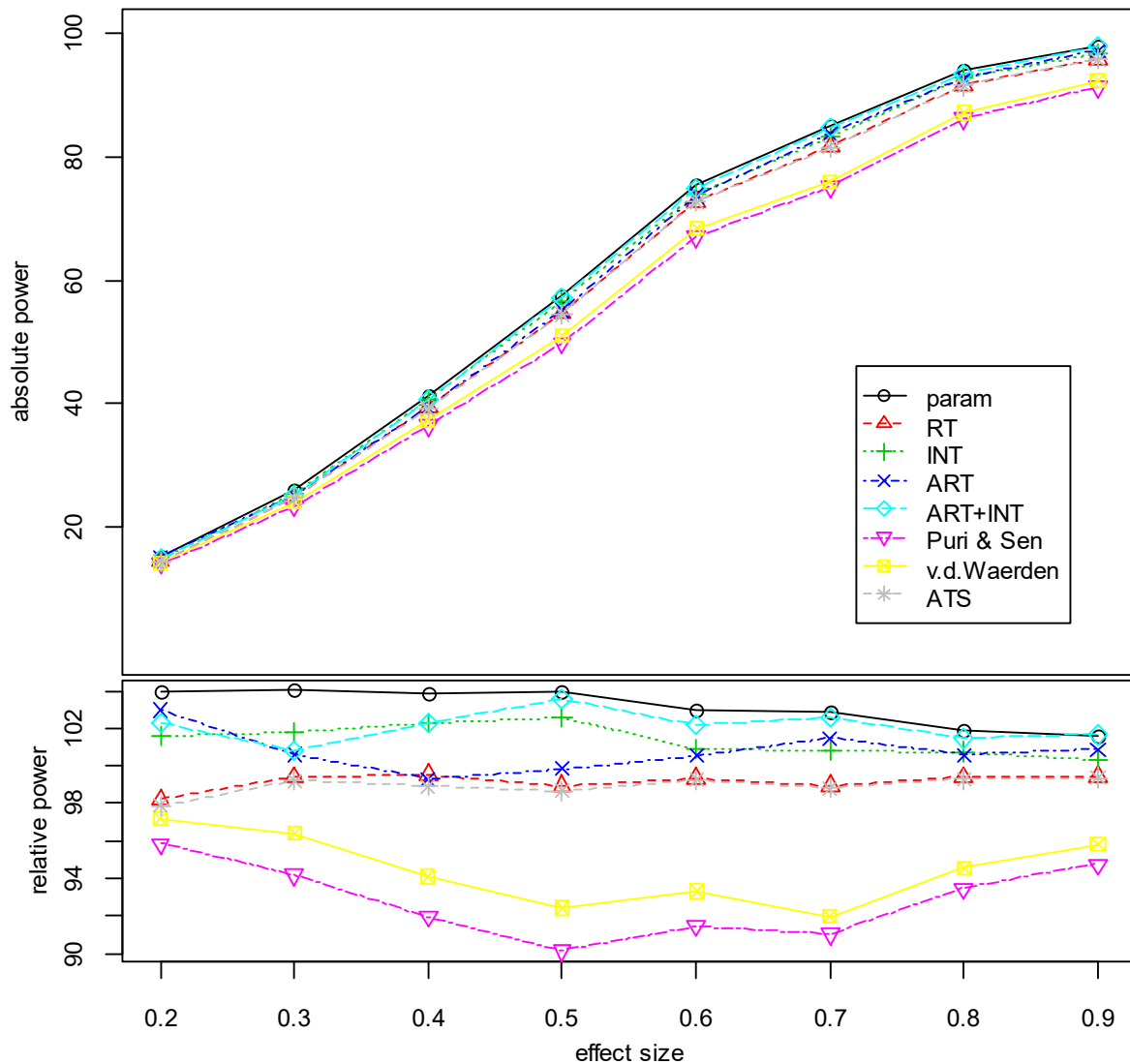
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	23.20	32.40	42.90	54.35	64.65	78.00	83.35	91.70
RT	15.50	22.55	28.85	40.75	51.10	66.10	73.60	83.85
INT	23.80	33.50	42.40	54.70	64.20	77.00	83.00	91.00
ART	5.90	11.20	18.90	31.40	44.30	62.70	74.40	85.15
ART+INT	6.75	12.90	22.40	36.85	50.80	70.15	81.50	90.60
Puri & Sen	13.90	19.75	25.60	36.65	44.15	58.65	65.80	76.20
v.d.Waerden	20.30	29.45	37.35	48.60	57.05	70.45	75.70	84.85
ATS	5.45	8.75	12.40	16.35	23.25	31.80	38.90	47.30



5. 5. Main effect A - B and interaction significant (equal $n_i=10$ / # levels = $2*4$)

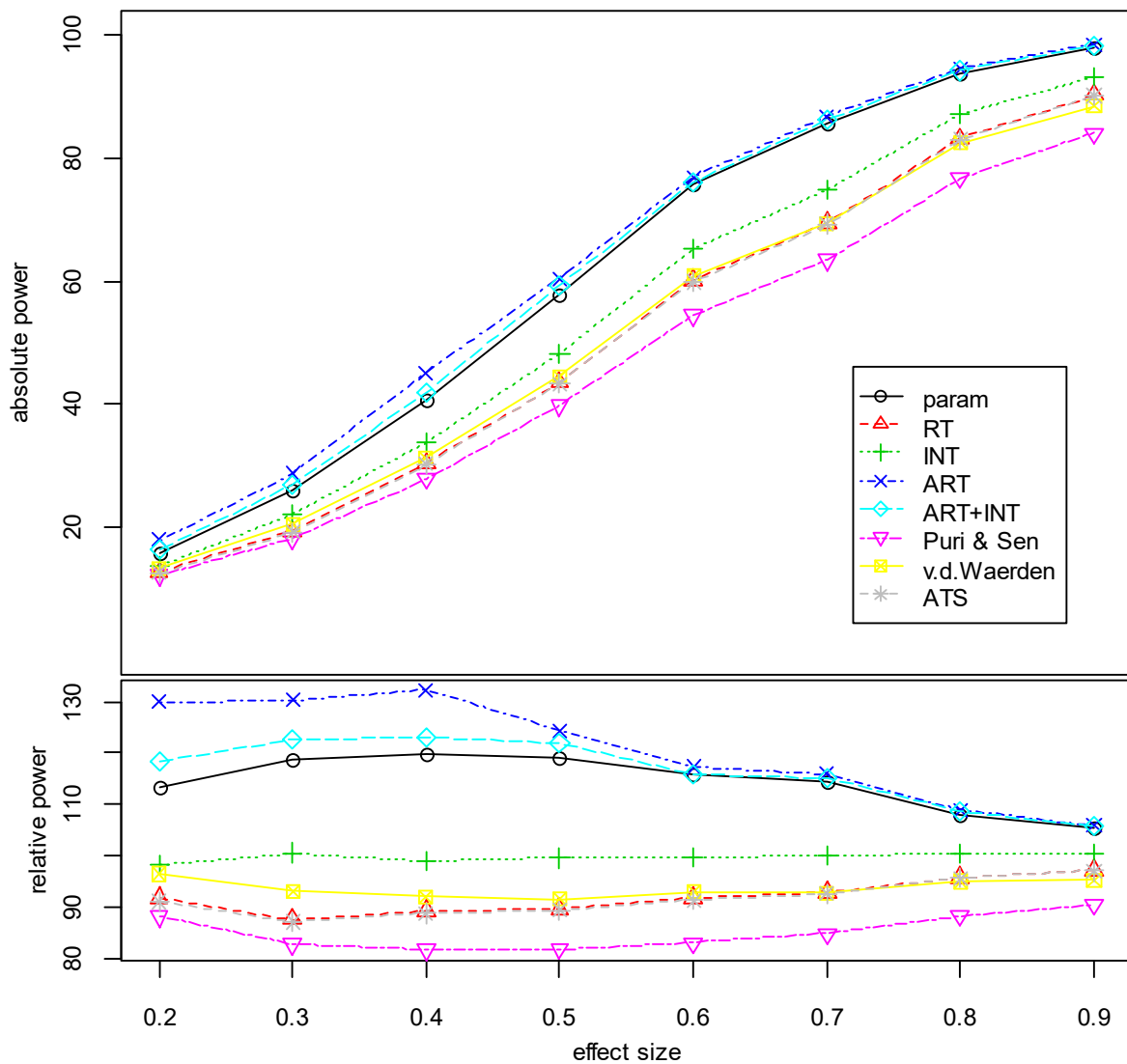
5. 5. 1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.30	25.90	41.15	57.35	75.45	84.90	93.90	97.85
RT	14.45	24.75	39.45	54.60	72.75	81.65	91.60	95.80
INT	14.95	25.35	40.55	56.60	73.90	83.20	92.85	96.70
ART	15.15	25.05	39.35	55.10	73.65	83.75	92.70	97.20
ART+INT	15.05	25.10	40.55	57.15	74.85	84.65	93.50	97.95
Puri & Sen	14.10	23.45	36.45	49.75	67.00	75.15	86.15	91.30
v.d.Waerden	14.30	24.00	37.30	51.00	68.35	75.90	87.15	92.30
ATS	14.40	24.70	39.20	54.45	72.70	81.55	91.50	95.75



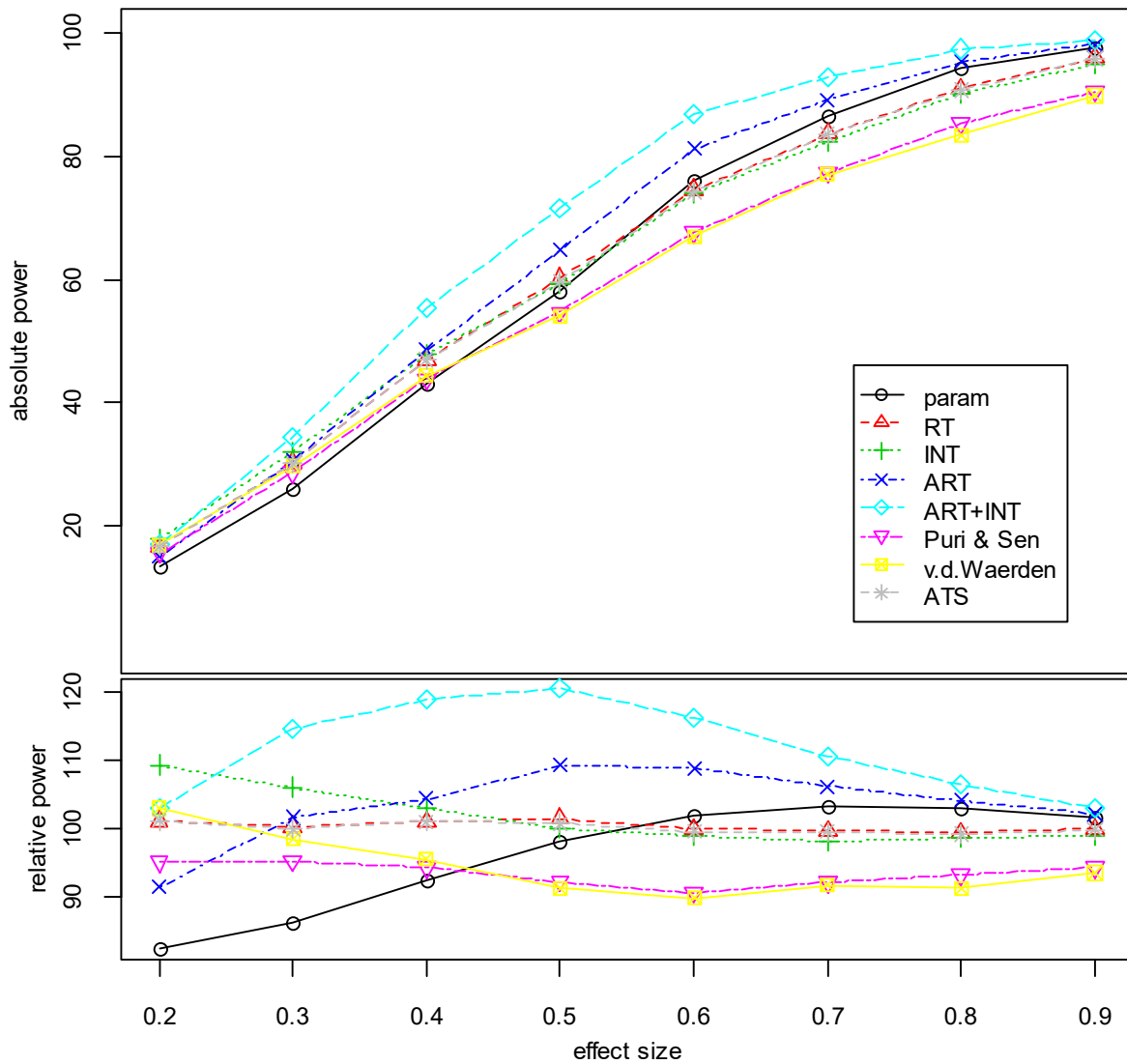
5.5.3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.75	26.15	40.80	57.85	75.85	85.55	93.70	98.00
RT	12.75	19.30	30.45	43.50	60.15	69.50	83.15	90.25
INT	13.65	22.15	33.70	48.30	65.25	74.80	87.20	93.15
ART	18.05	28.70	45.05	60.35	76.85	86.75	94.50	98.40
ART+INT	16.45	27.00	41.90	59.15	75.95	86.20	94.20	98.15
Puri & Sen	12.25	18.25	27.85	39.75	54.45	63.45	76.70	84.00
v.d.Waerden	13.40	20.50	31.35	44.45	60.90	69.40	82.45	88.45
ATS	12.65	19.20	30.25	43.35	59.85	69.30	83.05	90.10



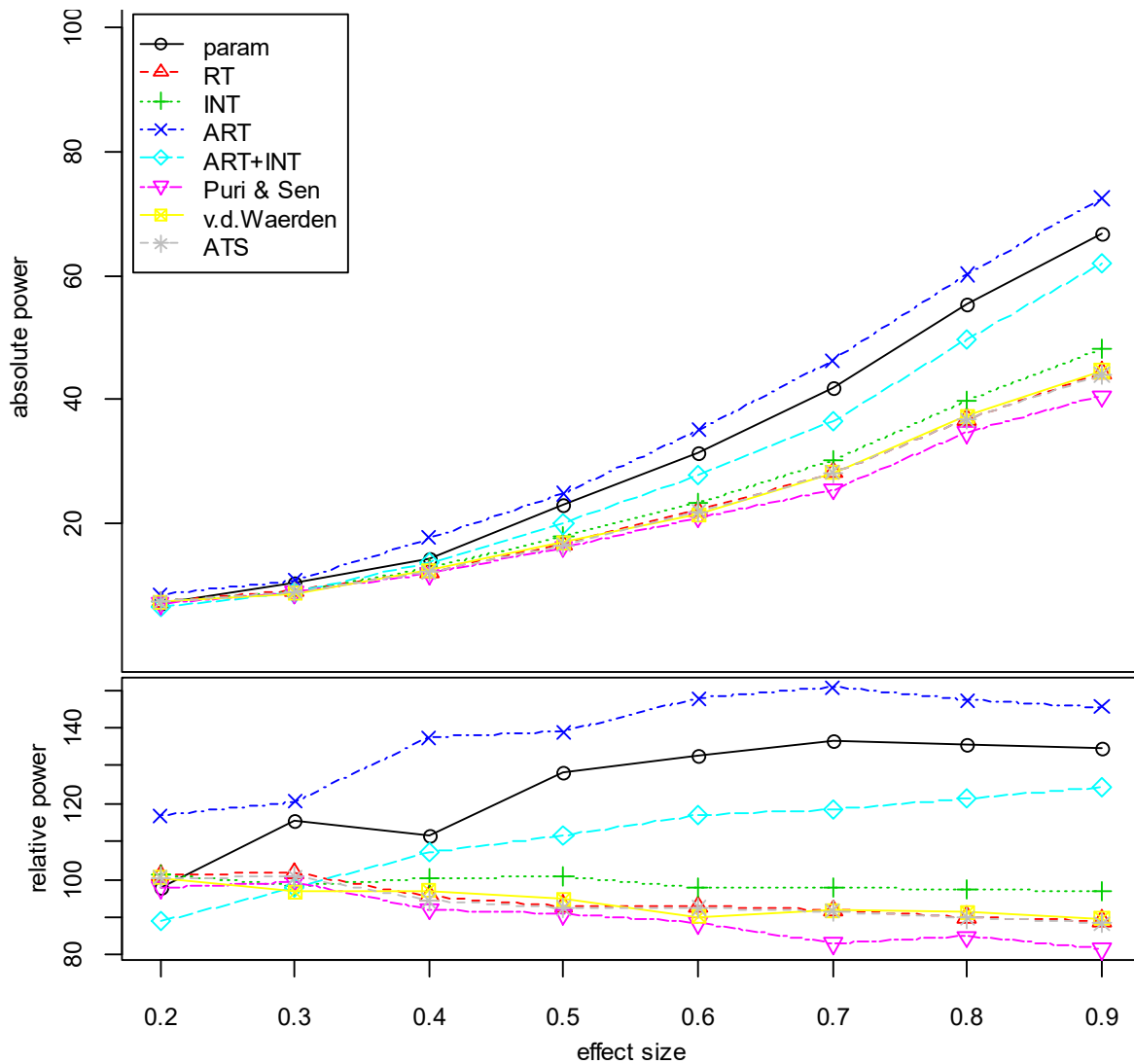
5.5.4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.55	25.95	43.05	58.20	76.05	86.65	94.35	97.65
RT	16.65	30.20	47.00	60.15	74.55	83.65	90.95	95.95
INT	18.00	31.95	47.90	59.25	73.85	82.30	90.25	95.05
ART	15.05	30.60	48.60	64.80	81.25	89.15	95.30	98.15
ART+INT	16.95	34.50	55.35	71.45	86.75	92.80	97.45	98.90
Puri & Sen	15.65	28.65	43.85	54.65	67.60	77.30	85.30	90.55
v.d.Waerden	16.95	29.65	44.40	54.05	67.00	77.00	83.50	89.80
ATS	16.65	30.10	47.00	59.70	74.25	83.55	90.75	95.85



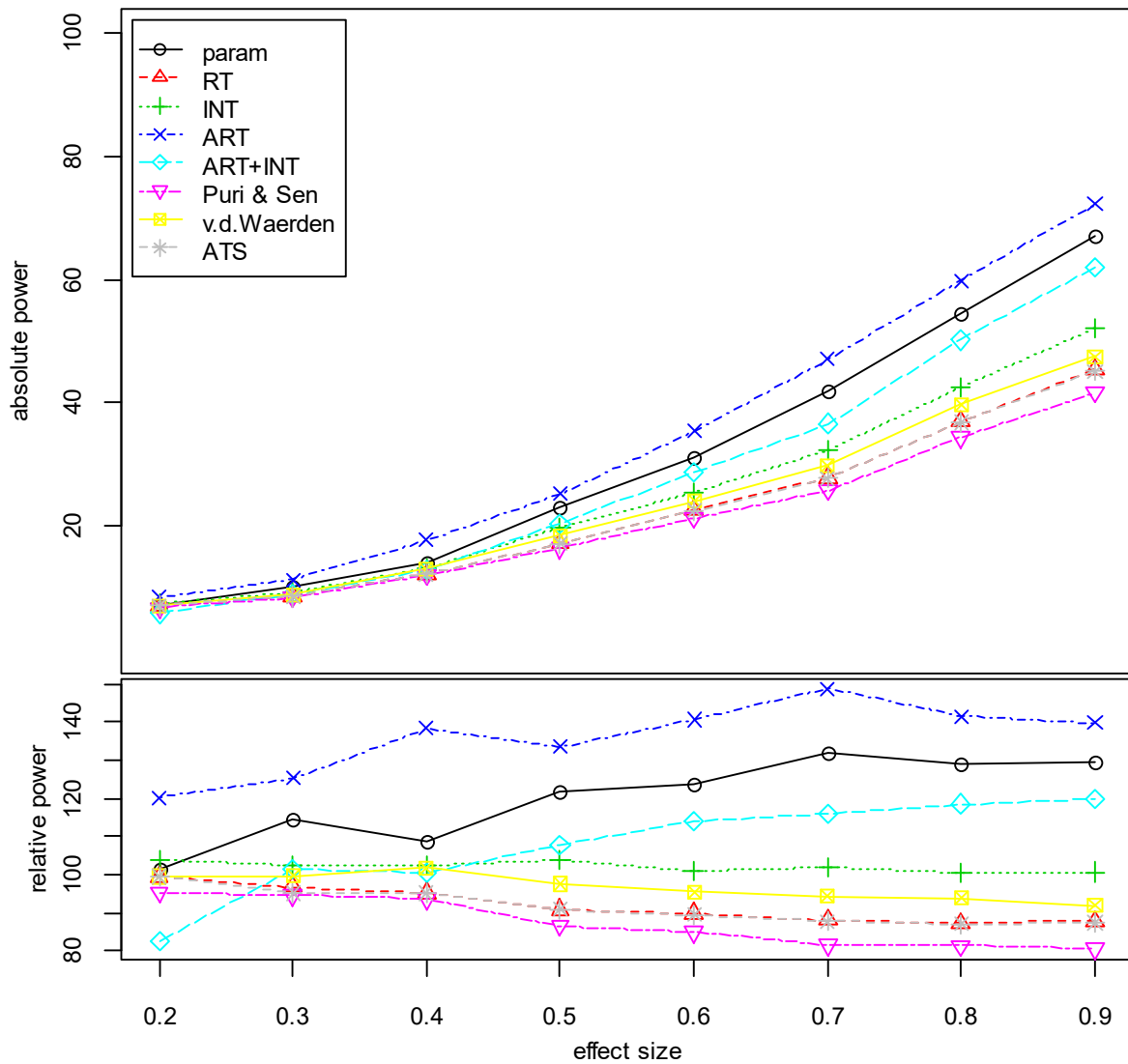
5.5.5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.15	10.40	14.35	22.9	31.50	42.00	55.40	66.90
RT	7.40	9.15	12.30	16.6	22.05	28.25	36.80	44.35
INT	7.40	8.85	12.90	18.0	23.20	30.15	39.80	48.15
ART	8.55	10.85	17.70	24.8	35.10	46.35	60.20	72.45
ART+INT	6.50	8.80	13.80	19.9	27.80	36.40	49.60	61.95
Puri & Sen	7.15	8.95	11.85	16.2	21.00	25.55	34.70	40.60
v.d.Waerden	7.35	8.70	12.50	16.9	21.40	28.25	37.35	44.60
ATS	7.35	9.05	12.15	16.5	21.95	28.20	36.70	44.00



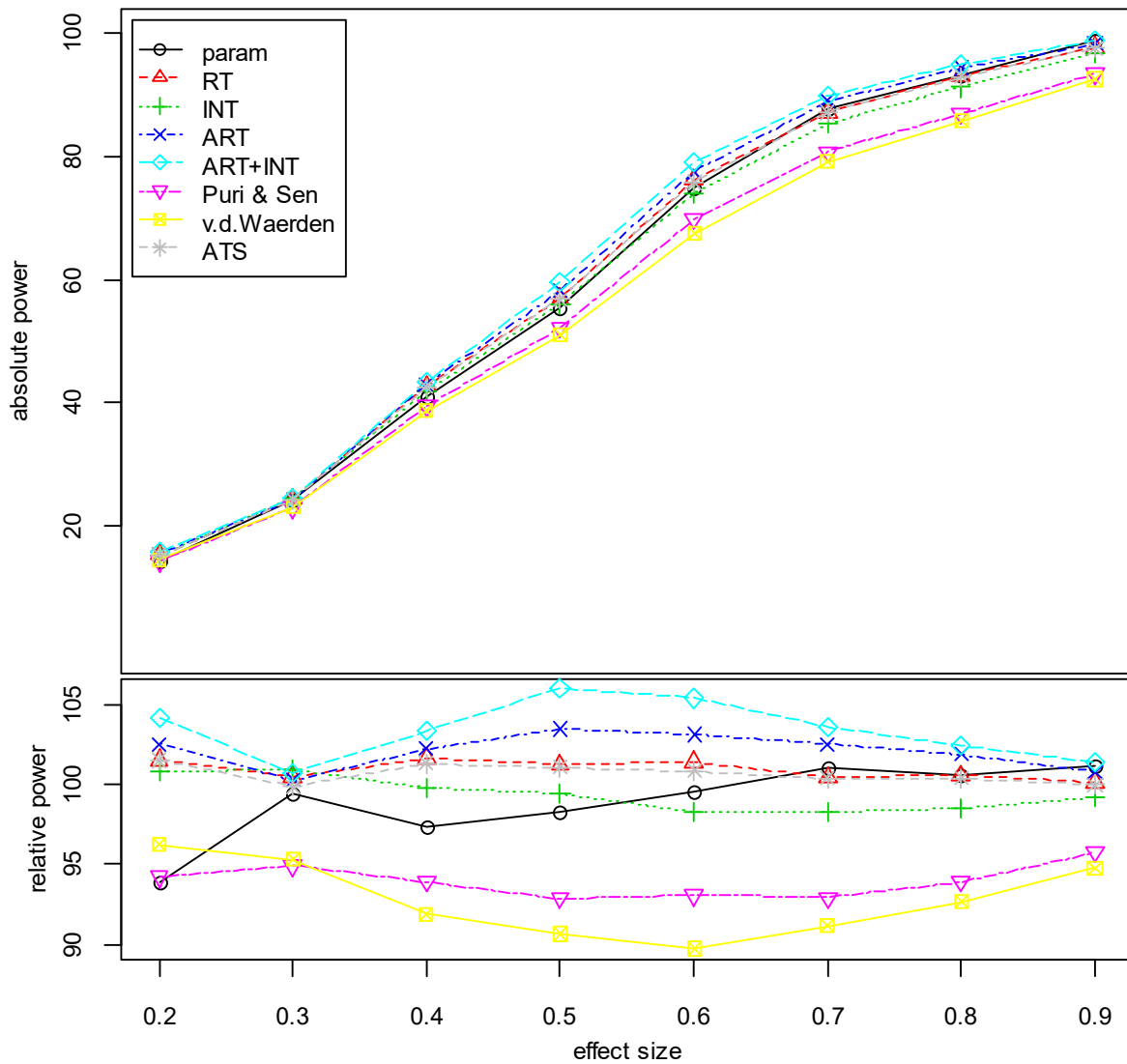
5.5.6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.15	10.25	13.95	22.95	31.15	41.80	54.60	67.00
RT	7.00	8.65	12.20	17.15	22.60	27.85	36.90	45.35
INT	7.30	9.15	13.15	19.60	25.40	32.25	42.45	52.05
ART	8.45	11.20	17.75	25.20	35.40	47.05	59.80	72.30
ART+INT	5.80	9.05	12.90	20.35	28.65	36.65	50.15	61.90
Puri & Sen	6.70	8.45	12.00	16.35	21.35	25.80	34.40	41.65
v.d.Waerden	7.00	8.90	13.05	18.40	24.05	29.85	39.70	47.55
ATS	7.00	8.50	12.20	17.15	22.50	27.75	36.80	45.15



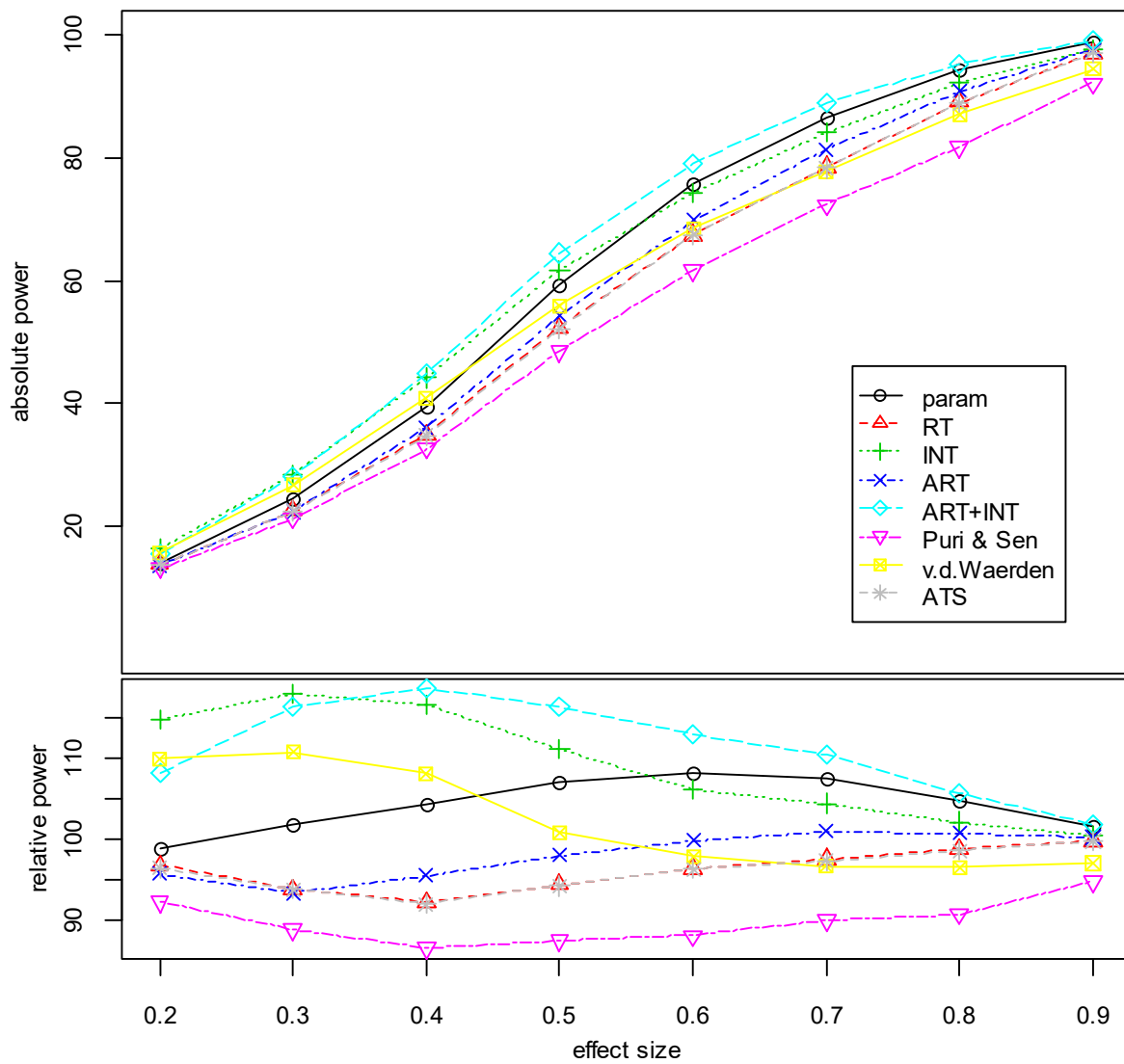
5.5.7 lognormal distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	14.20	24.10	40.95	55.25	74.75	87.70	93.15	98.70
RT	15.35	24.35	42.75	56.90	76.15	87.20	93.05	97.70
INT	15.25	24.45	41.95	55.90	73.85	85.35	91.20	96.80
ART	15.50	24.30	43.00	58.15	77.45	89.00	94.30	98.35
ART+INT	15.75	24.40	43.45	59.55	79.15	89.95	94.80	98.90
Puri & Sen	14.25	23.00	39.50	52.20	69.90	80.70	86.95	93.45
v.d.Waerden	14.55	23.10	38.65	50.95	67.40	79.15	85.75	92.50
ATS	15.35	24.20	42.60	56.80	75.75	87.15	92.90	97.55



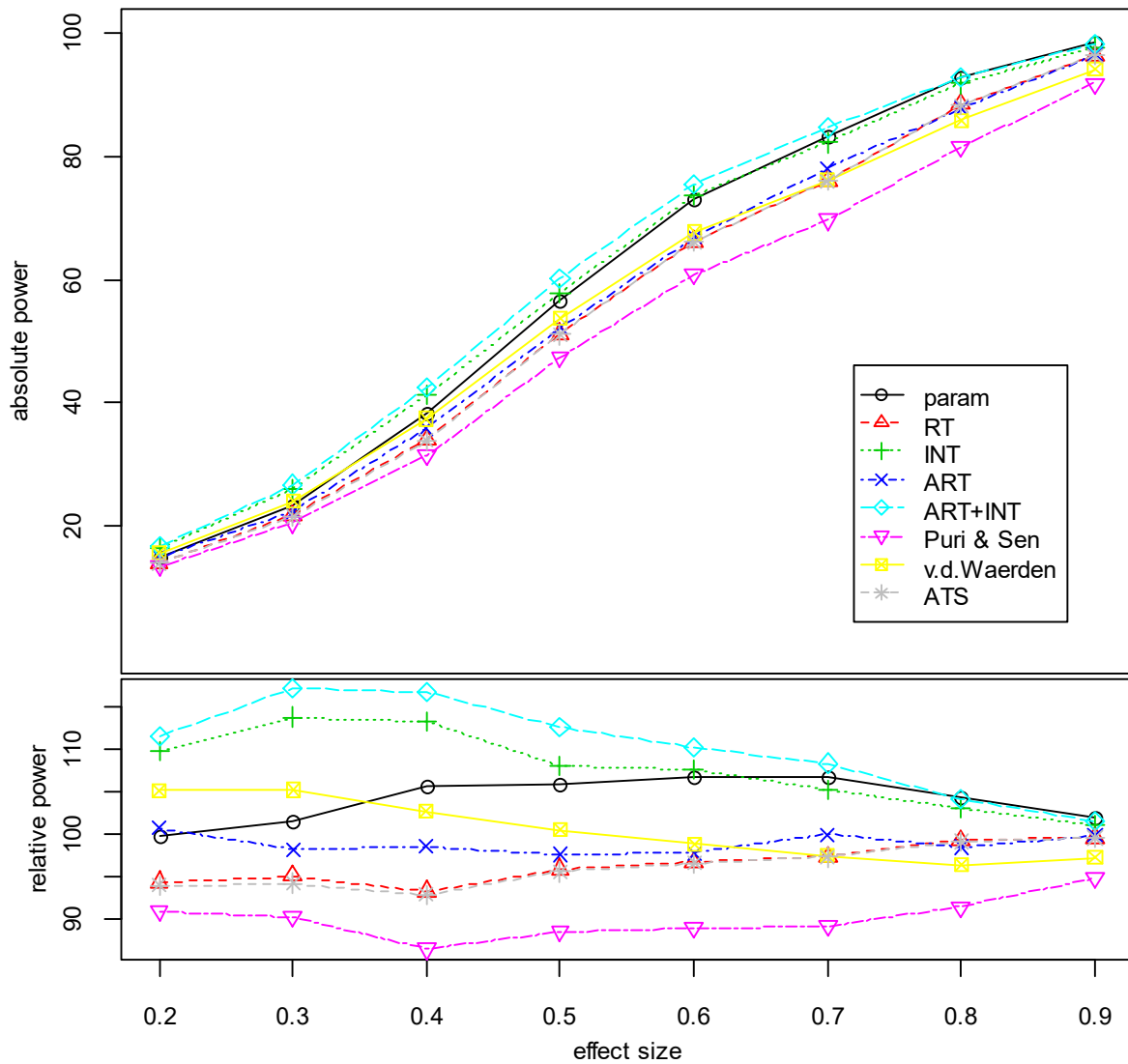
5.5.8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	14.15	24.50	39.50	59.25	75.80	86.55	94.45	98.85
RT	13.85	22.55	34.90	52.25	67.45	78.45	89.05	97.05
INT	16.45	28.40	44.15	61.60	74.35	84.05	92.10	97.70
ART	13.70	22.45	36.15	54.25	69.90	81.30	90.80	97.50
ART+INT	15.50	28.00	44.90	64.50	79.10	88.90	95.30	99.10
Puri & Sen	13.20	21.35	32.75	48.40	61.65	72.35	81.75	92.10
v.d.Waerden	15.75	26.65	40.95	55.85	68.50	77.80	87.05	94.40
ATS	13.80	22.55	34.80	52.15	67.40	78.30	88.90	97.05



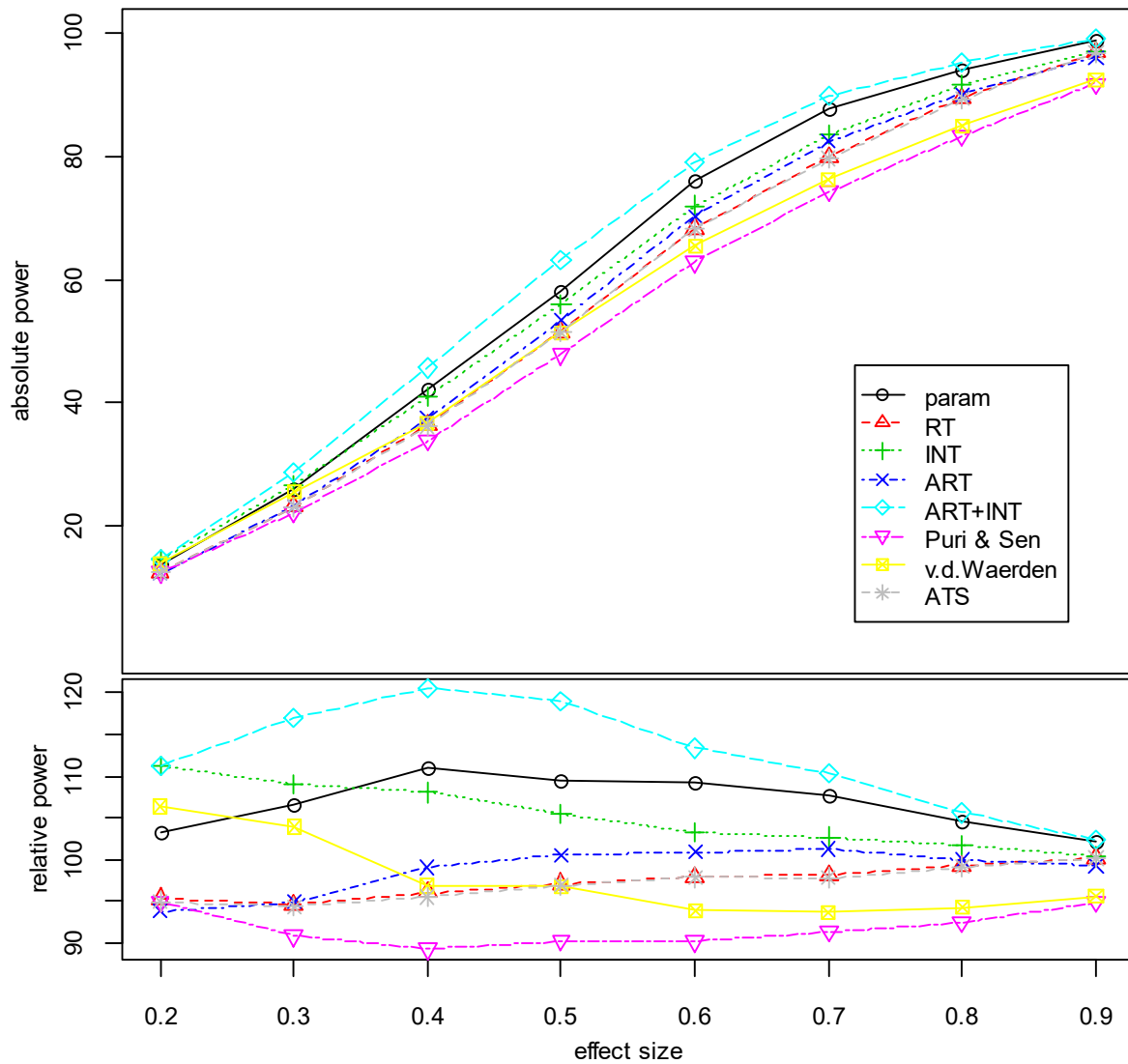
5.5.9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	14.85	23.20	38.45	56.55	73.00	83.35	92.85	98.60
RT	14.05	21.75	34.00	51.25	66.15	76.05	88.45	96.30
INT	16.35	26.00	41.25	57.70	73.55	82.20	91.80	97.75
ART	15.00	22.45	35.90	52.15	66.90	78.05	87.75	96.55
ART+INT	16.60	26.75	42.50	60.10	75.35	84.60	92.75	98.20
Puri & Sen	13.55	20.65	31.55	47.35	60.90	69.70	81.50	91.80
v.d.Waerden	15.65	24.05	37.40	53.70	67.65	76.10	85.90	94.10
ATS	14.00	21.55	33.85	51.05	66.10	76.00	88.30	96.30



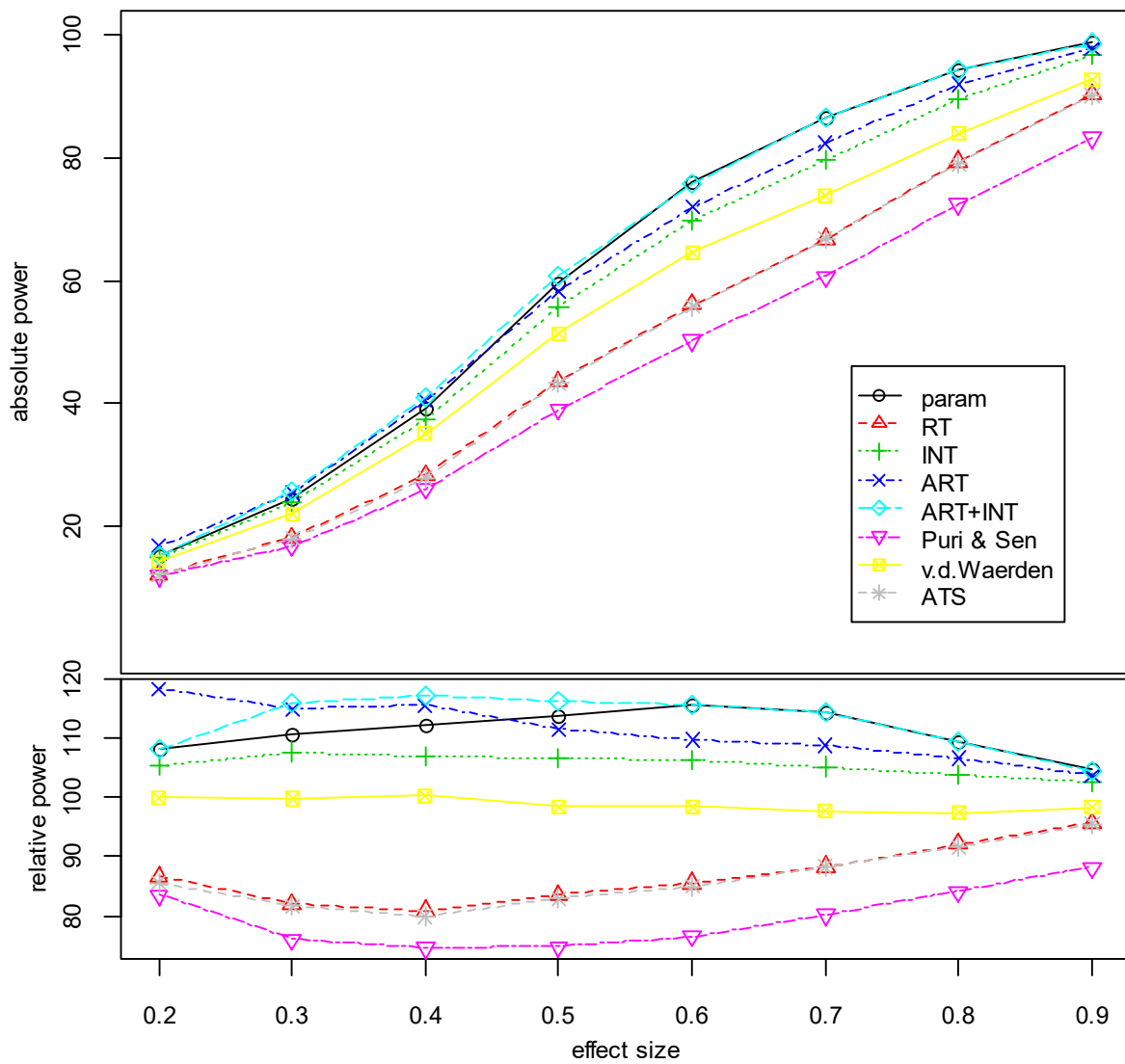
5.5.10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.60	26.10	42.10	58.05	76.15	87.60	94.15	98.80
RT	12.55	23.15	36.40	51.50	68.25	79.90	89.40	96.85
INT	14.65	26.70	40.95	55.95	72.00	83.60	91.60	97.00
ART	12.35	23.25	37.55	53.35	70.30	82.45	90.05	96.00
ART+INT	14.65	28.65	45.65	63.10	79.00	89.80	95.15	99.00
Puri & Sen	12.50	22.25	33.85	47.90	62.85	74.40	83.35	91.80
v.d.Waerden	14.00	25.45	36.70	51.35	65.45	76.25	84.95	92.40
ATS	12.50	23.10	36.20	51.45	68.20	79.65	89.35	96.85



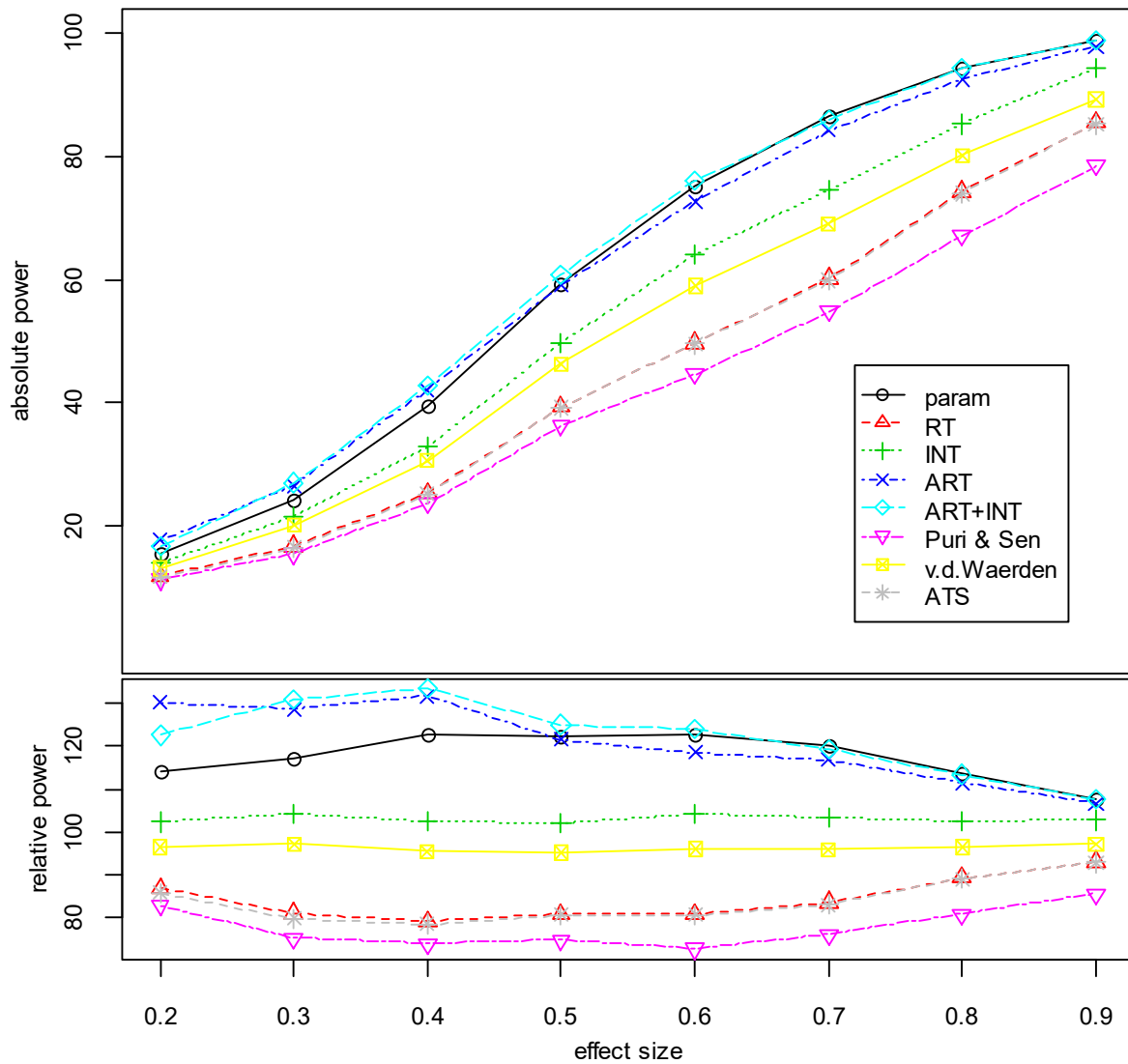
5. 5. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.35	24.45	39.25	59.50	75.90	86.55	94.35	98.95
RT	12.30	18.10	28.30	43.60	56.10	66.85	79.40	90.25
INT	14.95	23.80	37.40	55.75	69.80	79.60	89.50	96.70
ART	16.80	25.40	40.45	58.25	72.00	82.35	91.90	97.85
ART+INT	15.35	25.65	41.00	60.80	75.85	86.50	94.20	98.65
Puri & Sen	11.85	16.80	26.10	39.05	50.25	60.65	72.45	83.20
v.d.Waerden	14.20	22.05	35.10	51.40	64.60	73.90	83.95	92.75
ATS	12.15	18.05	27.95	43.30	55.75	66.80	78.95	90.10



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

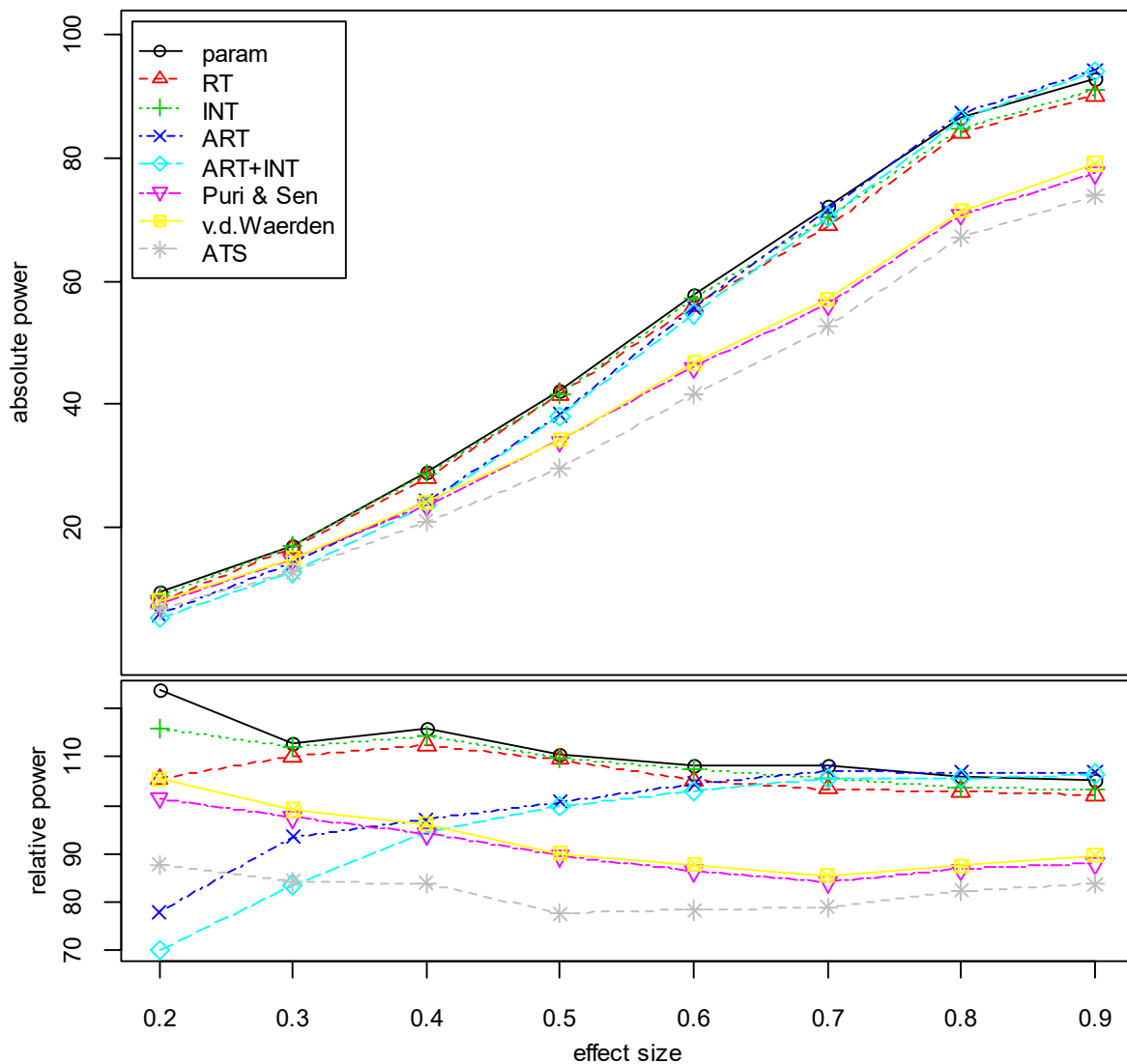
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.55	24.20	39.35	59.35	75.20	86.60	94.45	98.95
RT	11.85	16.75	25.35	39.30	49.70	60.25	74.25	85.45
INT	13.95	21.55	32.80	49.65	64.00	74.45	85.20	94.25
ART	17.75	26.55	42.15	59.05	72.70	84.20	92.50	97.85
ART+INT	16.70	27.05	42.70	60.75	76.00	86.00	94.25	98.90
Puri & Sen	11.30	15.55	23.70	36.35	44.70	54.85	67.20	78.55
v.d.Waerden	13.15	20.10	30.60	46.25	58.95	69.10	80.15	89.25
ATS	11.70	16.50	25.20	39.20	49.55	59.85	73.95	85.20



5. 6. Main effect A - B and interaction significant (unequal $n_i \sim 5$ / # levels = 4×5)

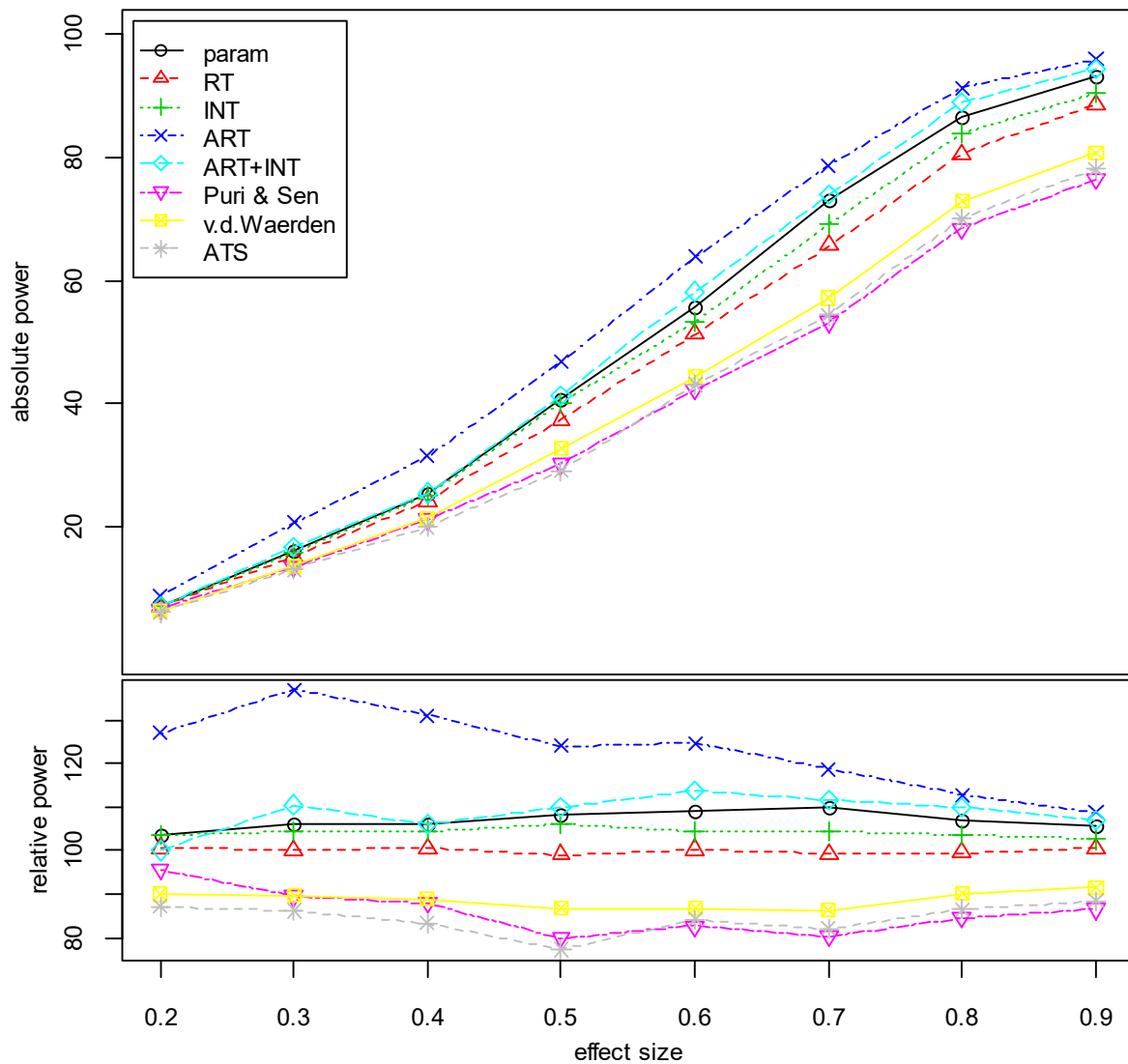
5. 6. 1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.45	17.15	29.05	42.05	57.65	72.20	86.50	92.70
RT	8.05	16.70	28.20	41.65	55.85	69.00	84.05	90.15
INT	8.85	17.00	28.65	41.70	57.20	70.35	84.70	90.95
ART	5.95	14.20	24.35	38.30	55.55	71.55	87.20	94.20
ART+INT	5.35	12.70	23.65	37.90	54.65	70.50	86.25	93.95
Puri & Sen	7.75	14.80	23.60	34.00	45.95	56.15	70.75	77.55
v.d.Waerden	8.05	15.05	24.10	34.20	46.70	57.05	71.40	79.05
ATS	6.70	12.80	21.05	29.50	41.65	52.70	67.20	73.85



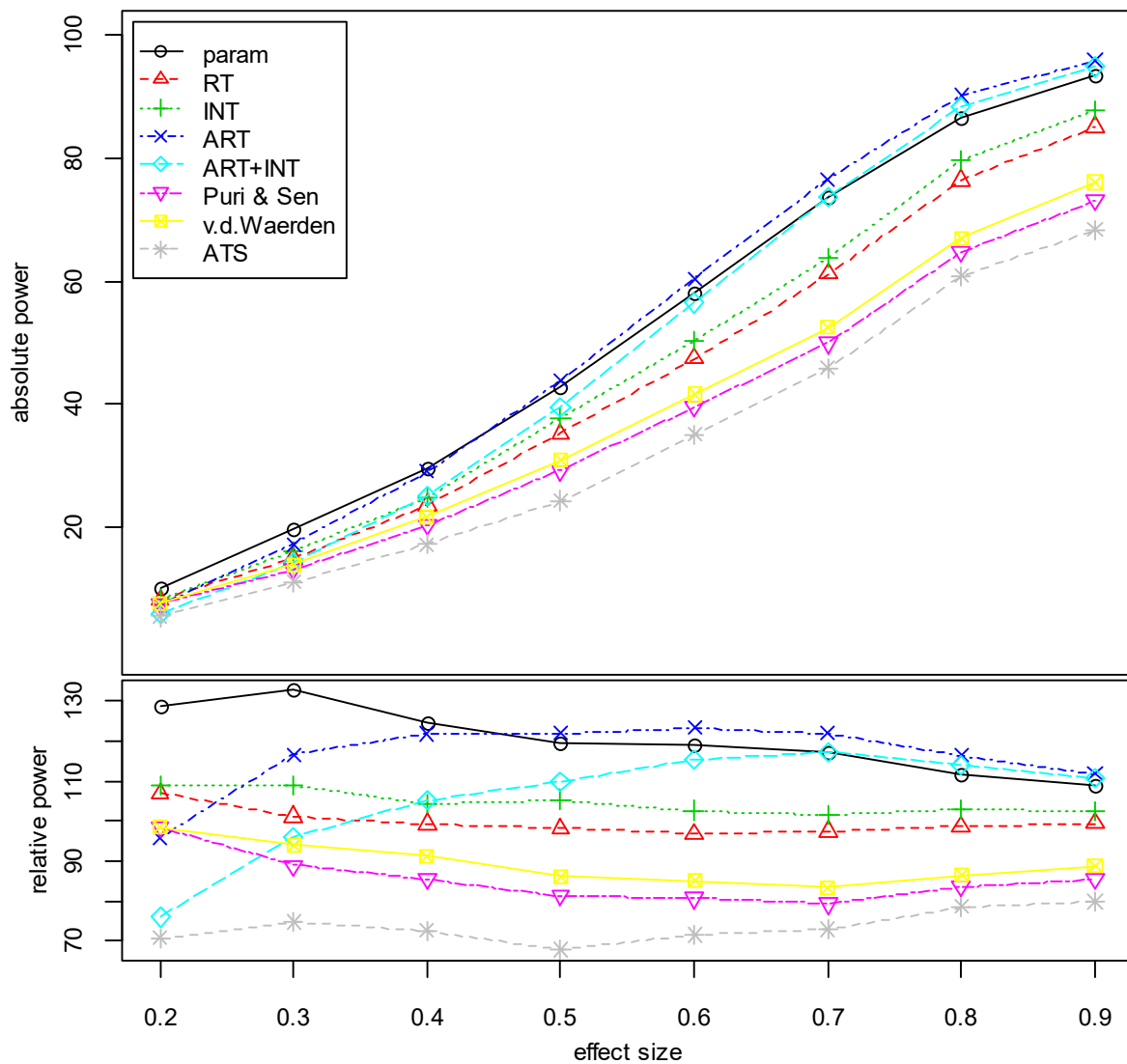
5. 6. 2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.25	16.05	25.55	40.75	55.80	72.95	86.50	93.15
RT	7.05	15.15	24.20	37.35	51.30	65.70	80.50	88.60
INT	7.25	15.80	25.20	40.00	53.40	69.15	83.75	90.50
ART	8.90	20.75	31.55	46.75	63.85	78.65	91.25	95.95
ART+INT	7.00	16.75	25.55	41.40	58.20	74.00	88.90	94.35
Puri & Sen	6.70	13.55	21.20	30.15	42.30	53.25	68.45	76.40
v.d.Waerden	6.30	13.60	21.40	32.65	44.40	57.15	72.90	80.75
ATS	6.10	13.05	20.05	29.10	43.10	54.35	70.00	78.05



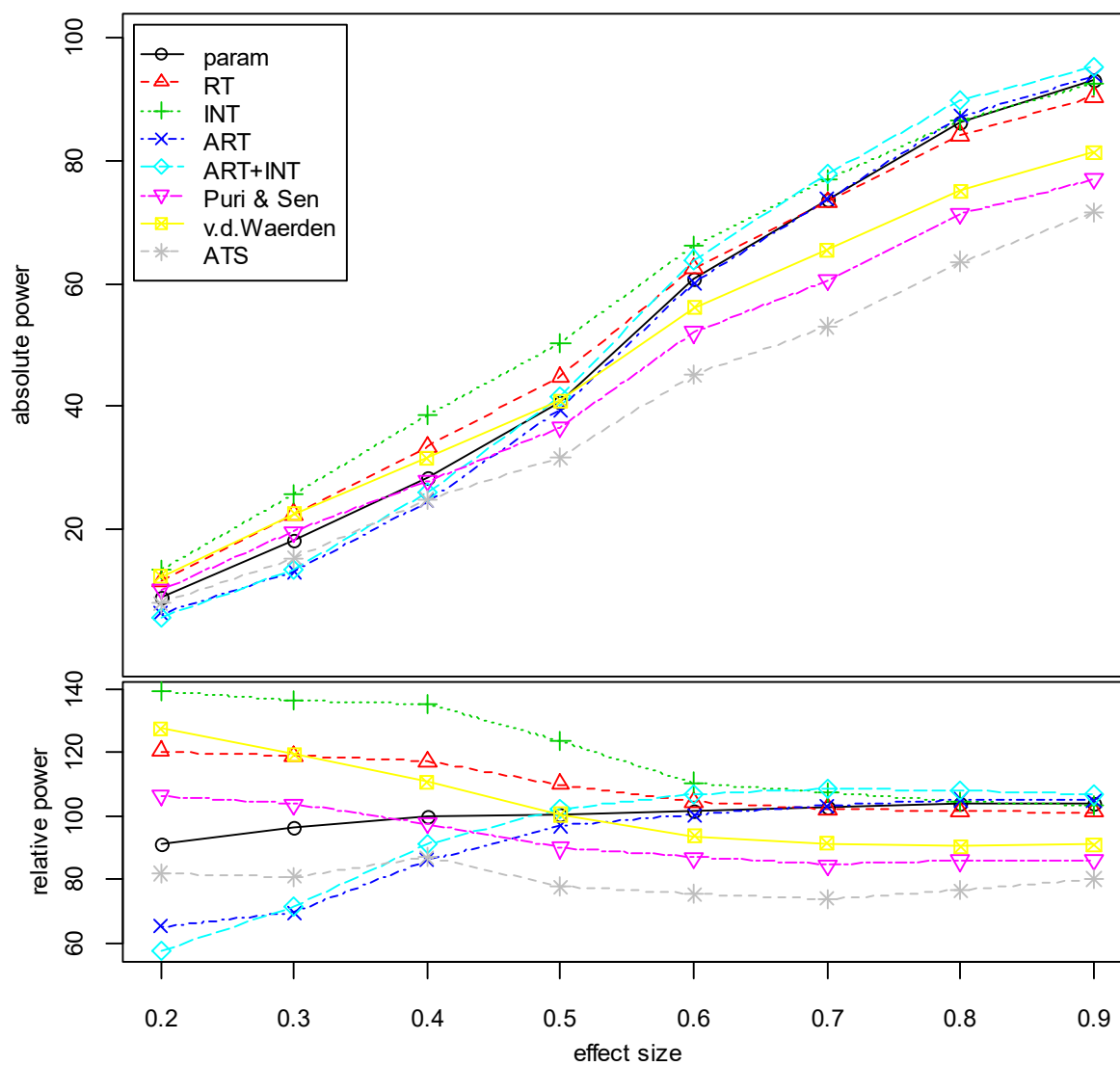
5. 6. 3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.00	19.70	29.70	42.85	58.20	73.70	86.60	93.30
RT	8.30	15.00	23.65	35.25	47.40	61.20	76.40	85.10
INT	8.45	16.15	24.85	37.85	50.25	63.80	79.55	87.80
ART	7.45	17.30	29.05	43.80	60.35	76.60	90.15	95.80
ART+INT	5.90	14.25	25.05	39.45	56.45	73.75	88.30	94.80
Puri & Sen	7.65	13.20	20.40	29.20	39.55	49.90	64.80	73.15
v.d.Waerden	7.65	13.95	21.75	30.95	41.60	52.45	67.00	76.05
ATS	5.50	11.10	17.30	24.35	35.05	45.85	60.85	68.35



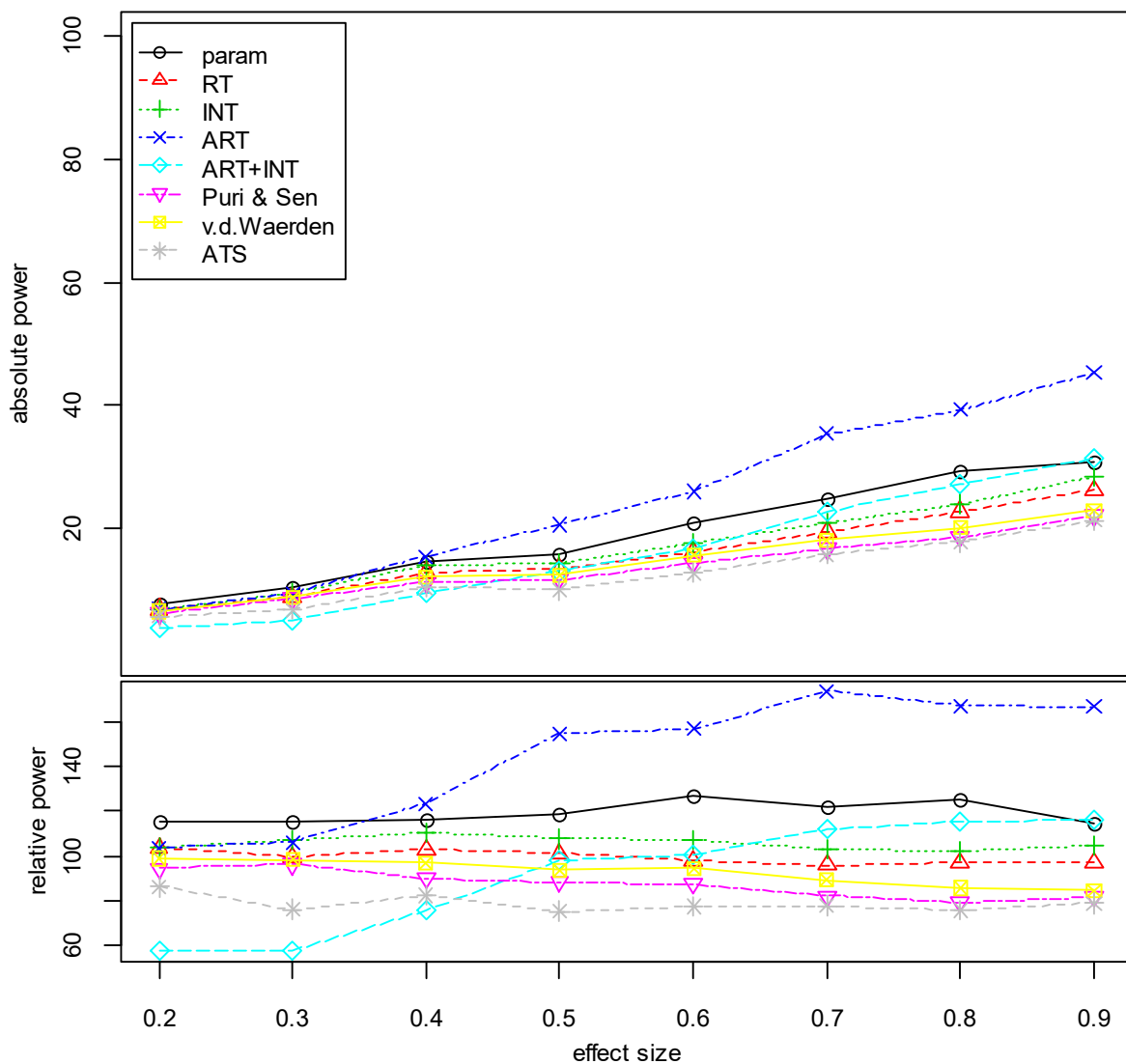
5.6.4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.80	18.25	28.50	40.80	60.90	73.75	86.15	93.05
RT	11.60	22.45	33.40	44.75	62.45	73.25	84.15	90.50
INT	13.40	25.75	38.55	50.30	66.20	76.80	86.55	92.40
ART	6.30	13.15	24.60	39.45	60.10	73.80	87.20	93.80
ART+INT	5.55	13.55	26.05	41.60	63.90	77.80	89.75	95.20
Puri & Sen	10.25	19.60	27.90	36.65	52.05	60.55	71.35	77.00
v.d.Waerden	12.30	22.55	31.60	40.90	56.05	65.45	75.05	81.40
ATS	7.90	15.30	24.80	31.60	45.15	53.00	63.60	71.65



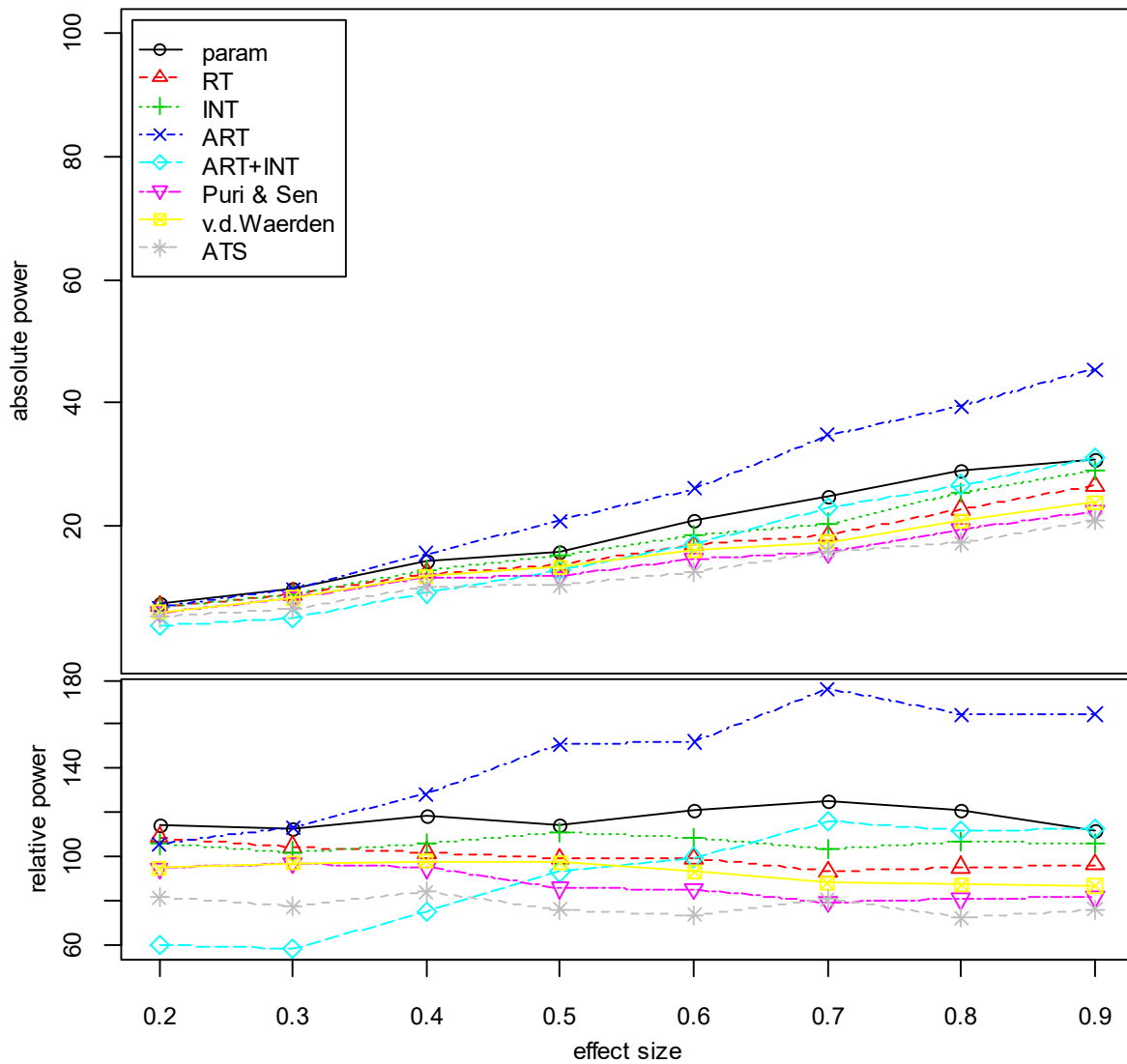
5.6.5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.65	10.30	14.65	15.75	21.05	24.80	29.40	30.95
RT	6.85	8.90	12.90	13.45	16.20	19.50	22.75	26.25
INT	6.85	9.60	13.90	14.30	17.70	21.00	24.05	28.30
ART	6.85	9.50	15.50	20.60	26.00	35.35	39.30	45.25
ART+INT	3.80	5.15	9.55	13.00	16.65	22.75	27.15	31.50
Puri & Sen	6.25	8.60	11.30	11.75	14.45	16.65	18.65	22.10
v.d.Waerden	6.55	8.80	12.20	12.45	15.65	18.10	20.10	22.90
ATS	5.70	6.80	10.35	10.00	12.80	15.80	17.80	21.30



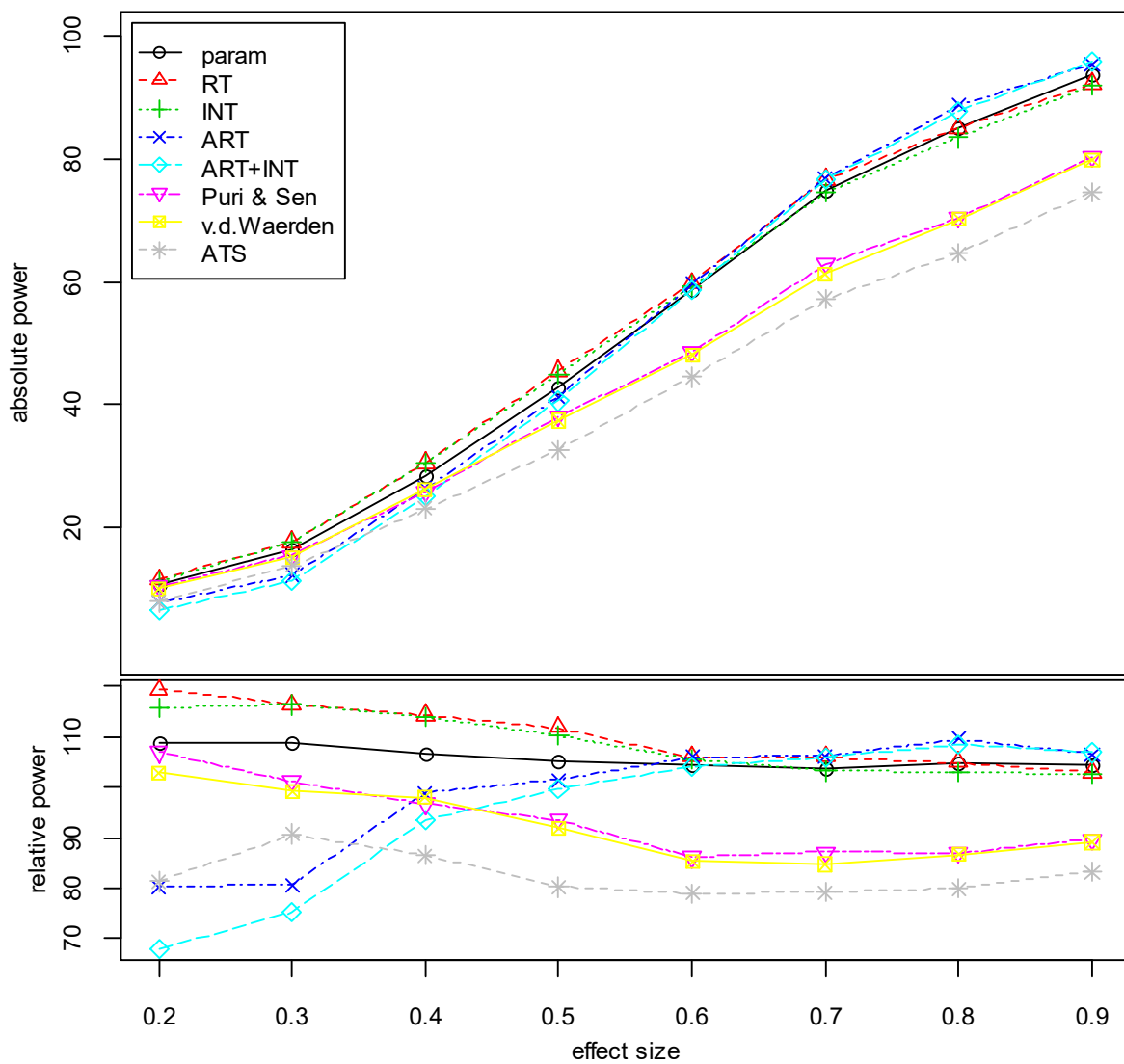
5. 6. 6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.30	9.70	14.40	15.80	20.85	24.80	28.95	30.90
RT	6.95	9.00	12.35	13.65	17.00	18.45	22.80	26.50
INT	6.75	8.80	12.85	15.30	18.65	20.45	25.50	29.10
ART	6.75	9.75	15.55	20.80	26.10	34.85	39.40	45.40
ART+INT	3.80	5.00	9.10	12.80	17.10	22.95	26.75	31.00
Puri & Sen	6.05	8.35	11.50	11.80	14.60	15.70	19.35	22.45
v.d.Waerden	6.05	8.35	11.85	13.40	16.00	17.40	20.85	23.85
ATS	5.20	6.65	10.15	10.45	12.60	15.90	17.25	20.95



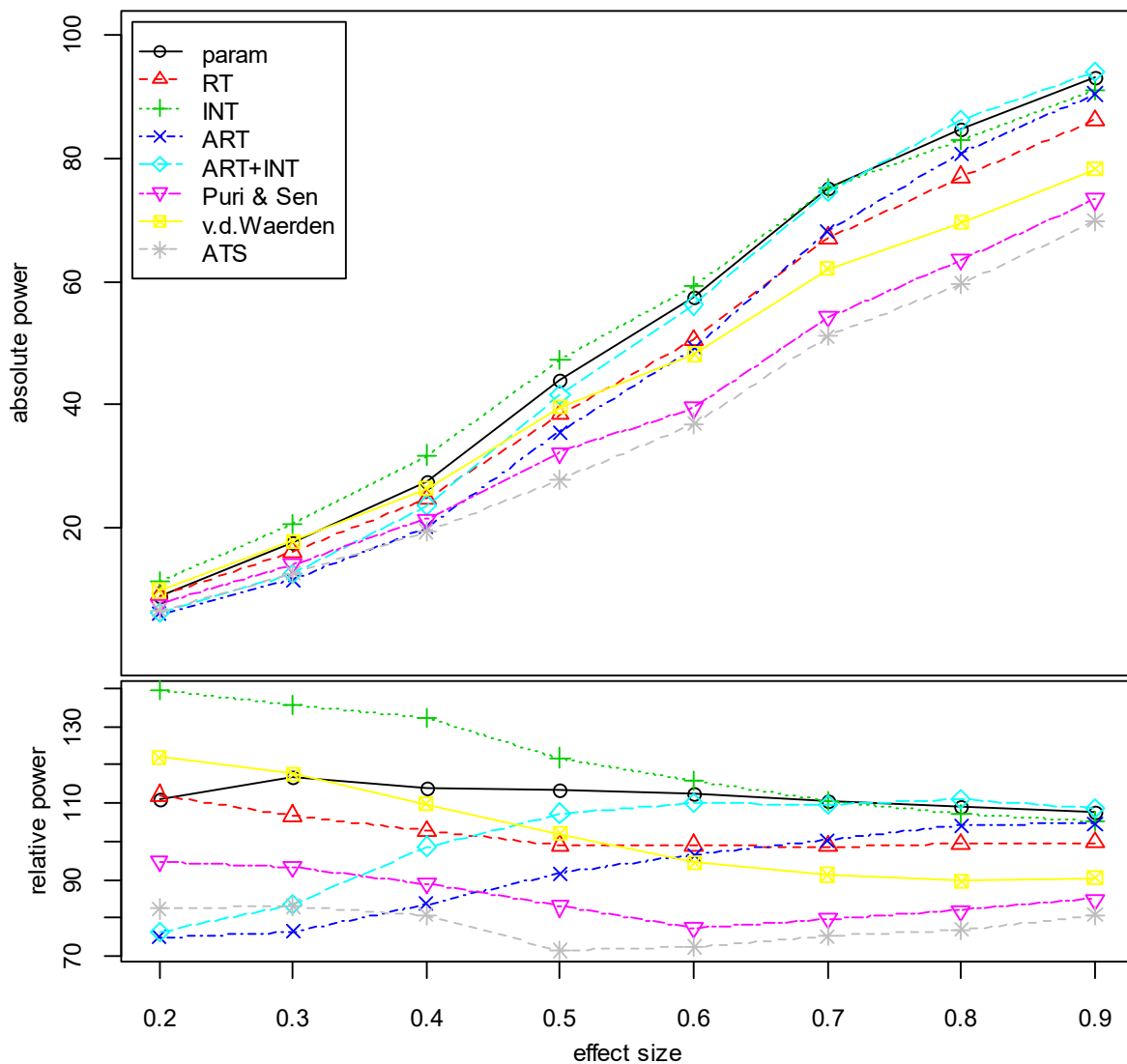
5.6.7 lognormal distribution

	factor standard deviation							
method	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.60	16.55	28.45	42.85	58.75	75.00	84.95	93.65
RT	11.60	17.70	30.55	45.50	59.75	76.65	84.90	92.30
INT	11.25	17.70	30.45	44.90	59.40	74.60	83.40	92.00
ART	7.80	12.25	26.40	41.25	59.70	76.80	88.70	95.45
ART+INT	6.60	11.45	25.00	40.55	58.65	76.60	87.65	95.70
Puri & Sen	10.40	15.40	25.85	38.05	48.55	63.00	70.40	80.35
v.d.Waerden	10.00	15.10	26.20	37.40	48.05	61.25	70.10	79.80
ATS	7.90	13.80	23.10	32.60	44.45	57.20	64.60	74.45



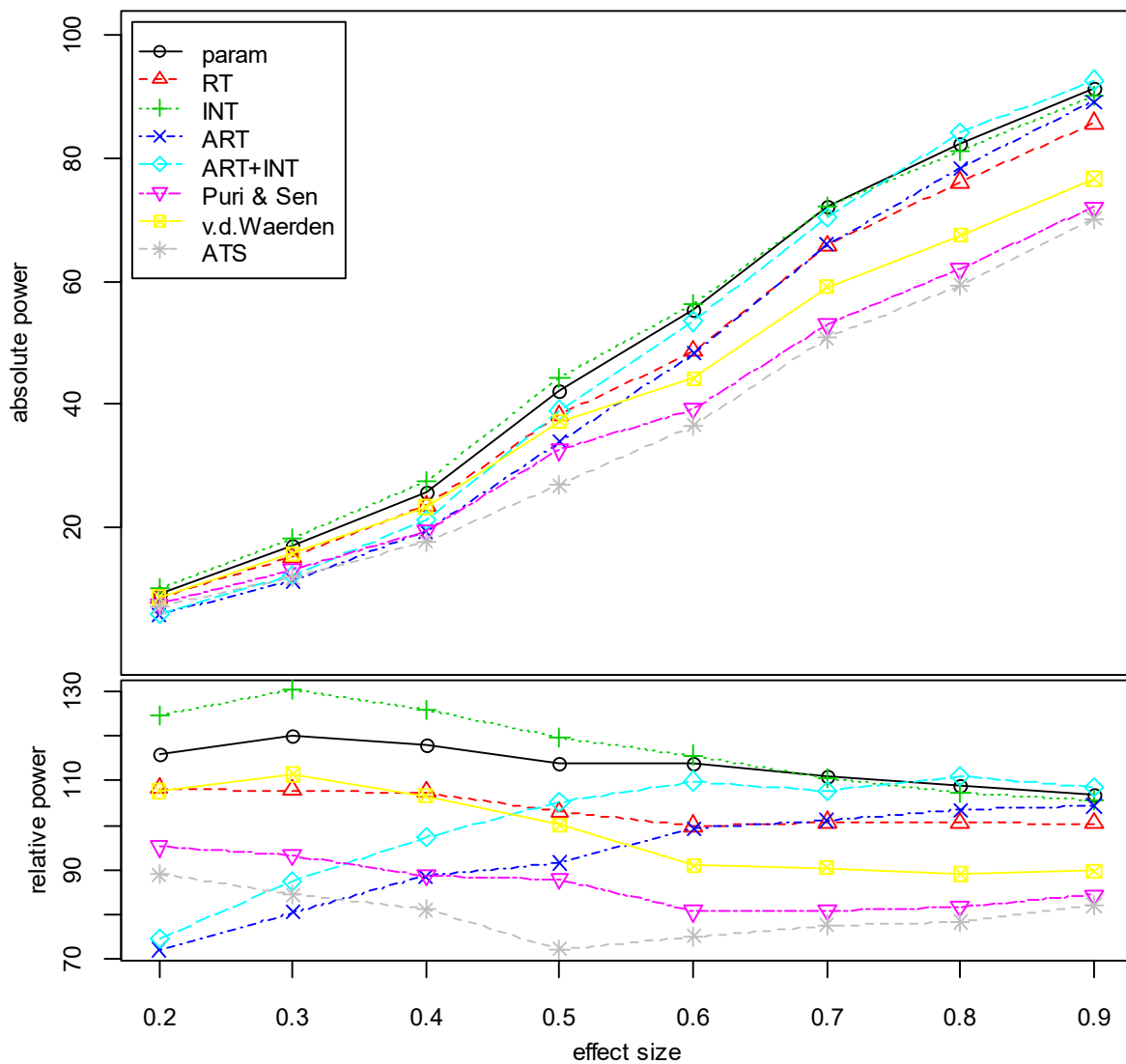
5. 6. 8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.95	17.70	27.40	43.95	57.35	75.15	84.60	93.25
RT	9.05	16.20	24.70	38.40	50.45	67.10	77.00	86.20
INT	11.25	20.60	31.85	47.25	59.15	75.25	83.00	90.95
ART	6.05	11.60	20.15	35.50	49.15	68.20	80.75	90.45
ART+INT	6.15	12.65	23.75	41.65	56.15	74.55	86.10	94.00
Puri & Sen	7.65	14.15	21.40	32.20	39.50	54.30	63.55	73.30
v.d.Waerden	9.85	17.85	26.40	39.55	48.20	62.05	69.55	78.25
ATS	6.65	12.60	19.45	27.70	36.95	51.10	59.65	69.80



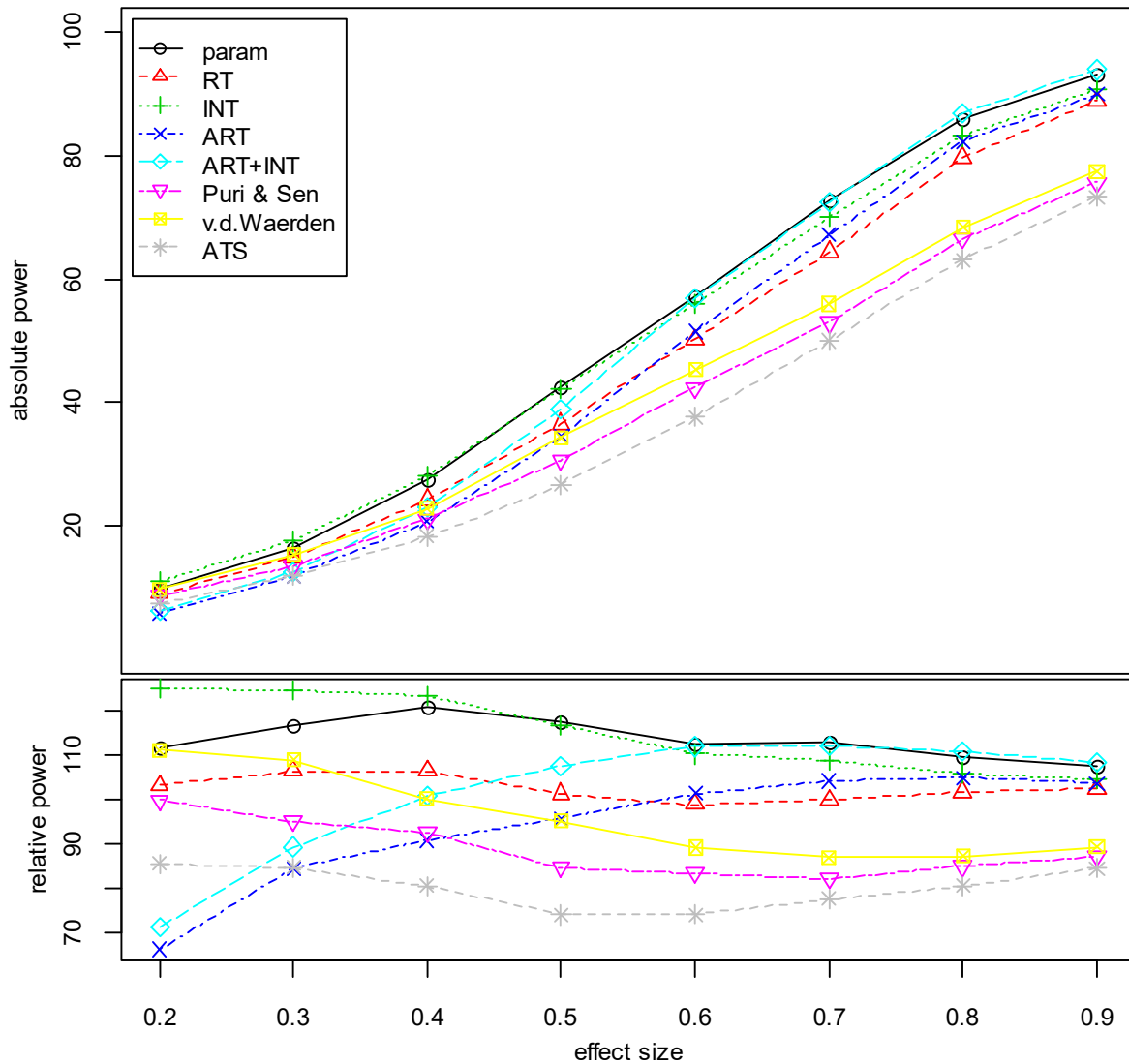
5.6.9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.30	16.90	25.80	42.15	55.40	72.30	82.35	91.20
RT	8.70	15.20	23.50	38.20	48.60	65.75	76.10	85.70
INT	10.00	18.35	27.55	44.40	56.25	72.15	81.15	90.15
ART	5.80	11.35	19.40	33.95	48.25	65.95	78.30	89.10
ART+INT	6.00	12.35	21.30	39.05	53.45	70.35	84.05	92.65
Puri & Sen	7.65	13.15	19.45	32.60	39.30	52.90	61.95	72.05
v.d.Waerden	8.65	15.70	23.30	37.15	44.25	59.10	67.50	76.65
ATS	7.15	11.90	17.75	26.80	36.55	50.75	59.40	70.10



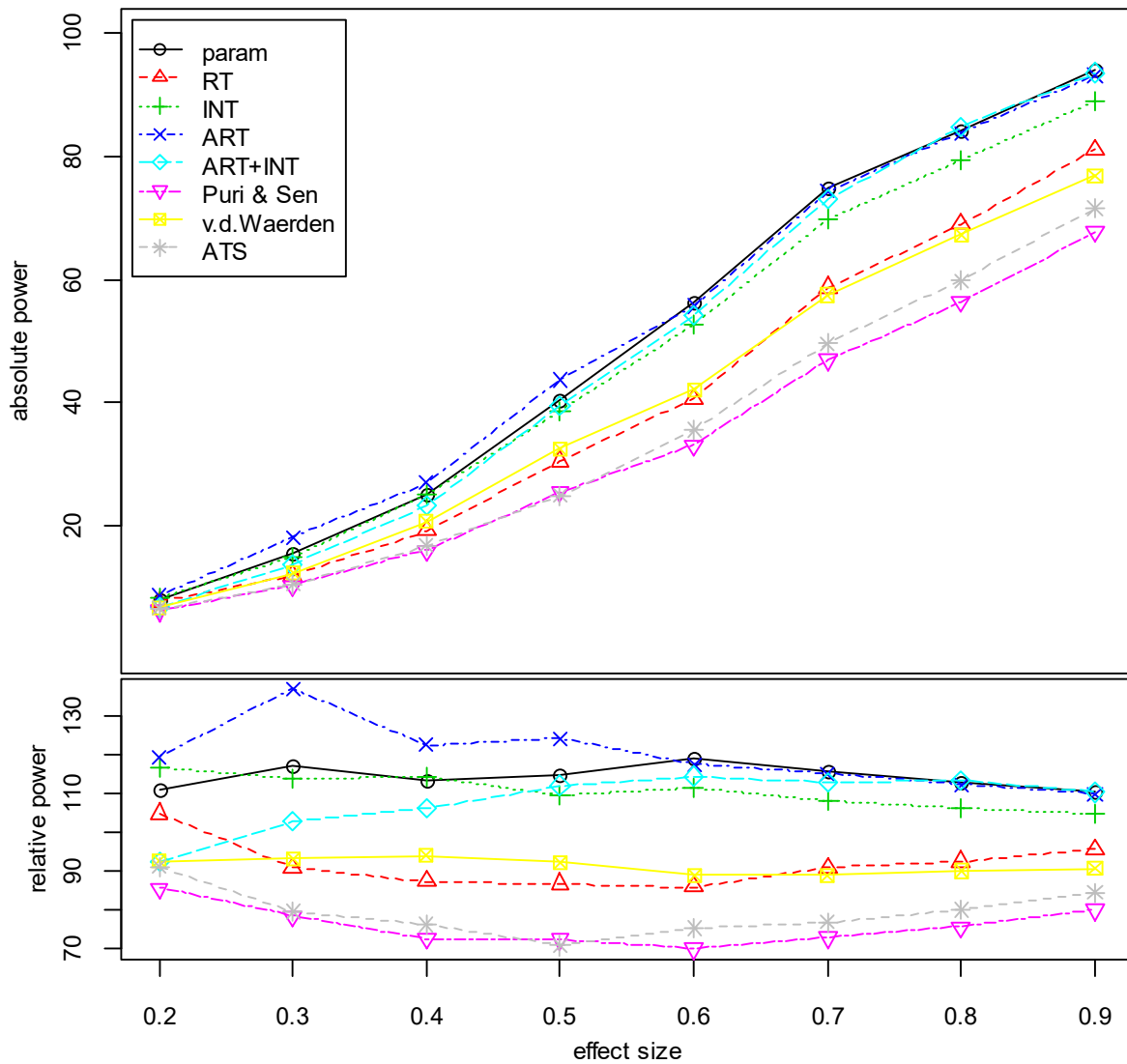
5. 6. 10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.80	16.40	27.50	42.40	57.20	72.70	85.95	93.20
RT	9.05	14.95	24.25	36.50	50.25	64.40	79.65	88.85
INT	10.95	17.50	28.15	42.10	56.00	70.15	83.10	90.70
ART	5.80	11.85	20.70	34.50	51.50	67.15	82.20	89.90
ART+INT	6.25	12.55	22.95	38.80	56.85	72.35	86.80	93.90
Puri & Sen	8.75	13.35	21.10	30.55	42.40	53.00	66.50	75.60
v.d.Waerden	9.75	15.30	22.80	34.30	45.30	56.00	68.30	77.50
ATS	7.50	11.90	18.35	26.65	37.60	50.00	63.10	73.25



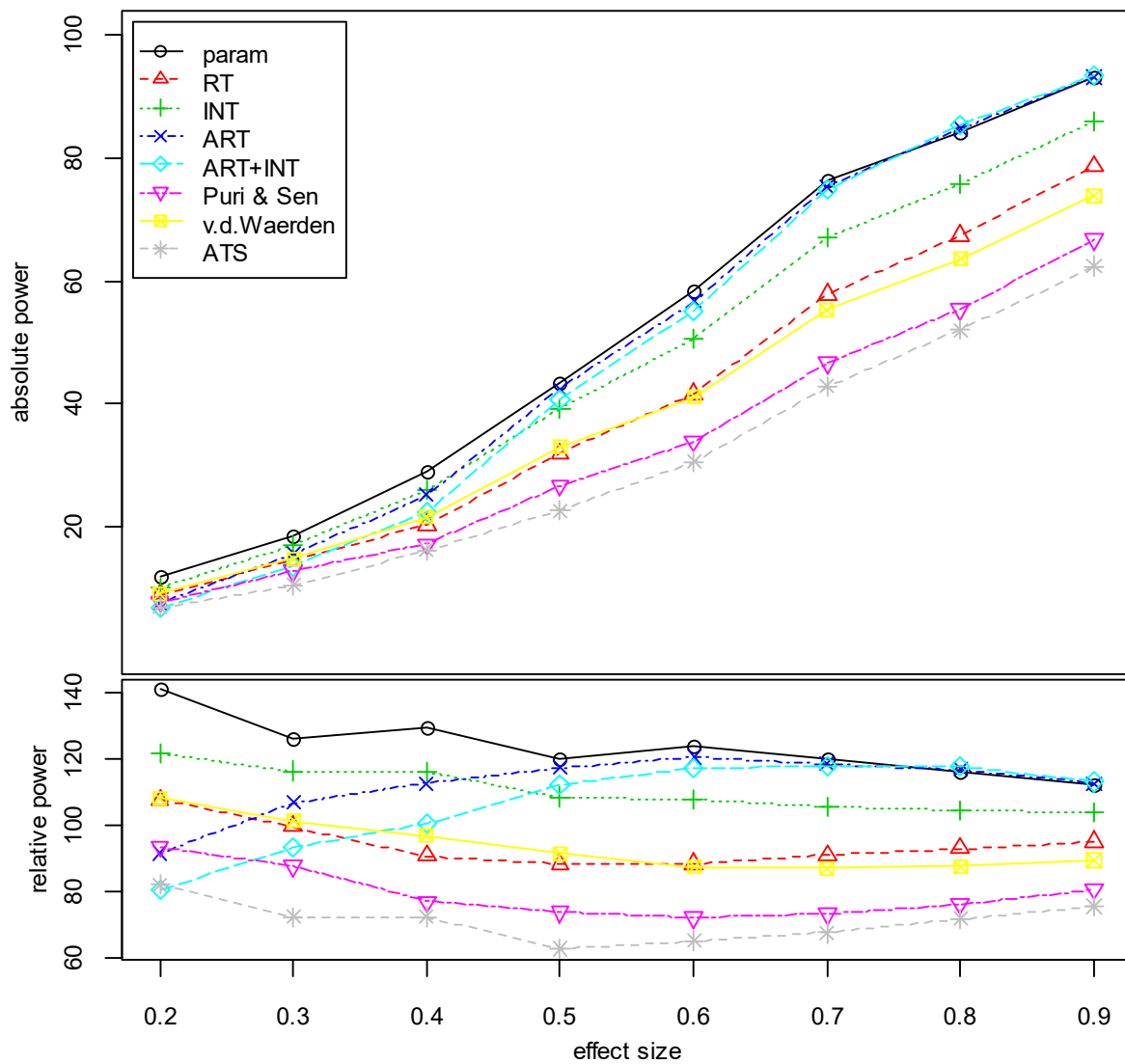
5. 6. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.05	15.45	25.00	40.45	56.40	74.95	84.15	93.90
RT	7.60	12.00	19.25	30.55	40.65	58.75	69.00	81.05
INT	8.45	15.05	25.20	38.60	52.80	69.90	79.30	88.90
ART	8.65	18.10	27.00	43.70	55.65	74.35	83.80	93.15
ART+INT	6.70	13.60	23.40	39.50	54.20	72.95	84.75	93.55
Puri & Sen	6.20	10.35	16.00	25.45	33.10	47.00	56.40	67.75
v.d.Waerden	6.70	12.30	20.70	32.50	42.05	57.45	67.25	76.90
ATS	6.60	10.50	16.80	24.90	35.60	49.65	59.75	71.55



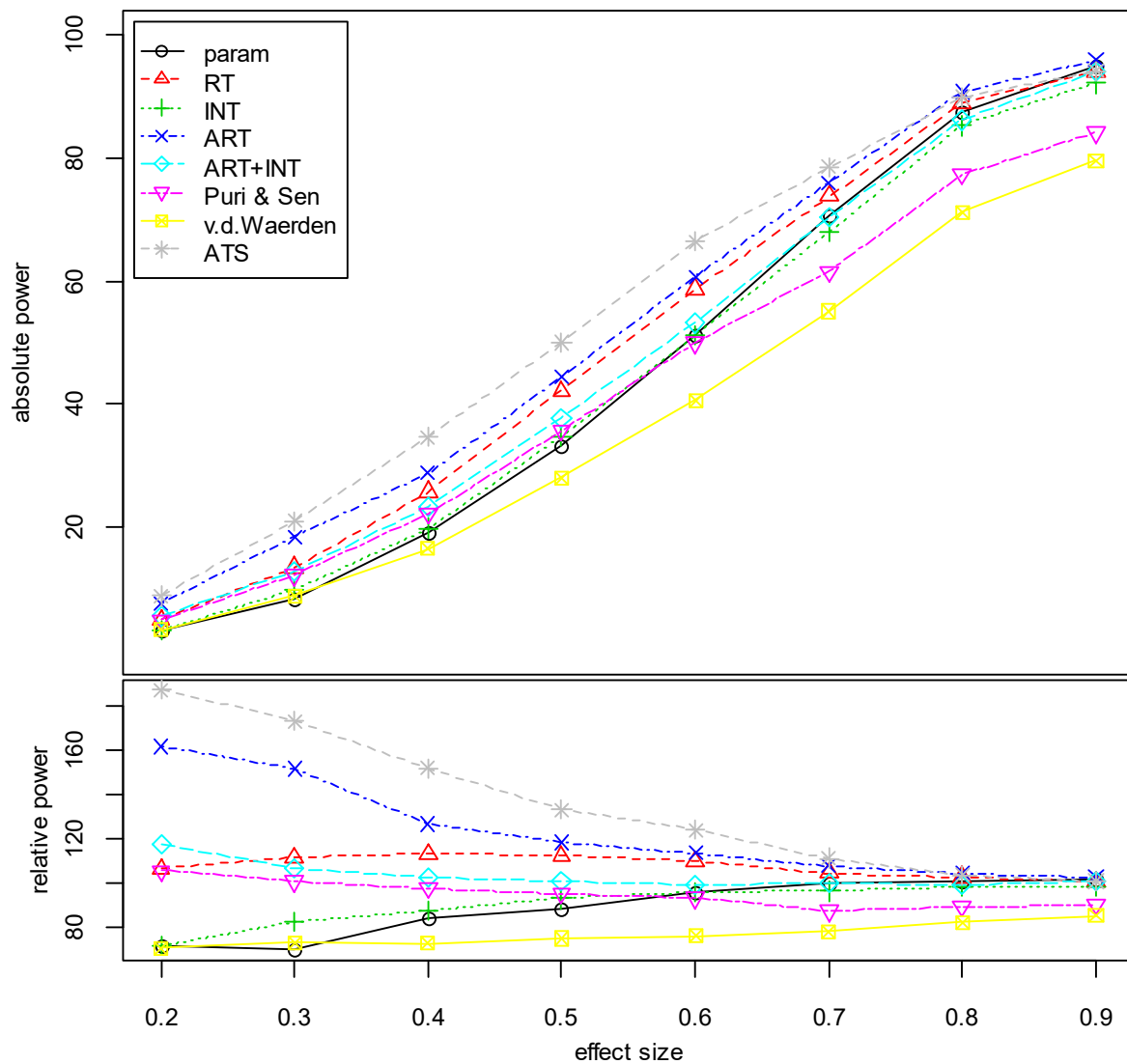
5. 6. 12 left skewed distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.85	18.45	28.95	43.35	58.30	76.40	84.05	93.00
RT	9.05	14.55	20.30	31.95	41.60	57.75	67.40	78.60
INT	10.25	17.00	25.95	39.25	50.70	67.05	75.80	85.85
ART	7.70	15.60	25.20	42.45	56.70	75.30	84.75	93.10
ART+INT	6.75	13.60	22.50	40.65	55.20	74.75	85.30	93.50
Puri & Sen	7.85	12.80	17.20	26.70	33.95	46.60	55.30	66.70
v.d.Waerden	9.10	14.80	21.65	33.05	41.05	55.30	63.50	73.90
ATS	6.90	10.55	16.20	22.65	30.65	42.90	52.00	62.40



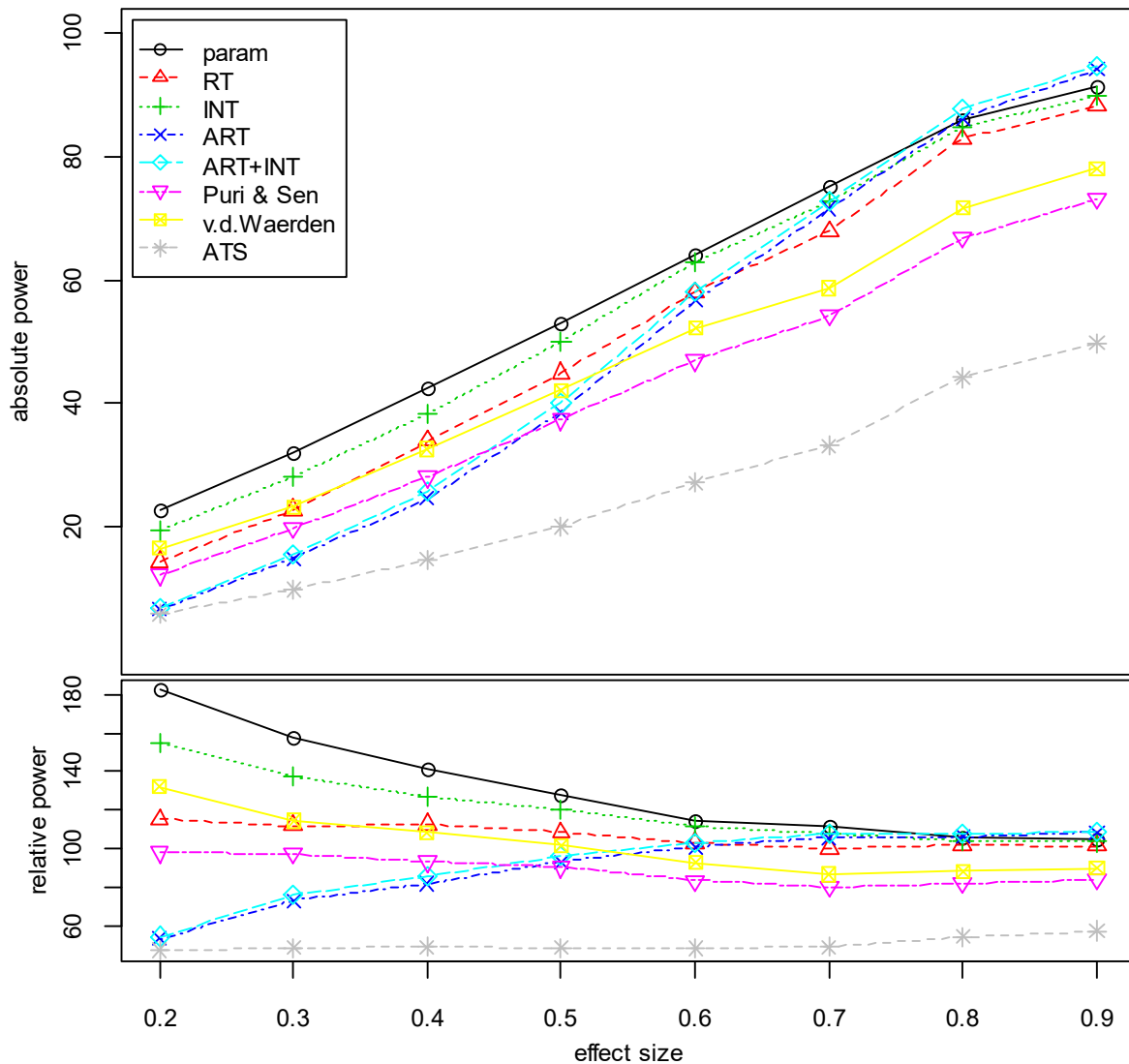
5. 6. 13 normal distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	3.35	8.45	19.05	33.20	51.30	70.80	87.45	94.90
RT	5.00	13.50	25.75	42.15	58.70	73.75	88.85	94.05
INT	3.35	9.95	19.85	34.85	51.10	67.95	85.20	92.10
ART	7.60	18.40	28.85	44.40	60.70	76.00	90.70	95.95
ART+INT	5.50	12.90	23.35	37.70	53.15	70.35	86.10	94.00
Puri & Sen	4.95	12.20	22.20	35.65	49.90	61.55	77.35	84.15
v.d.Waerden	3.30	8.85	16.50	28.05	40.60	55.05	71.20	79.50
ATS	8.80	21.00	34.60	50.00	66.35	78.50	89.80	94.10



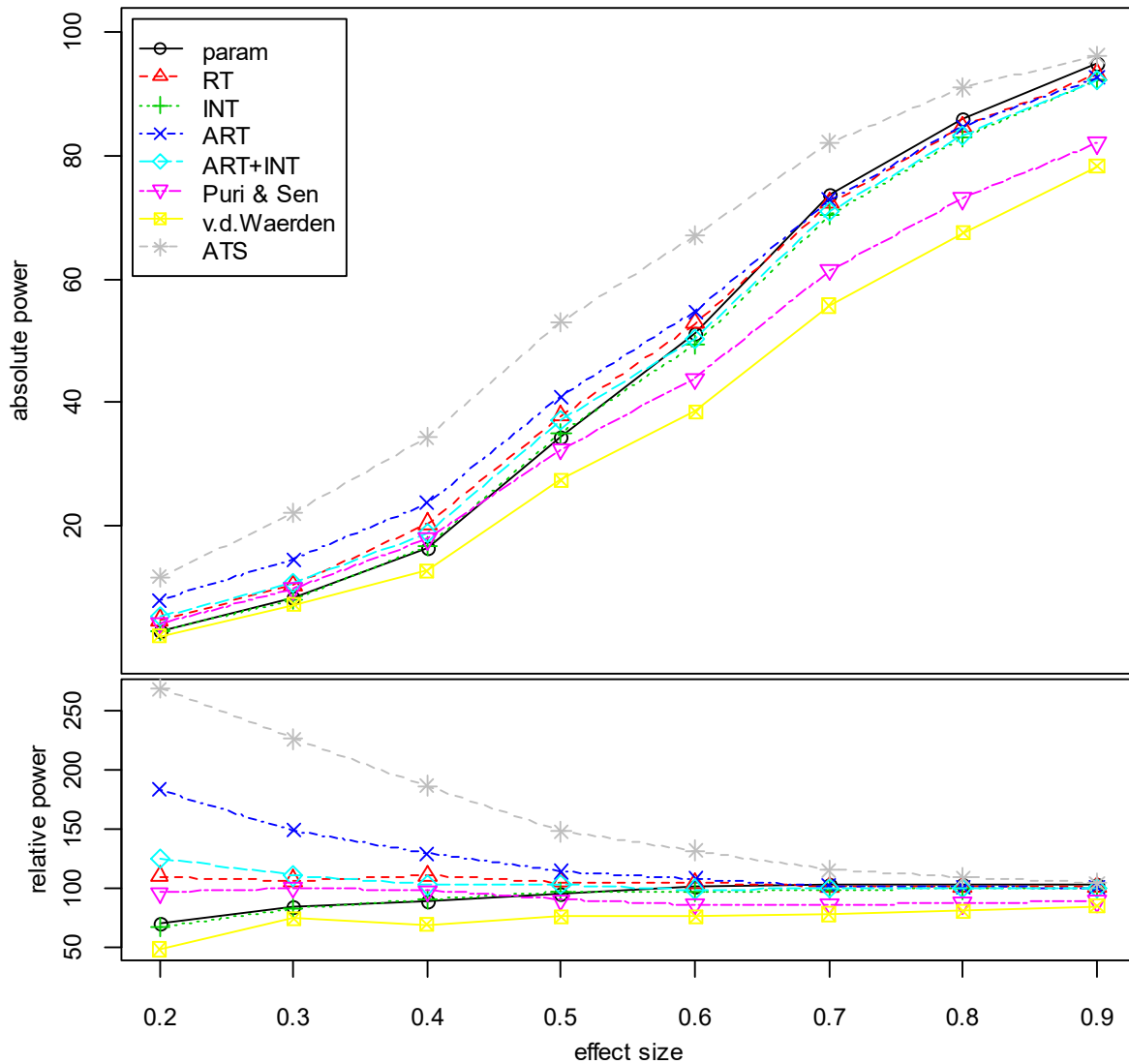
5. 6. 14 normal distribution - unequal variances (small n_i - large s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	22.75	32.10	42.60	52.90	64.15	75.25	85.85	91.45
RT	14.40	22.75	33.90	44.95	58.00	67.85	82.90	88.15
INT	19.30	28.00	38.20	49.90	62.75	72.85	84.80	89.90
ART	6.65	14.85	24.60	38.50	56.65	71.55	86.20	94.10
ART+INT	6.80	15.45	25.70	39.95	58.00	72.75	87.70	94.55
Puri & Sen	12.25	19.85	28.10	37.35	46.90	54.30	66.90	73.15
v.d.Waerden	16.50	23.25	32.60	42.15	52.20	58.70	71.70	78.10
ATS	5.90	9.85	14.75	20.05	27.10	33.10	44.15	49.80



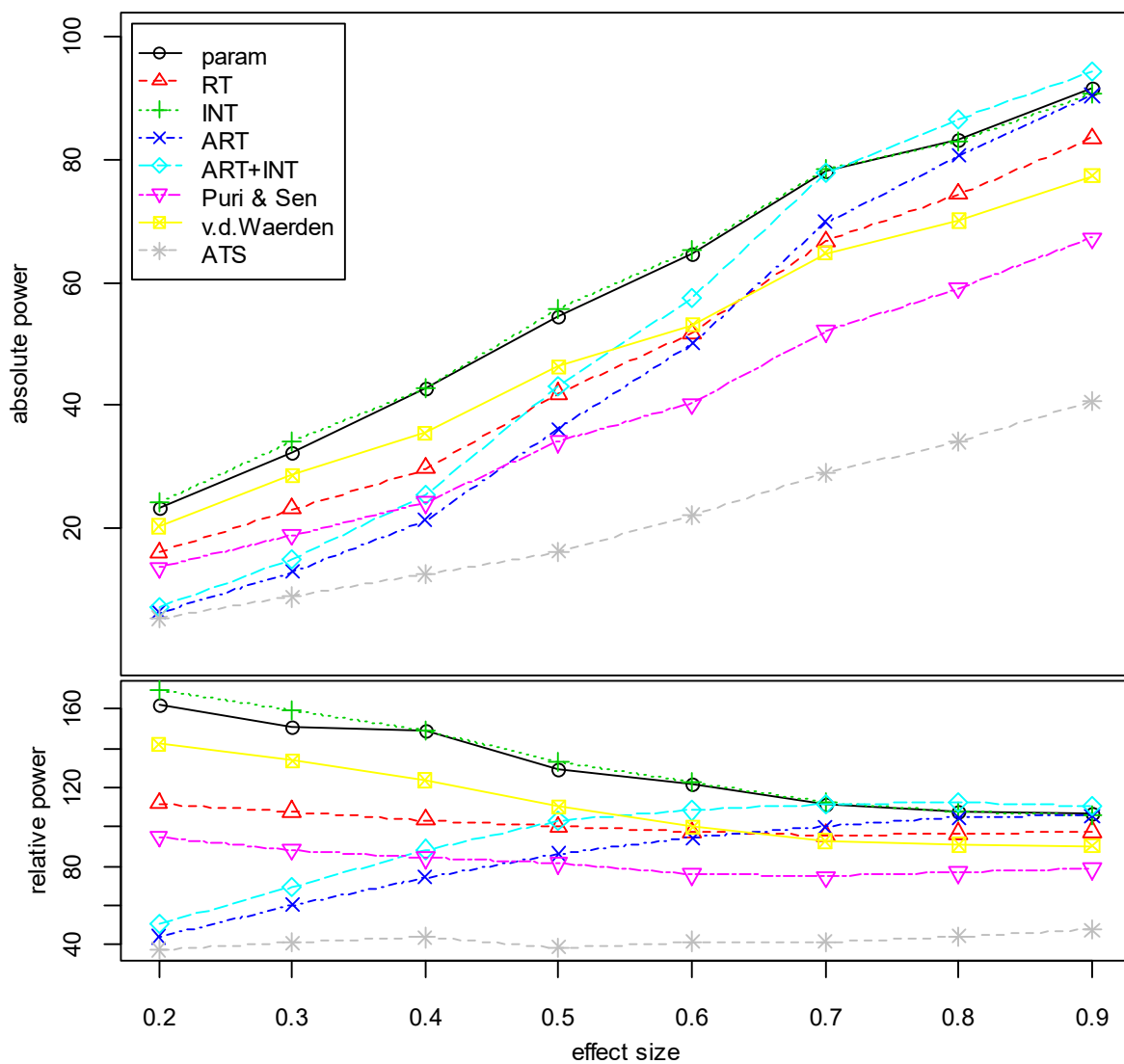
5. 6. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	3.05	8.25	16.40	34.40	51.30	73.65	86.00	95.00
RT	4.80	10.35	20.30	37.80	52.80	72.25	84.65	93.15
INT	2.90	8.05	16.70	34.90	49.35	70.40	82.85	92.25
ART	8.00	14.50	23.75	40.95	54.65	72.85	84.65	92.65
ART+INT	5.45	10.75	18.80	37.10	50.25	70.90	83.20	92.20
Puri & Sen	4.20	9.80	17.95	32.35	43.85	61.40	73.00	82.05
v.d.Waerden	2.10	7.25	12.75	27.40	38.55	55.65	67.40	78.20
ATS	11.70	22.05	34.30	53.10	66.95	82.15	91.05	96.15



5. 6. 16 left skewed distribution - unequal variances (small n_i - large s_j)

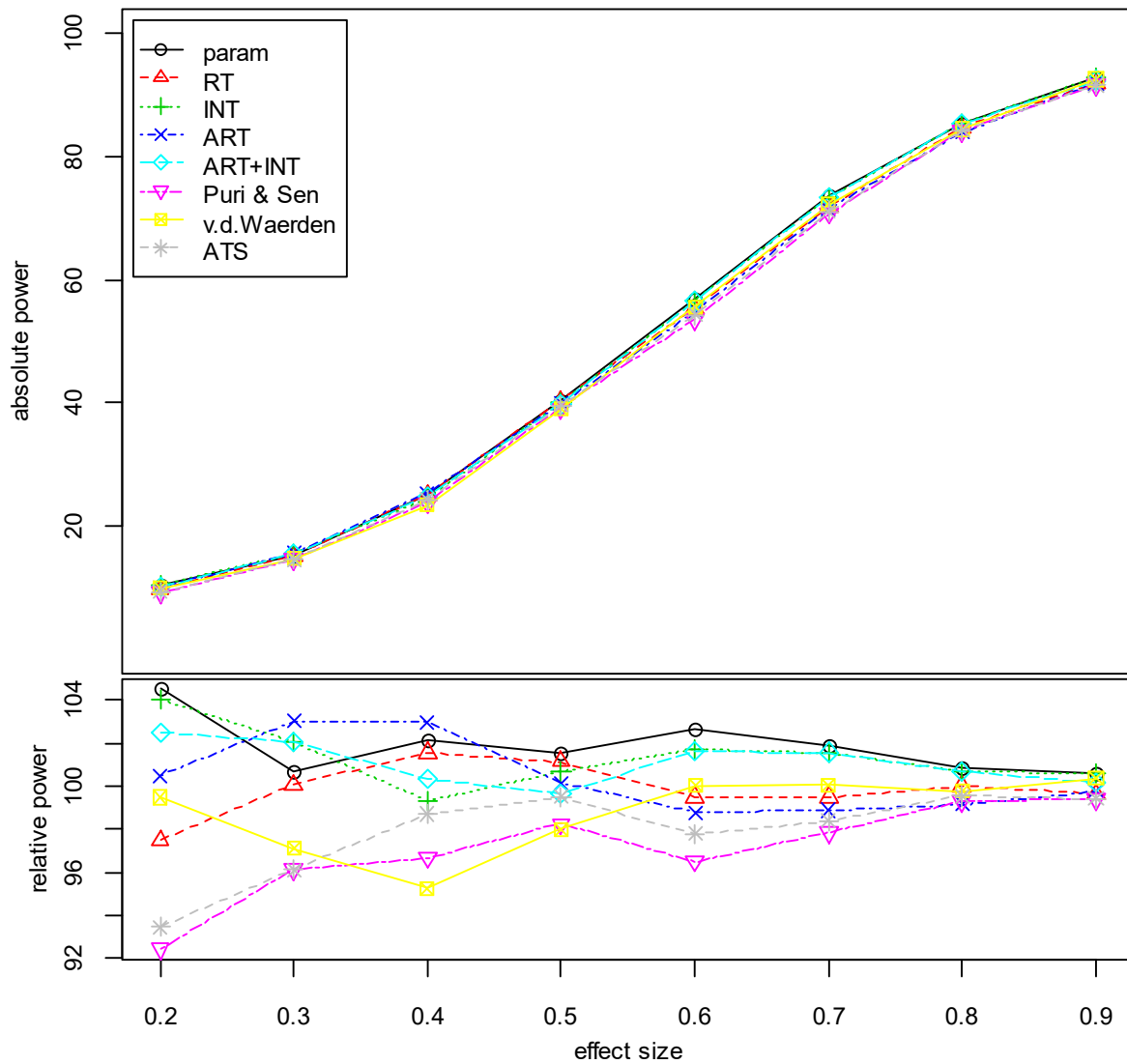
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	23.20	32.40	42.90	54.35	64.65	78.00	83.35	91.70
RT	16.00	23.15	29.75	41.90	51.65	66.70	74.40	83.45
INT	24.20	34.15	42.90	55.75	65.25	78.40	82.85	90.65
ART	6.30	12.90	21.35	36.15	50.10	69.90	80.65	90.45
ART+INT	7.20	14.90	25.45	43.20	57.55	77.75	86.60	94.40
Puri & Sen	13.60	18.95	24.20	34.10	40.25	52.10	59.10	67.25
v.d.Waerden	20.35	28.65	35.55	46.30	53.10	64.75	70.05	77.30
ATS	5.35	8.80	12.55	16.20	22.15	28.90	34.10	40.65



5. 7. Interaction AB (equal $n_i=10$ / # levels = $2*4$)

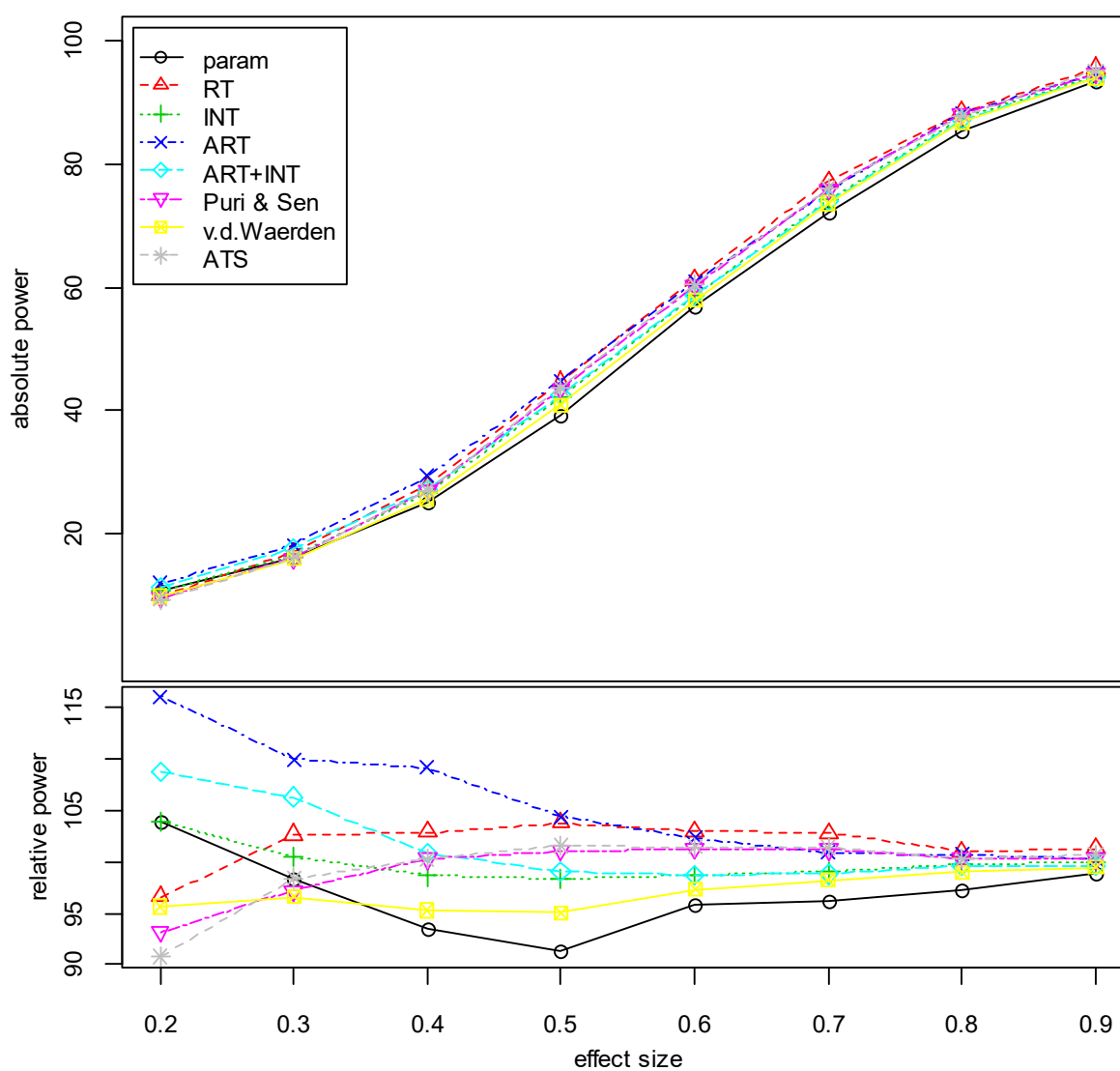
5. 7. 1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.40	15.30	25.15	40.40	57.00	73.60	85.40	92.70
RT	9.70	15.20	25.00	40.25	55.25	71.90	84.65	91.85
INT	10.35	15.50	24.45	40.05	56.50	73.35	85.20	92.75
ART	10.00	15.65	25.35	39.85	54.85	71.45	83.95	91.95
ART+INT	10.20	15.50	24.70	39.65	56.45	73.40	85.25	92.35
Puri & Sen	9.20	14.60	23.80	39.10	53.60	70.70	84.05	91.60
v.d.Waerden	9.90	14.75	23.45	39.00	55.55	72.30	84.45	92.50
ATS	9.30	14.60	24.30	39.60	54.30	71.10	84.25	91.65



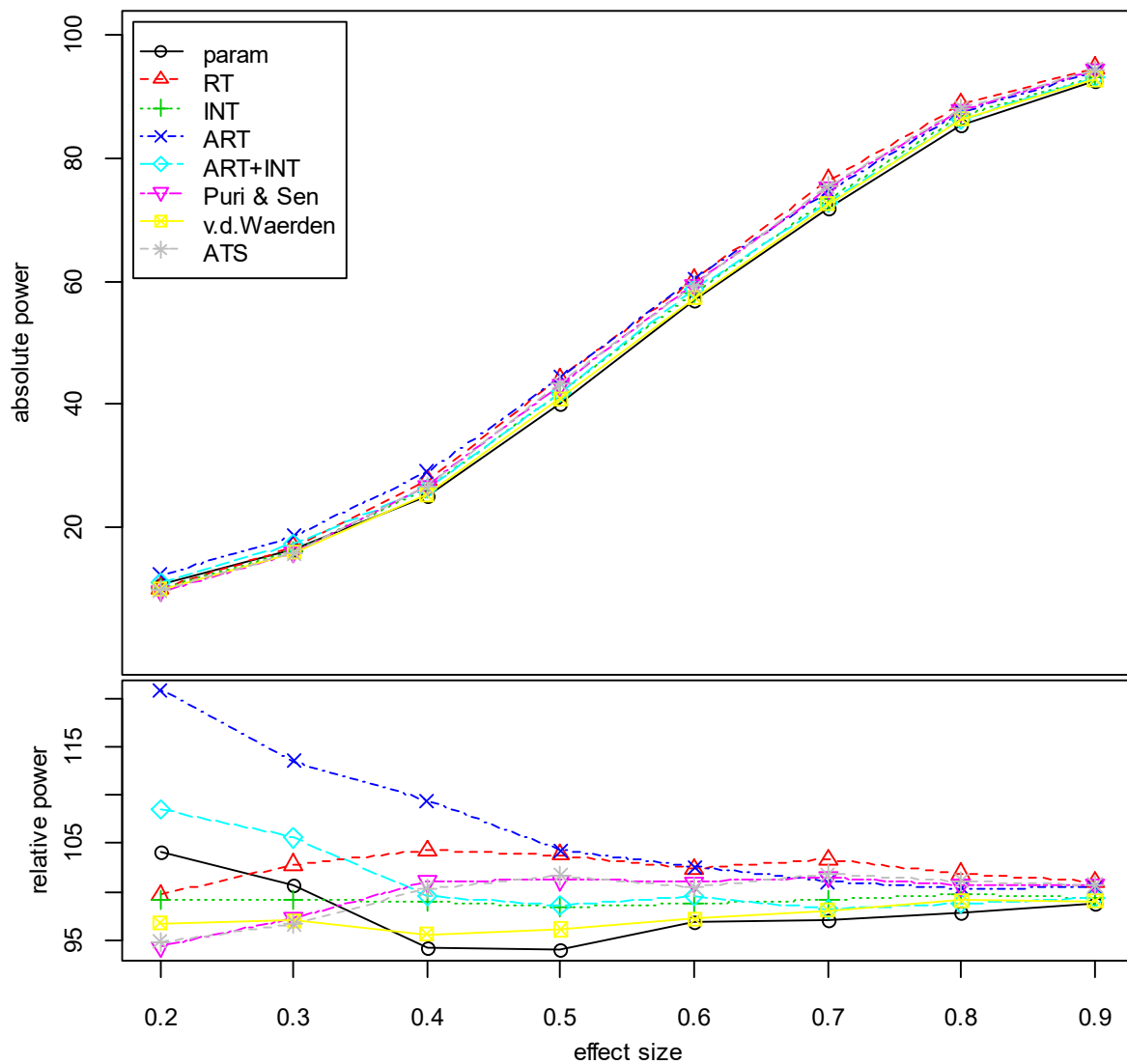
5. 7. 2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.70	16.20	25.20	39.25	57.00	72.15	85.25	93.35
RT	9.95	16.90	27.75	44.60	61.25	77.10	88.45	95.60
INT	10.70	16.55	26.60	42.25	58.75	74.35	87.45	94.30
ART	11.95	18.10	29.45	44.85	60.90	75.70	88.25	94.65
ART+INT	11.20	17.50	27.20	42.55	58.70	74.10	87.20	94.00
Puri & Sen	9.60	16.00	27.05	43.45	60.25	75.90	87.95	94.70
v.d.Waerden	9.85	15.90	25.70	40.85	57.90	73.65	86.75	93.90
ATS	9.35	16.20	27.05	43.65	60.35	76.05	87.85	95.10



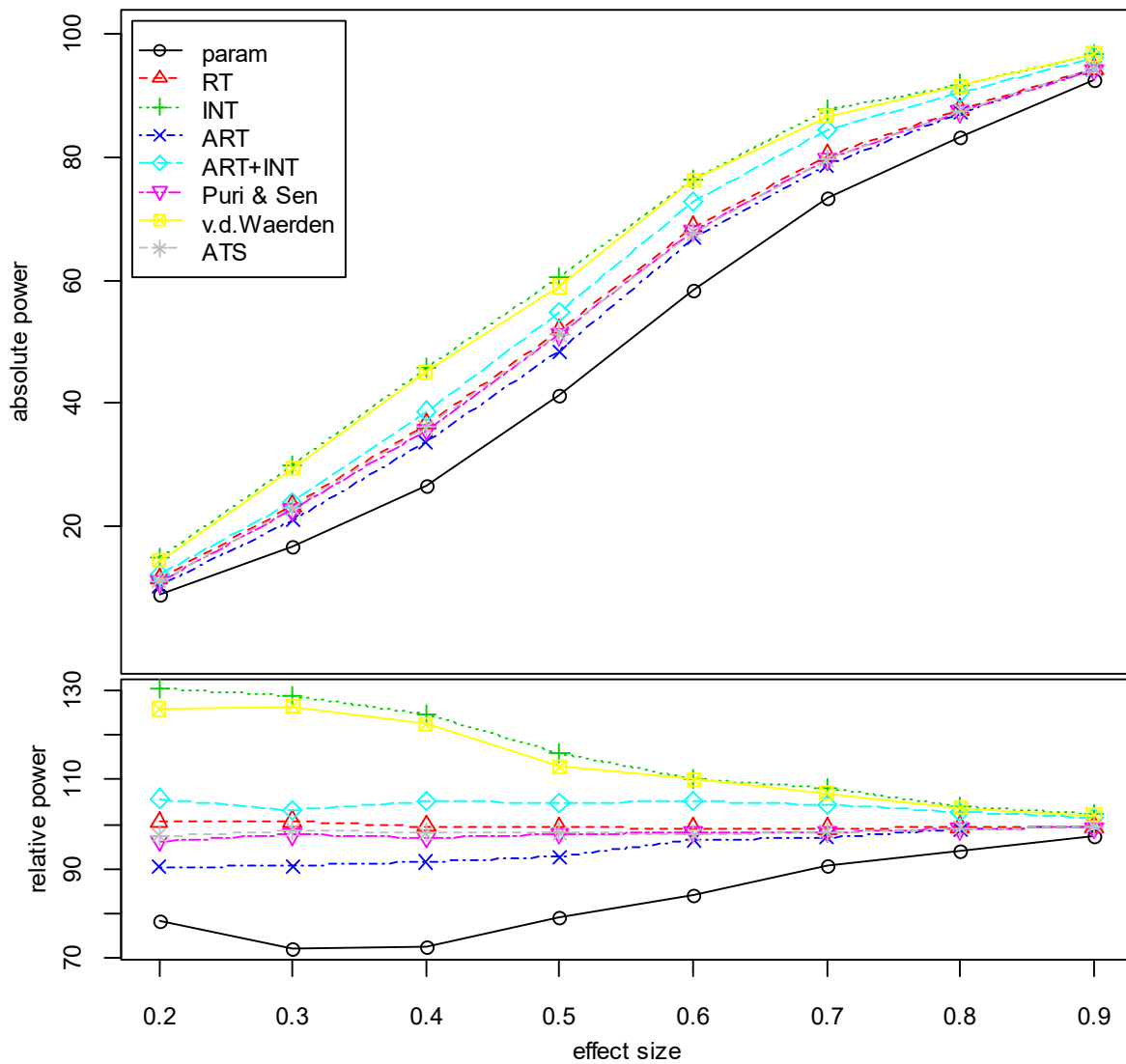
5. 7. 3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.65	16.50	25.00	40.00	57.00	71.75	85.35	92.65
RT	10.20	16.85	27.65	44.15	60.25	76.40	88.75	94.65
INT	10.15	16.25	26.25	41.85	58.20	73.30	86.90	93.20
ART	12.35	18.60	29.00	44.35	60.35	74.70	87.50	94.10
ART+INT	11.10	17.30	26.40	41.95	58.60	72.70	86.15	93.10
Puri & Sen	9.65	15.95	26.80	43.05	59.45	75.10	87.75	94.45
v.d.Waerden	9.90	15.90	25.35	40.90	57.25	72.55	86.35	92.80
ATS	9.70	15.85	26.60	43.25	59.15	75.30	88.15	94.35



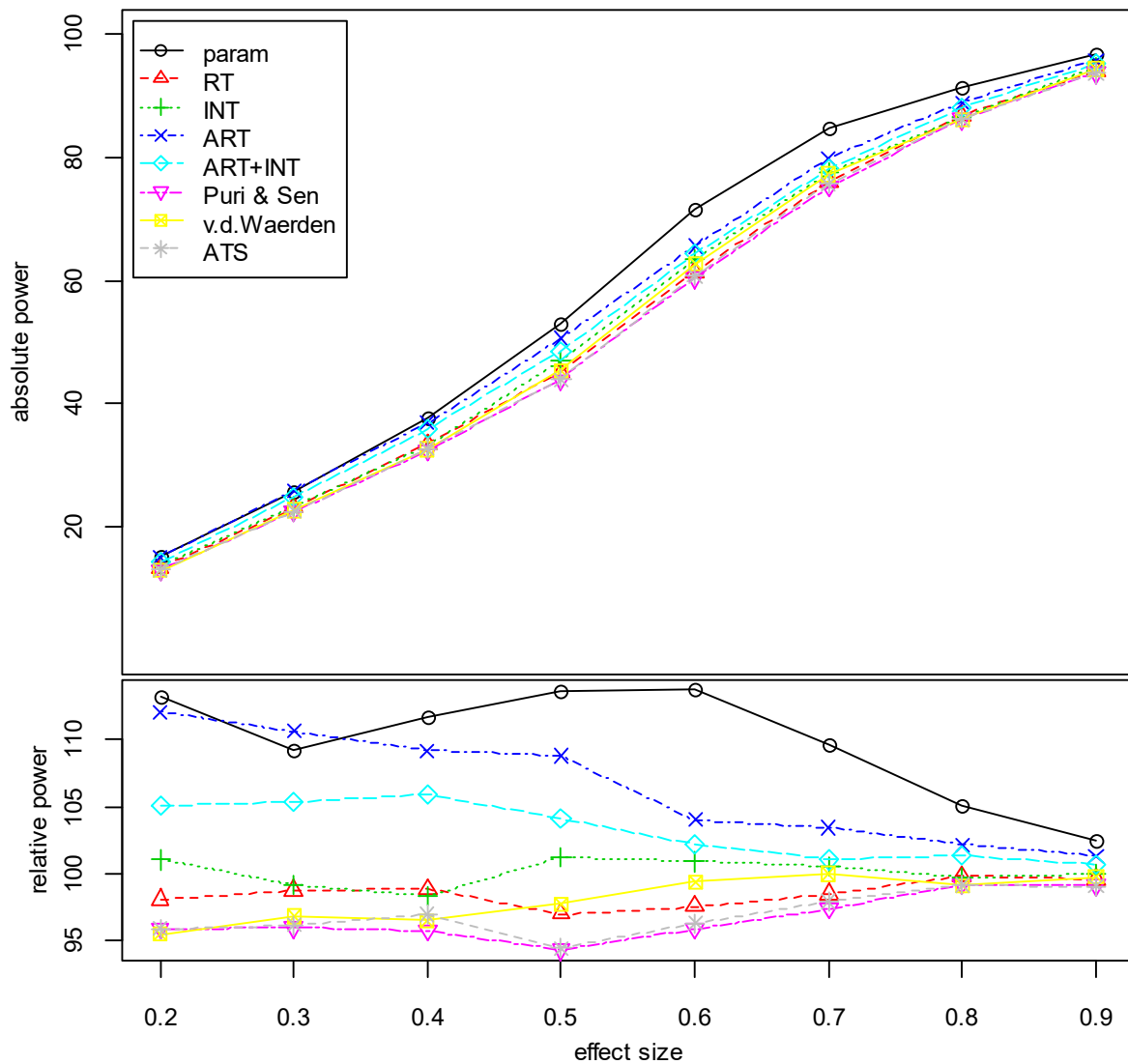
5.7.4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.95	16.75	26.70	41.40	58.25	73.30	83.10	92.40
RT	11.50	23.40	36.65	51.90	68.55	80.25	87.75	94.35
INT	14.90	29.90	45.85	60.55	76.40	87.60	91.75	96.80
ART	10.35	21.05	33.70	48.45	66.85	78.60	87.25	94.35
ART+INT	12.10	23.95	38.75	54.80	72.80	84.55	90.55	96.25
Puri & Sen	11.00	22.70	35.75	51.10	68.05	79.60	87.35	94.10
v.d.Waerden	14.40	29.40	45.05	59.00	76.20	86.65	91.50	96.70
ATS	11.15	22.95	36.10	51.20	67.65	79.60	87.55	94.30



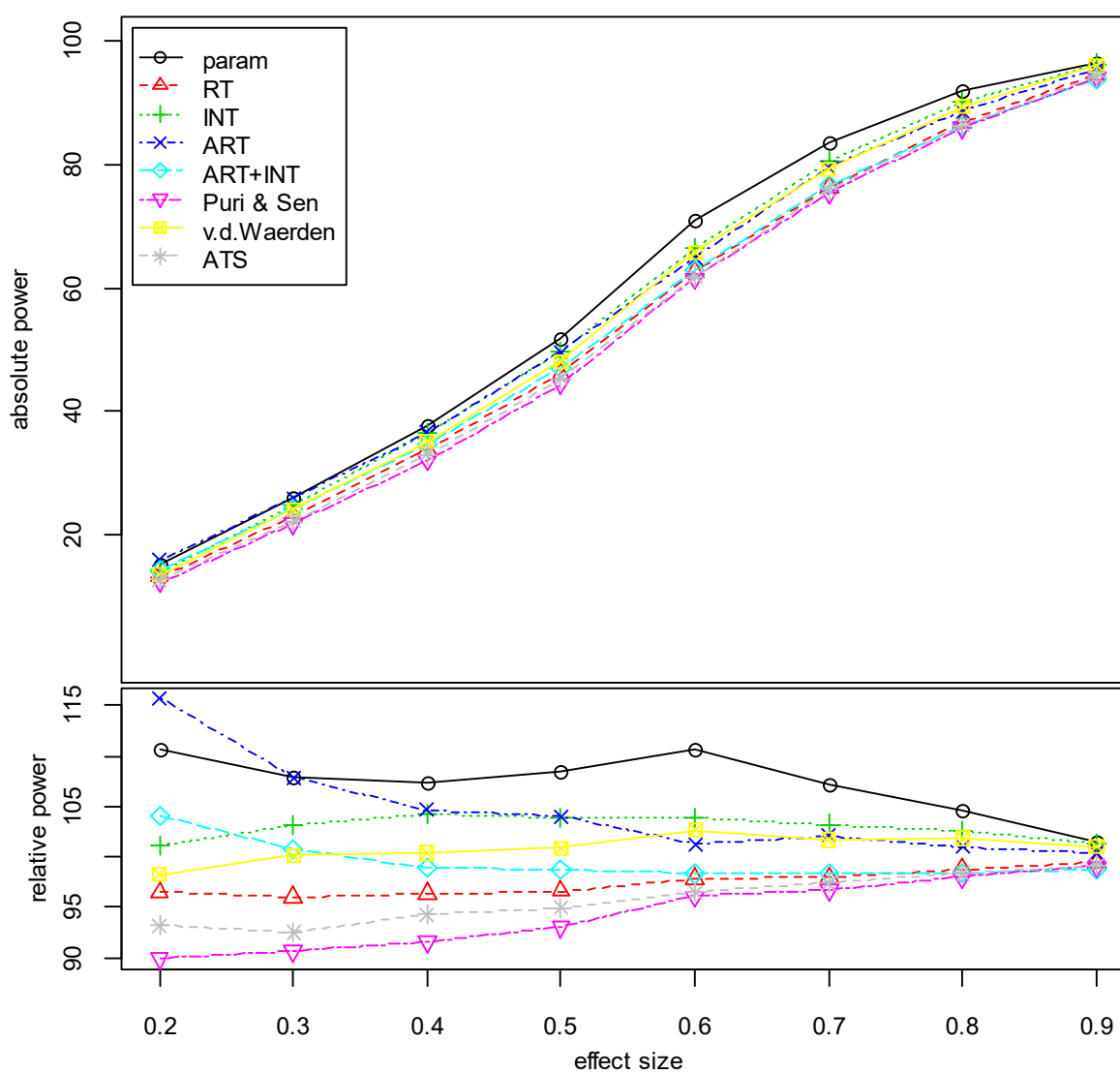
5.7.5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.35	25.60	37.75	52.85	71.65	84.70	91.35	96.85
RT	13.30	23.15	33.40	45.10	61.45	76.10	86.75	94.10
INT	13.70	23.25	33.20	47.05	63.55	77.65	86.65	94.55
ART	15.20	25.95	36.90	50.60	65.55	79.90	88.80	95.75
ART+INT	14.25	24.70	35.80	48.40	64.40	78.05	88.10	95.15
Puri & Sen	13.00	22.50	32.35	43.85	60.40	75.25	86.25	93.70
v.d.Waerden	12.95	22.70	32.60	45.45	62.60	77.25	86.15	94.30
ATS	13.00	22.55	32.75	43.90	60.65	75.65	86.20	93.60



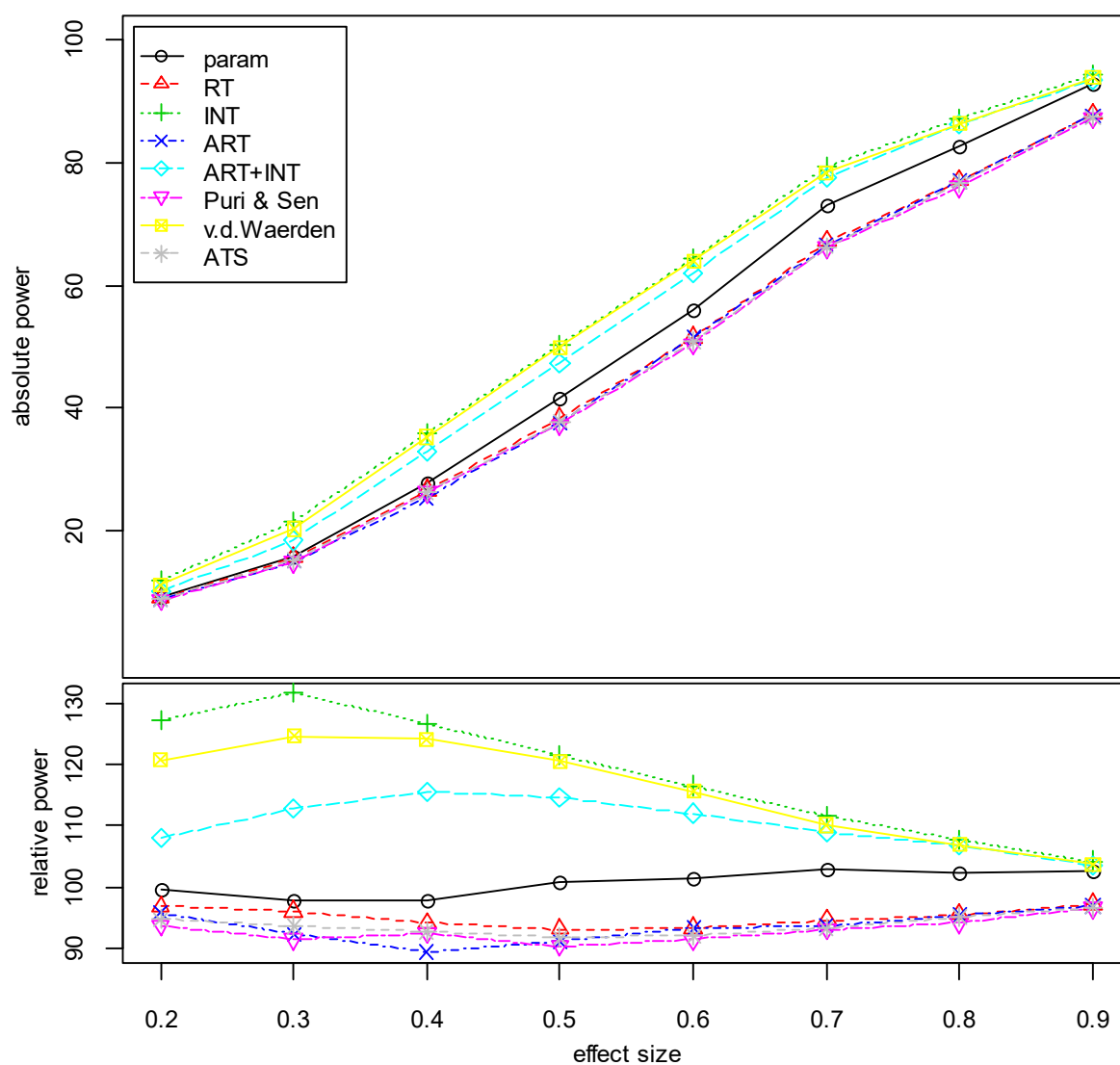
5.7.6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	15.20	25.95	37.60	51.75	70.90	83.50	91.80	96.50
RT	13.25	23.10	33.75	46.10	62.65	76.35	86.70	94.50
INT	13.90	24.80	36.50	49.55	66.55	80.45	90.00	96.25
ART	15.90	25.95	36.65	49.65	64.85	79.55	88.60	95.40
ART+INT	14.30	24.25	34.65	47.10	62.95	76.60	86.30	93.85
Puri & Sen	12.35	21.80	32.05	44.40	61.55	75.35	85.90	94.10
v.d.Waerden	13.50	24.10	35.15	48.15	65.75	79.25	89.35	96.00
ATS	12.80	22.25	33.00	45.30	61.80	75.90	86.30	94.20



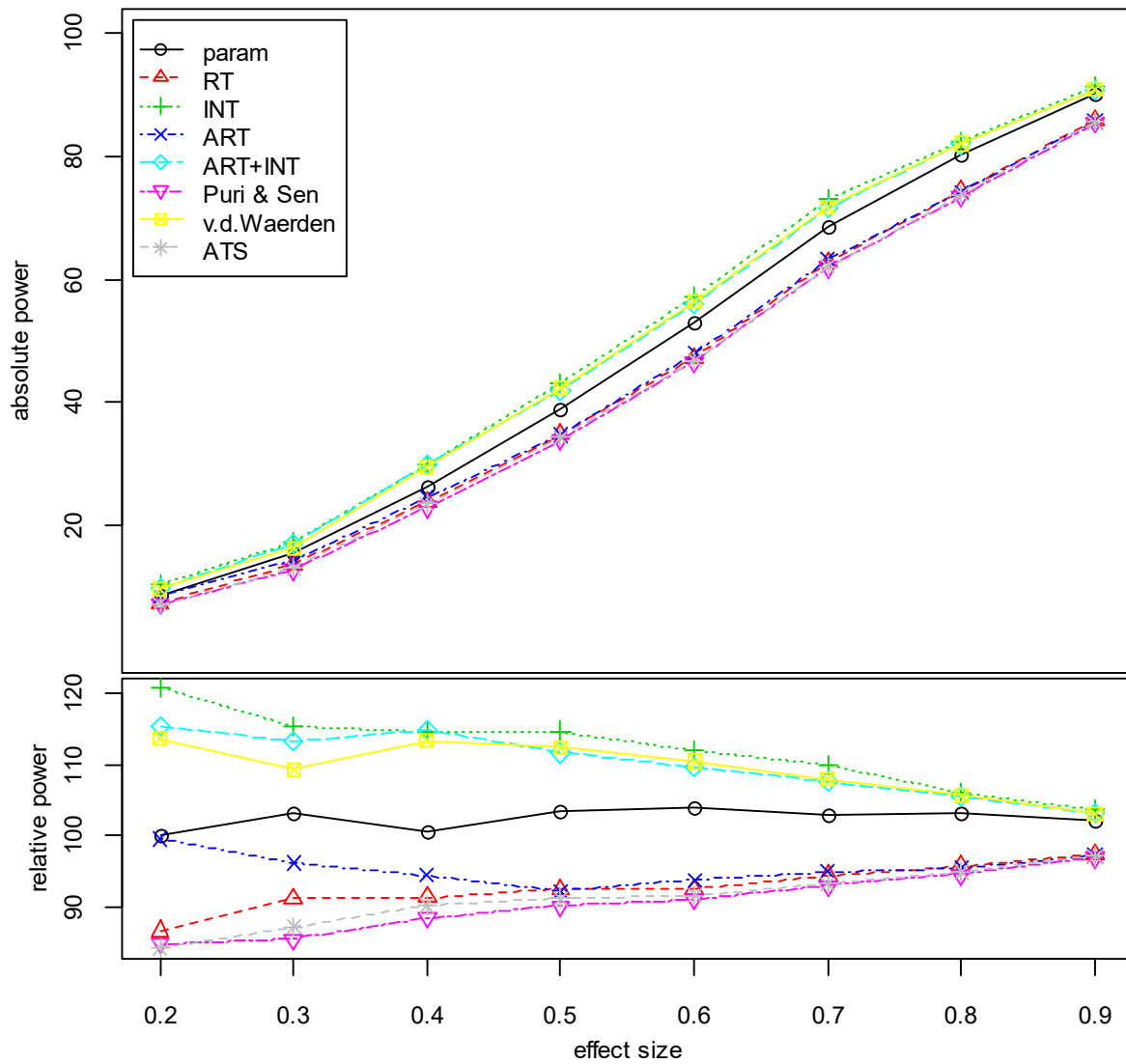
5.7.8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.30	15.95	27.80	41.65	56.10	73.15	82.70	92.80
RT	9.05	15.65	26.70	38.45	51.50	67.20	77.05	87.95
INT	11.90	21.50	36.00	50.25	64.45	79.45	87.00	94.30
ART	8.95	15.05	25.35	37.60	51.50	66.50	76.95	87.60
ART+INT	10.10	18.40	32.80	47.35	61.95	77.45	86.25	93.55
Puri & Sen	8.75	14.90	26.25	37.30	50.45	66.10	76.00	87.30
v.d.Waerden	11.30	20.35	35.30	49.85	63.95	78.30	86.30	93.85
ATS	8.85	15.25	26.30	37.85	50.80	66.20	76.70	87.40



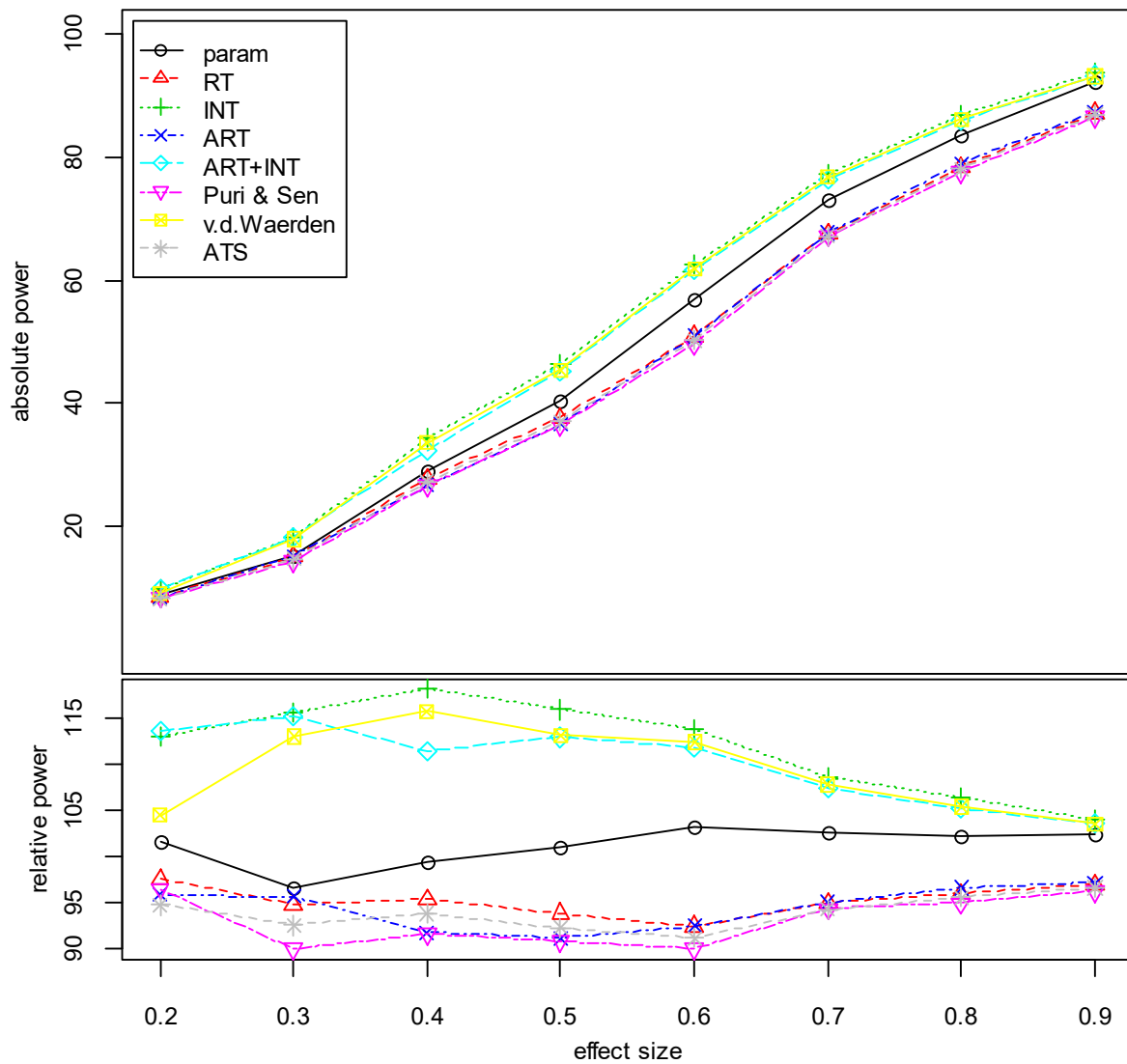
5.7.9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.55	15.45	26.20	38.90	53.10	68.45	80.10	90.00
RT	7.40	13.65	23.80	34.80	47.25	62.80	74.40	85.85
INT	10.30	17.25	29.80	43.10	57.20	73.15	82.40	91.40
ART	8.50	14.40	24.60	34.70	47.95	63.20	74.20	85.65
ART+INT	9.85	16.95	29.90	41.95	56.05	71.65	81.90	90.80
Puri & Sen	7.25	12.80	23.05	33.90	46.55	61.90	73.45	85.40
v.d.Waerden	9.70	16.35	29.50	42.25	56.40	71.80	82.05	90.80
ATS	7.20	13.05	23.50	34.30	46.80	62.05	73.70	85.55



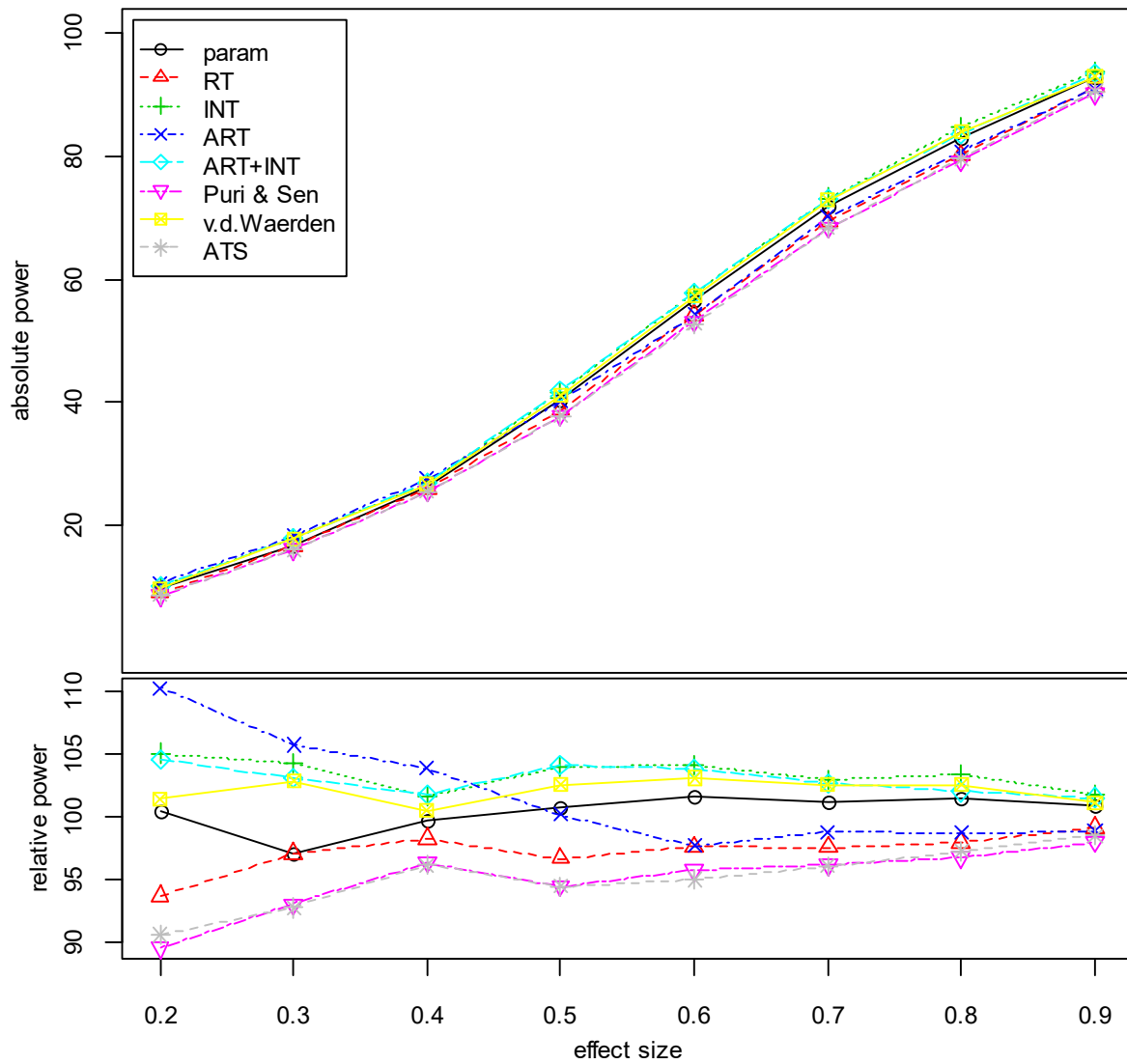
5. 7. 10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.90	15.35	28.90	40.50	56.85	73.10	83.55	92.10
RT	8.55	15.05	27.70	37.60	50.90	67.60	78.40	87.20
INT	9.90	18.35	34.30	46.45	62.65	77.35	86.85	93.60
ART	8.40	15.20	26.65	36.55	50.90	67.65	78.90	87.35
ART+INT	9.95	18.30	32.35	45.25	61.55	76.45	85.90	93.25
Puri & Sen	8.45	14.30	26.60	36.40	49.55	67.15	77.55	86.55
v.d.Waerden	9.15	17.95	33.60	45.35	61.85	76.75	86.10	93.15
ATS	8.30	14.70	27.25	37.00	50.20	67.10	78.05	86.90



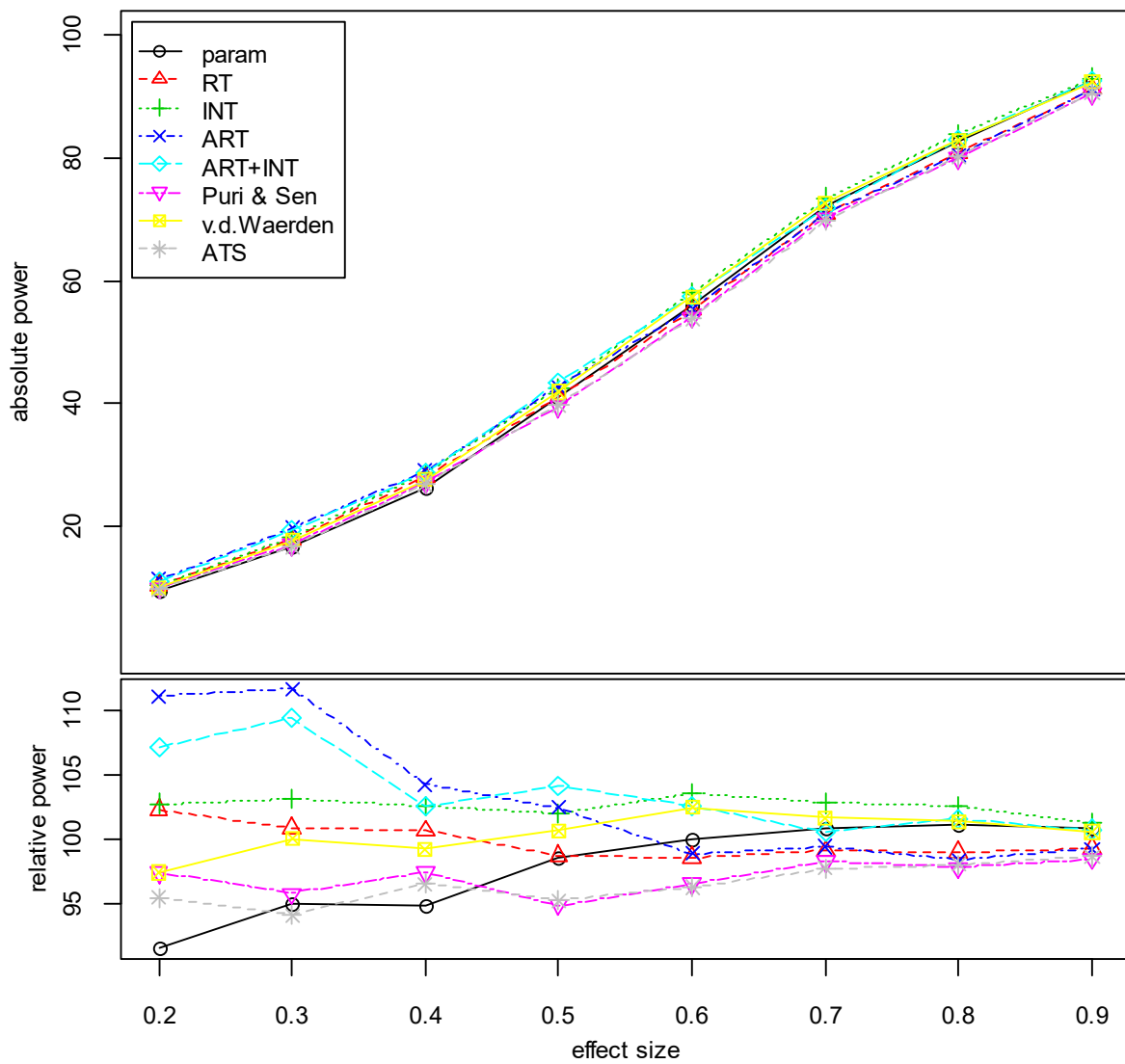
5. 7. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.70	16.80	26.45	40.35	56.45	71.95	83.05	92.80
RT	9.05	16.80	26.05	38.75	54.20	69.35	80.20	91.15
INT	10.15	18.05	26.95	41.65	57.80	73.20	84.60	93.60
ART	10.65	18.30	27.55	40.15	54.25	70.20	80.80	90.90
ART+INT	10.10	17.85	27.00	41.75	57.65	73.00	83.50	93.35
Puri & Sen	8.65	16.10	25.55	37.85	53.15	68.35	79.20	90.10
v.d.Waerden	9.80	17.80	26.65	41.10	57.25	72.90	83.95	92.95
ATS	8.75	16.05	25.50	37.85	52.75	68.30	79.60	90.55



5. 7. 12 left skewed distribution - unequal variances (on A and B)

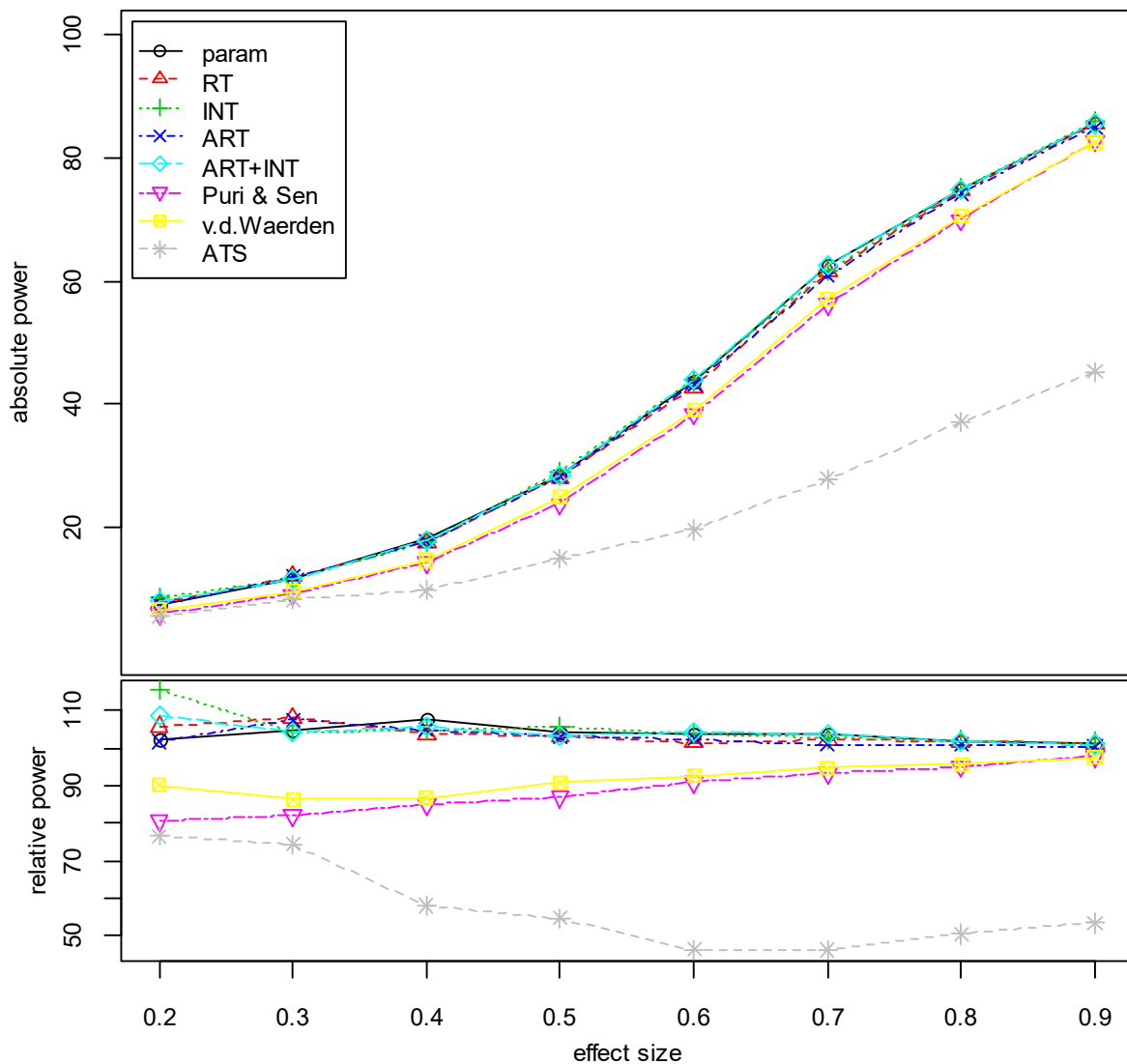
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.40	16.80	26.45	41.00	55.95	72.10	82.60	92.55
RT	10.50	17.85	28.05	41.10	55.20	70.85	80.90	91.15
INT	10.55	18.25	28.60	42.45	58.00	73.50	83.75	92.95
ART	11.40	19.75	29.05	42.65	55.35	71.10	80.40	91.10
ART+INT	11.00	19.35	28.60	43.35	57.40	71.90	83.00	92.50
Puri & Sen	10.00	16.95	27.15	39.50	54.05	70.25	79.90	90.40
v.d.Waerden	10.00	17.70	27.65	41.90	57.35	72.70	82.85	92.30
ATS	9.80	16.65	26.90	39.65	53.90	69.90	80.10	90.55



5.8. Interaction AB (unequal $n_i \sim 5$ / # levels = 4×5)

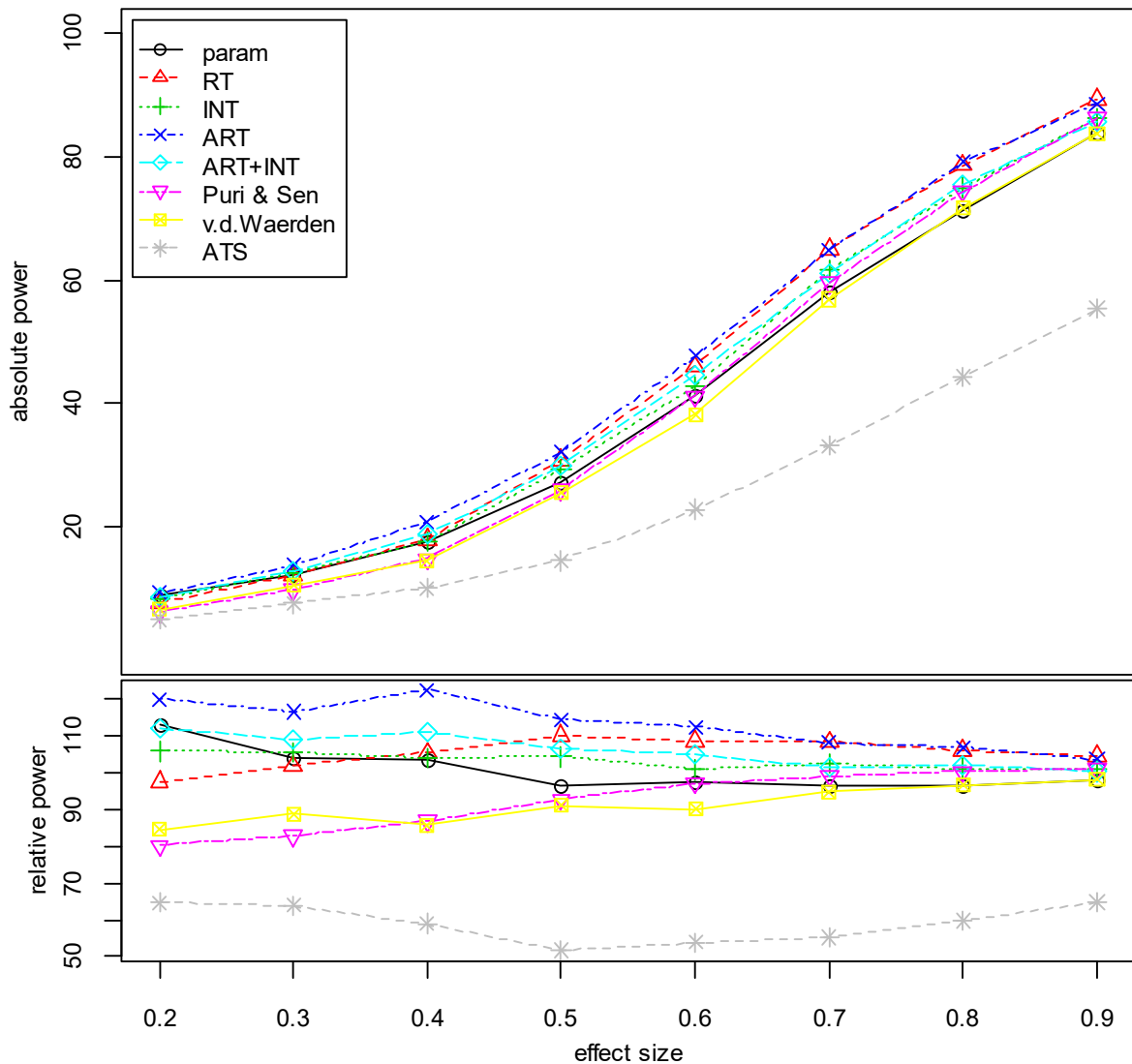
5.8.1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.55	11.70	18.20	28.50	43.80	62.55	74.85	85.60
RT	7.80	12.05	17.50	28.20	42.85	61.50	74.70	85.60
INT	8.50	11.65	17.70	28.95	43.85	61.80	75.00	85.90
ART	7.50	12.00	17.70	28.20	43.25	60.85	74.25	84.90
ART+INT	8.00	11.65	17.85	28.30	44.00	62.60	74.90	85.50
Puri & Sen	5.95	9.15	14.35	23.80	38.40	56.25	69.95	82.70
v.d.Waerden	6.65	9.65	14.65	24.85	39.05	57.05	70.45	82.55
ATS	5.65	8.30	9.80	15.00	19.60	27.90	37.15	45.25



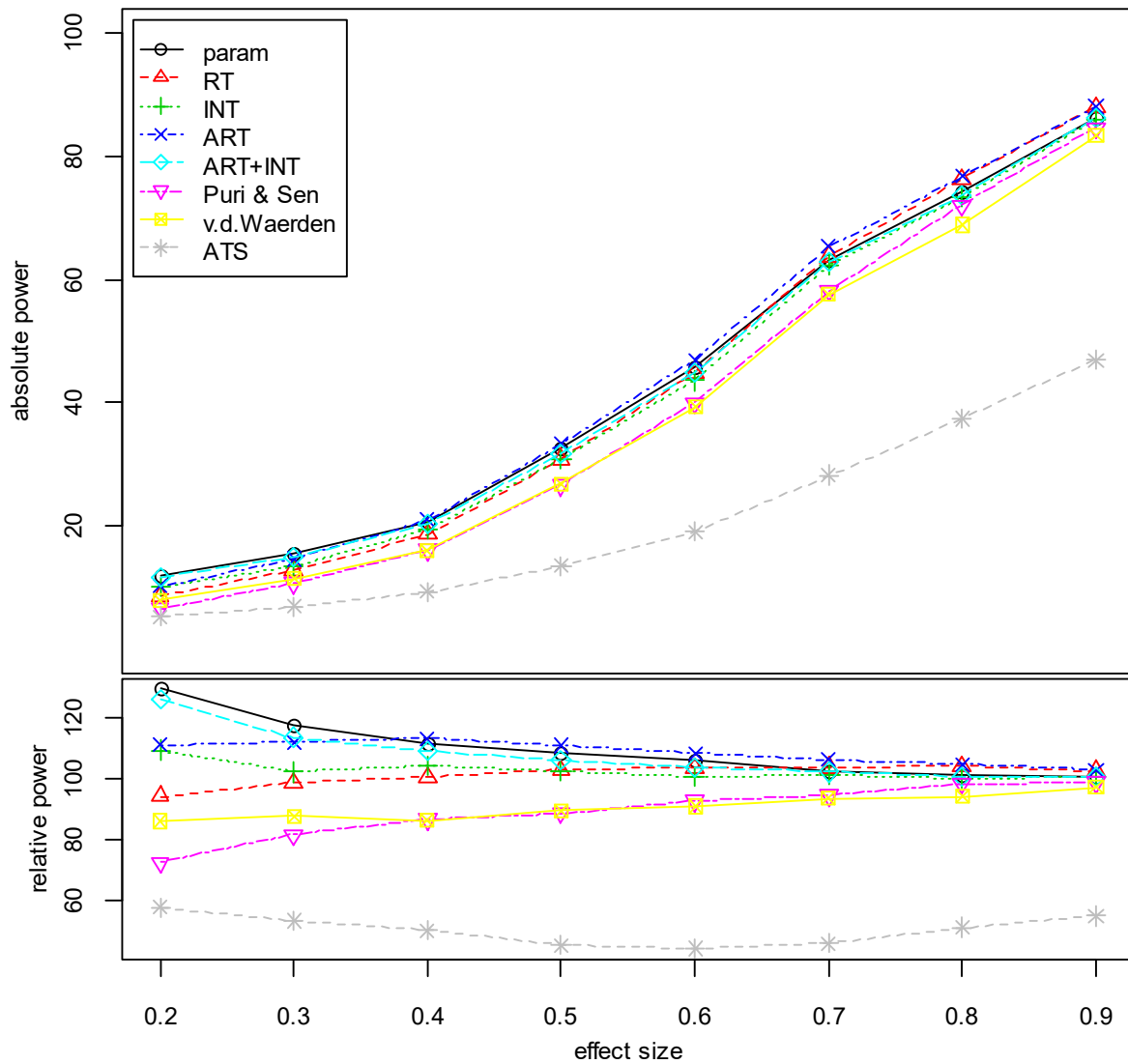
5. 8. 2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.80	12.35	17.65	27.10	41.25	58.00	71.40	83.85
RT	7.60	12.10	17.95	30.90	46.05	65.05	78.55	89.25
INT	8.25	12.55	17.75	29.25	42.75	61.60	75.00	86.10
ART	9.35	13.85	20.85	32.10	47.70	64.90	79.15	88.55
ART+INT	8.75	12.95	18.90	29.85	44.50	61.00	75.55	85.65
Puri & Sen	6.25	9.85	14.80	26.00	41.20	59.50	74.35	86.20
v.d.Waerden	6.60	10.55	14.60	25.55	38.25	56.90	71.60	83.75
ATS	5.05	7.60	10.05	14.50	22.85	33.15	44.30	55.40



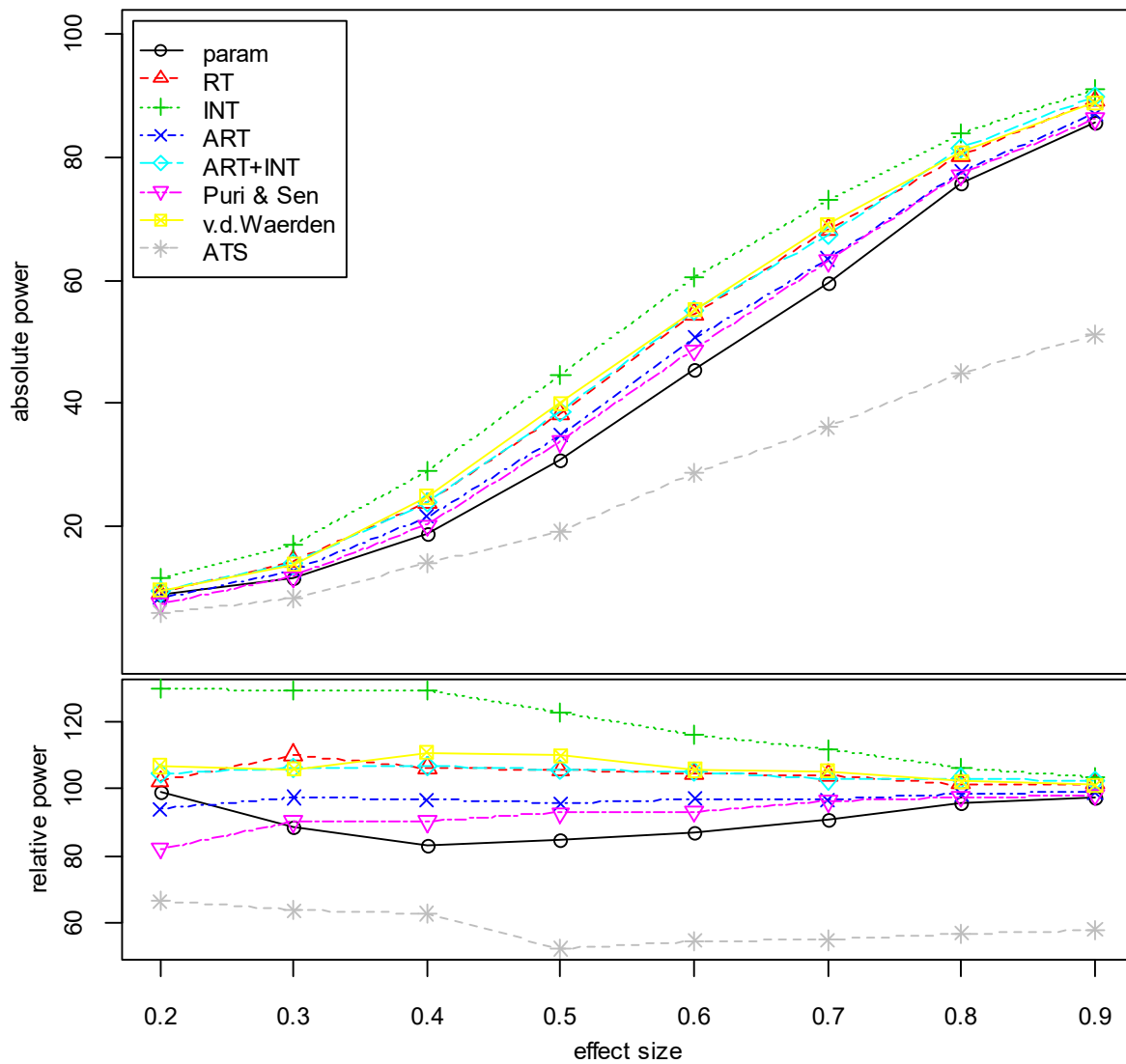
5. 8. 3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.90	15.40	20.70	32.50	45.80	63.10	74.15	86.25
RT	8.65	12.90	18.65	30.80	44.75	63.80	76.20	87.90
INT	10.05	13.35	19.35	30.70	43.55	62.40	73.45	86.00
ART	10.20	14.65	21.00	33.25	46.85	65.35	76.70	88.05
ART+INT	11.60	14.85	20.25	31.75	44.80	62.90	73.75	86.30
Puri & Sen	6.65	10.65	16.05	26.55	40.00	58.20	72.05	84.60
v.d.Waerden	7.90	11.45	16.00	26.80	39.30	57.55	68.85	83.30
ATS	5.30	6.95	9.30	13.55	19.05	28.25	37.40	46.95



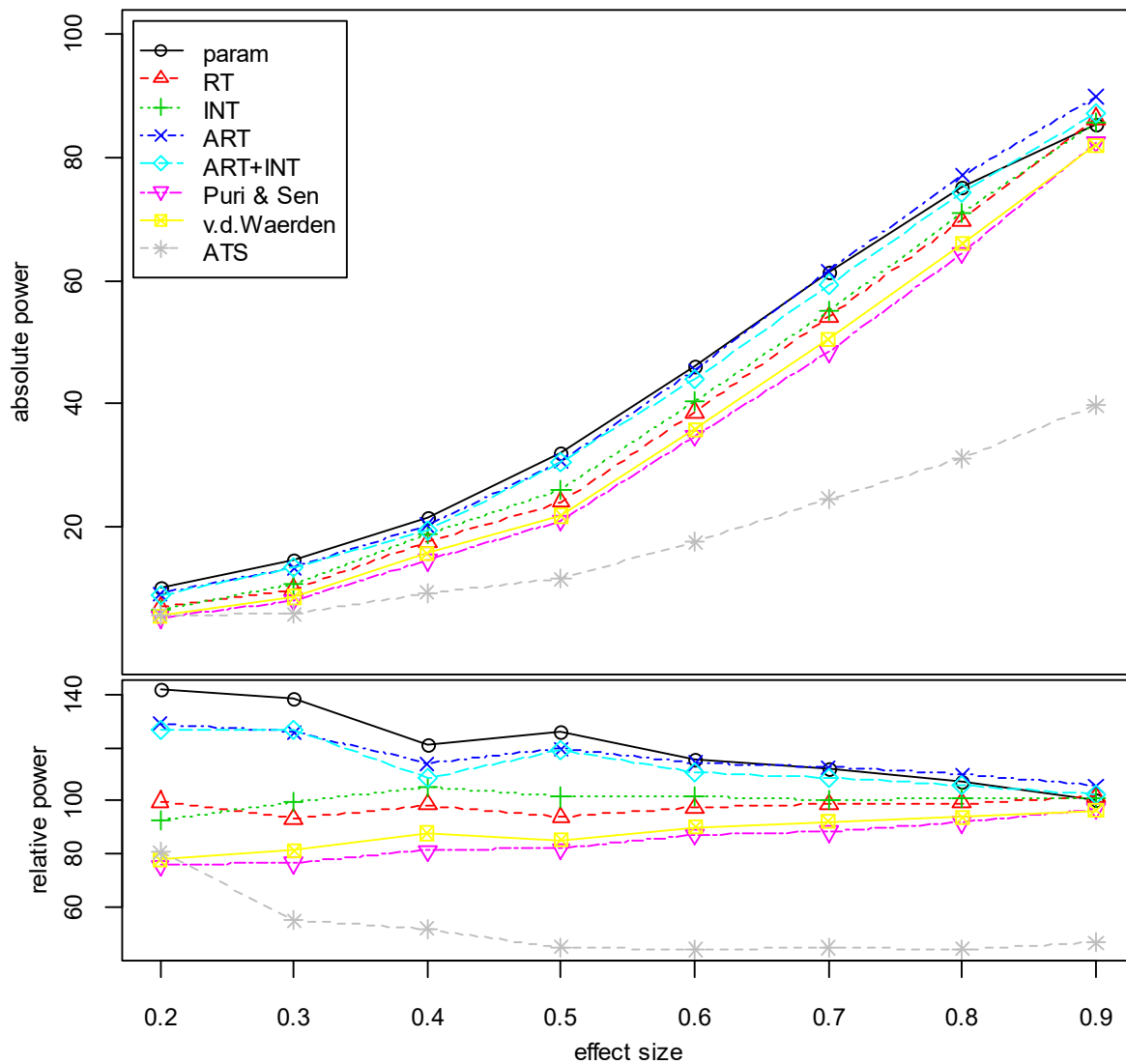
5.8.4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.90	11.60	18.70	30.85	45.50	59.70	75.75	85.65
RT	9.20	14.40	23.80	38.35	54.50	68.30	80.20	89.20
INT	11.65	16.90	28.90	44.65	60.55	73.10	83.80	90.90
ART	8.45	12.75	21.65	34.80	50.65	63.45	77.65	87.00
ART+INT	9.40	13.90	23.90	38.50	55.00	67.35	81.50	89.85
Puri & Sen	7.40	11.80	20.20	33.80	48.65	63.15	77.15	86.20
v.d.Waerden	9.60	13.85	24.80	39.95	55.20	69.05	80.70	88.80
ATS	6.00	8.35	14.10	19.10	28.65	36.10	45.00	51.10



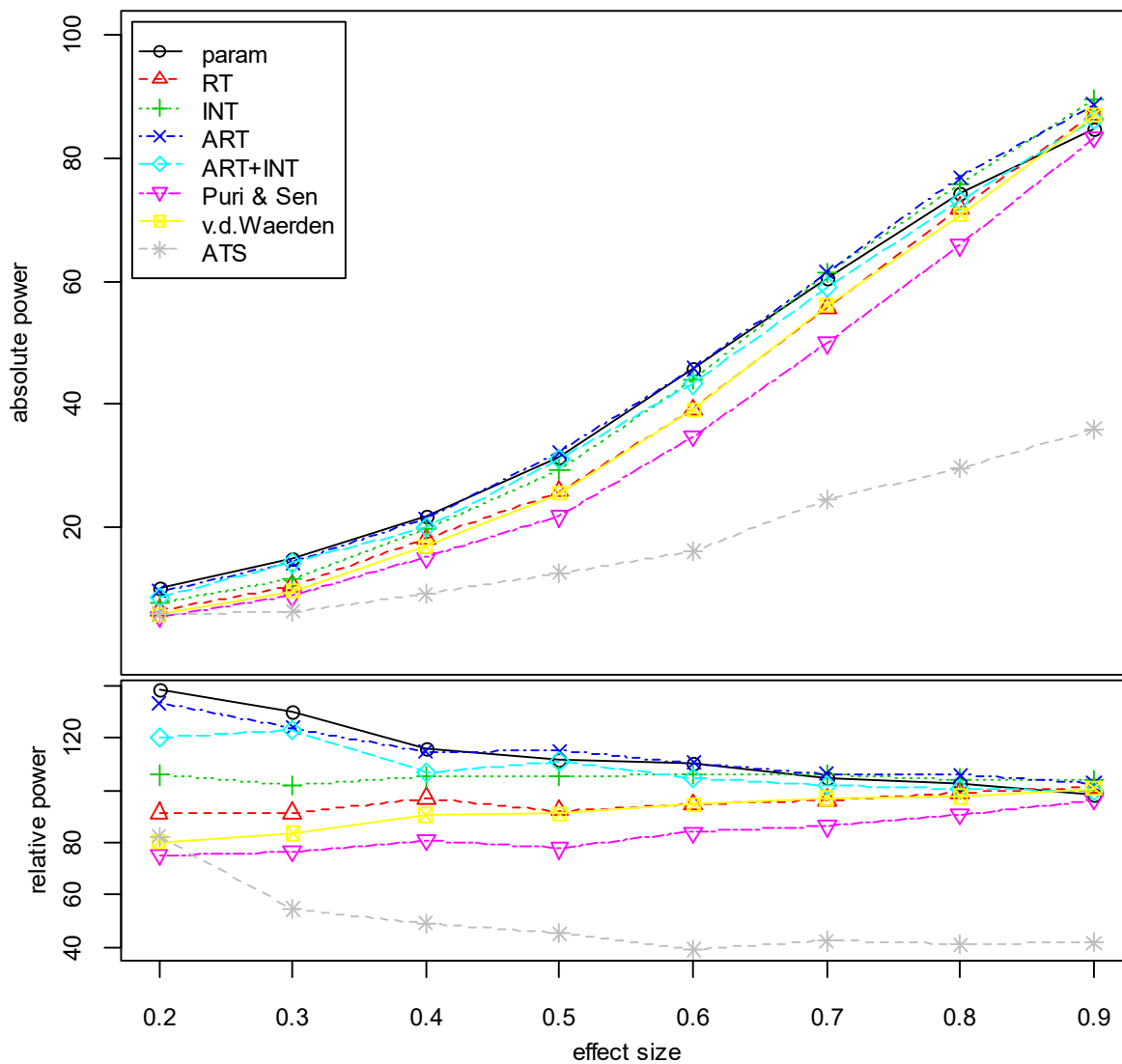
5.8.5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.00	14.70	21.60	32.15	46.00	61.35	75.20	85.40
RT	7.05	9.90	17.60	24.05	38.65	54.10	69.65	86.25
INT	6.55	10.60	18.75	25.95	40.50	55.00	70.90	85.65
ART	9.10	13.35	20.35	30.60	45.35	61.60	77.05	89.80
ART+INT	8.95	13.45	19.45	30.50	44.00	59.40	74.15	87.10
Puri & Sen	5.35	8.15	14.55	21.00	34.75	48.45	64.50	82.45
v.d.Waerden	5.50	8.65	15.70	21.85	35.80	50.55	65.95	81.95
ATS	5.70	5.85	9.30	11.55	17.55	24.60	31.20	39.75



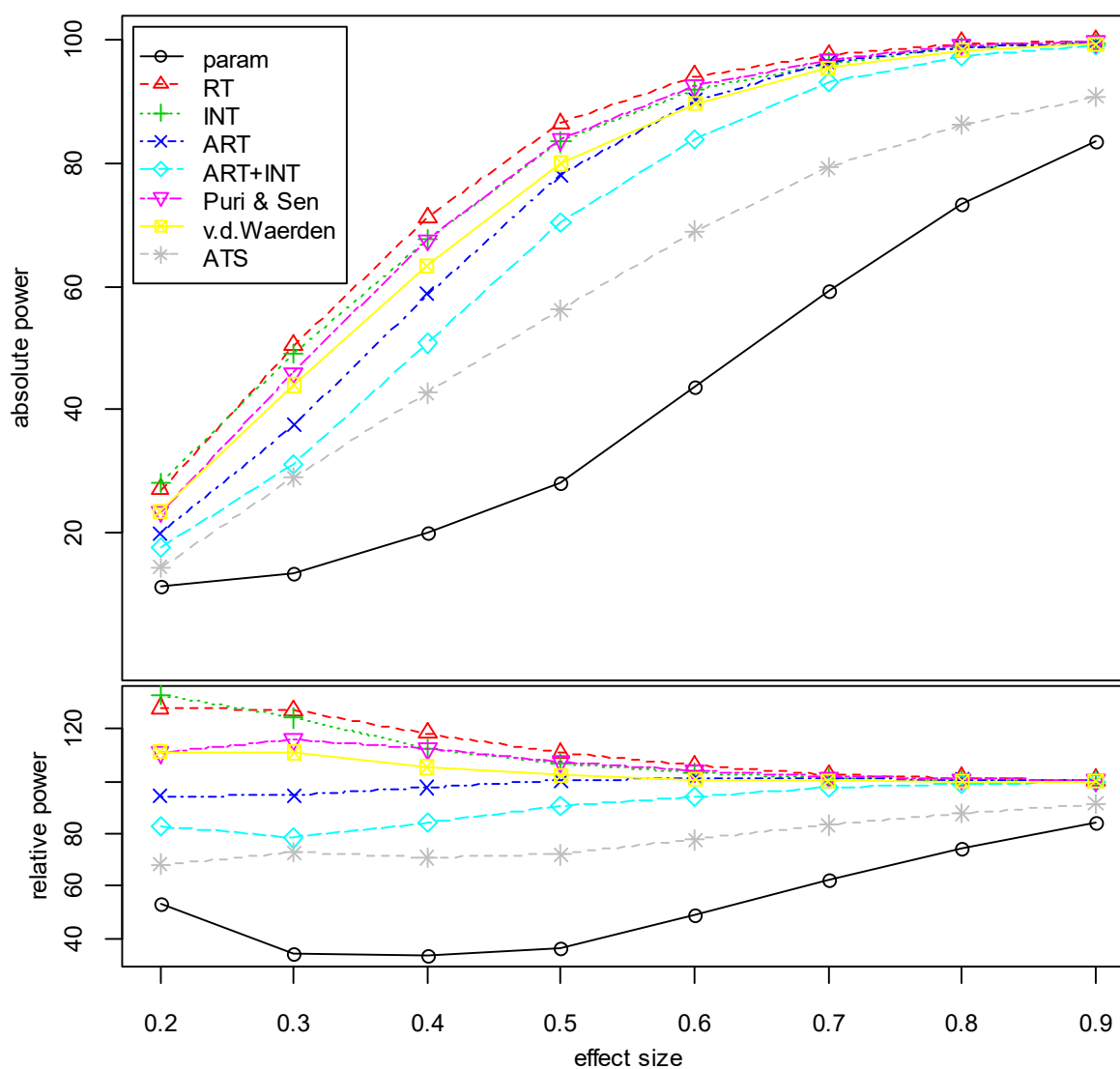
5.8.6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.00	15.00	21.70	31.35	45.65	60.45	74.30	84.60
RT	6.60	10.55	18.10	25.85	39.15	55.70	71.90	87.10
INT	7.65	11.75	19.60	29.45	43.95	61.40	75.70	89.50
ART	9.65	14.30	21.40	32.25	45.80	61.50	76.90	88.65
ART+INT	8.70	14.20	19.95	31.10	43.25	59.10	73.00	86.35
Puri & Sen	5.45	8.85	15.10	21.75	34.75	50.00	65.85	83.35
v.d.Waerden	5.80	9.65	16.90	25.50	39.15	56.10	70.80	86.95
ATS	5.95	6.30	9.15	12.65	16.15	24.45	29.70	35.95



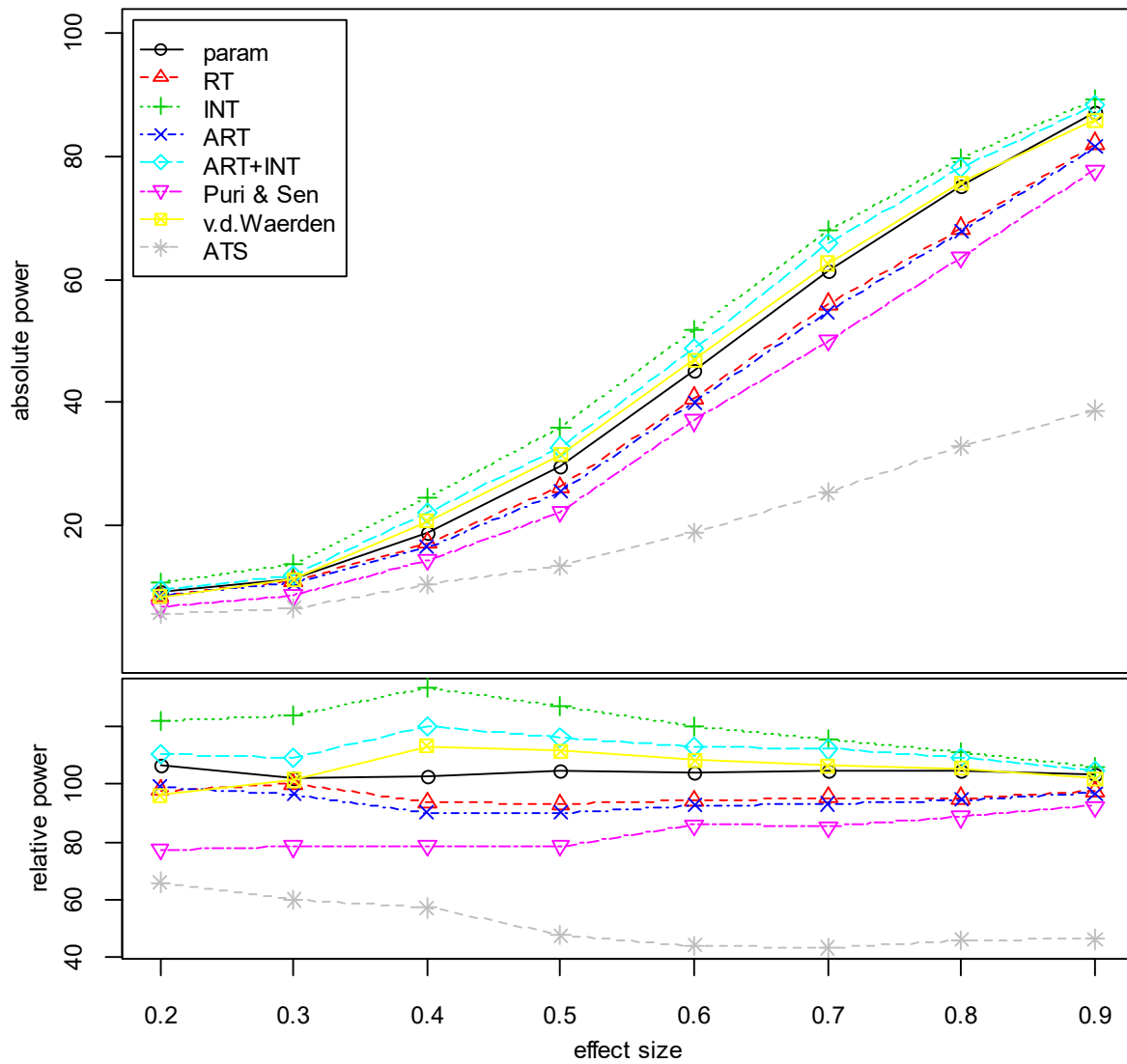
5.8.7 lognormal distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.25	13.55	20.15	28.20	43.65	59.30	73.30	83.65
RT	27.05	50.40	71.15	86.50	94.15	97.50	99.55	99.85
INT	28.00	49.20	67.75	83.40	91.80	96.25	98.80	99.45
ART	19.95	37.55	58.75	78.10	90.20	96.30	98.80	99.50
ART+INT	17.55	31.05	50.75	70.45	83.95	93.05	97.25	99.10
Puri & Sen	23.45	45.95	67.55	83.85	92.50	96.80	99.15	99.65
v.d.Waerden	23.50	44.00	63.40	79.95	89.60	95.45	98.30	99.30
ATS	14.45	28.90	42.65	56.15	69.00	79.30	86.35	90.85



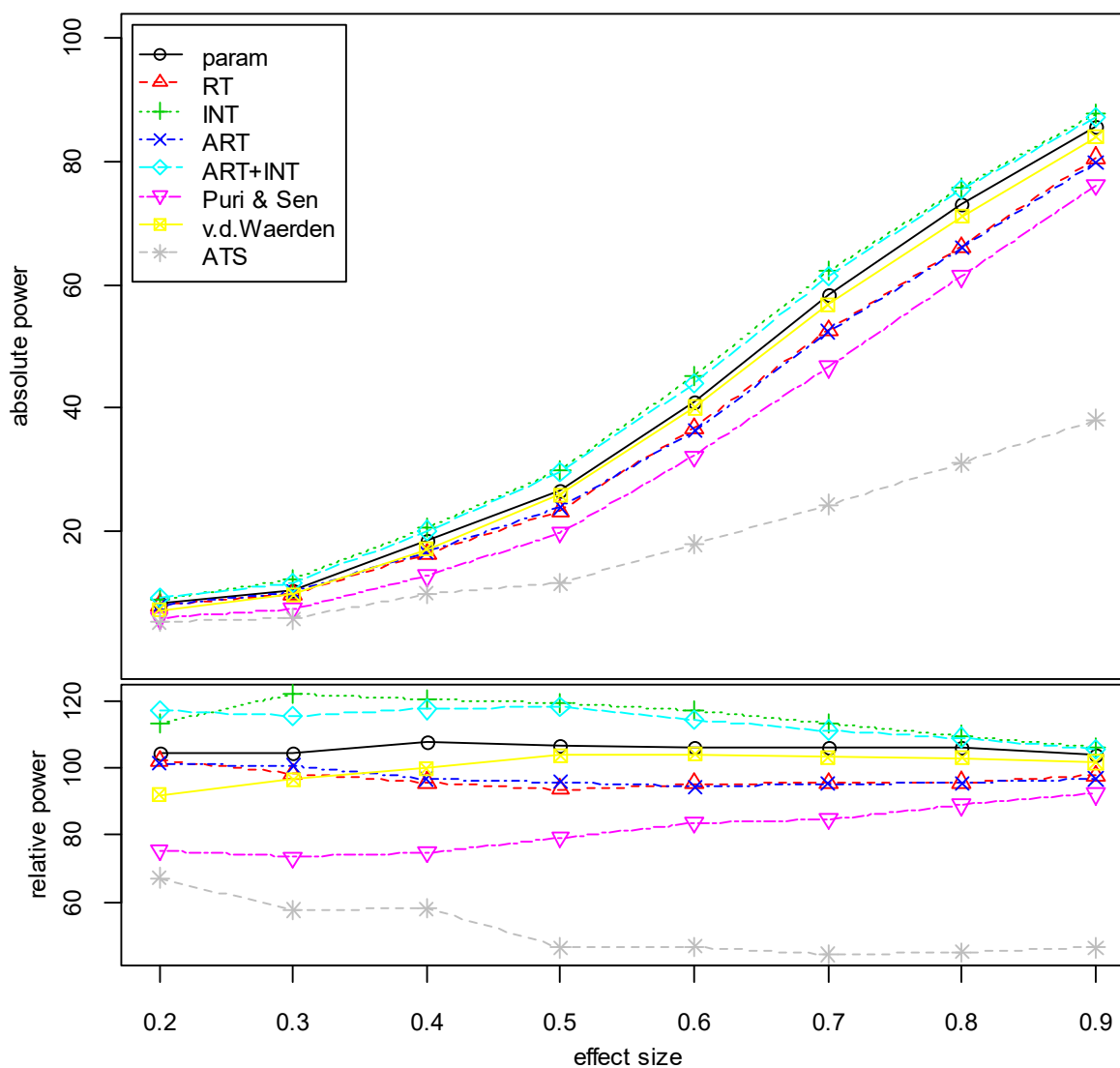
5. 8. 8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.30	11.25	18.90	29.60	45.05	61.50	75.05	87.15
RT	8.55	11.05	17.15	26.25	40.75	56.00	68.30	82.05
INT	10.65	13.70	24.45	35.90	51.75	68.00	79.70	89.15
ART	8.65	10.65	16.55	25.45	40.05	54.70	67.80	81.55
ART+INT	9.65	12.05	22.00	32.75	48.80	65.80	78.15	88.20
Puri & Sen	6.75	8.65	14.40	22.20	37.05	50.05	63.60	77.70
v.d.Waerden	8.40	11.20	20.75	31.50	46.85	62.55	75.65	85.85
ATS	5.75	6.60	10.45	13.40	18.95	25.30	32.85	38.75



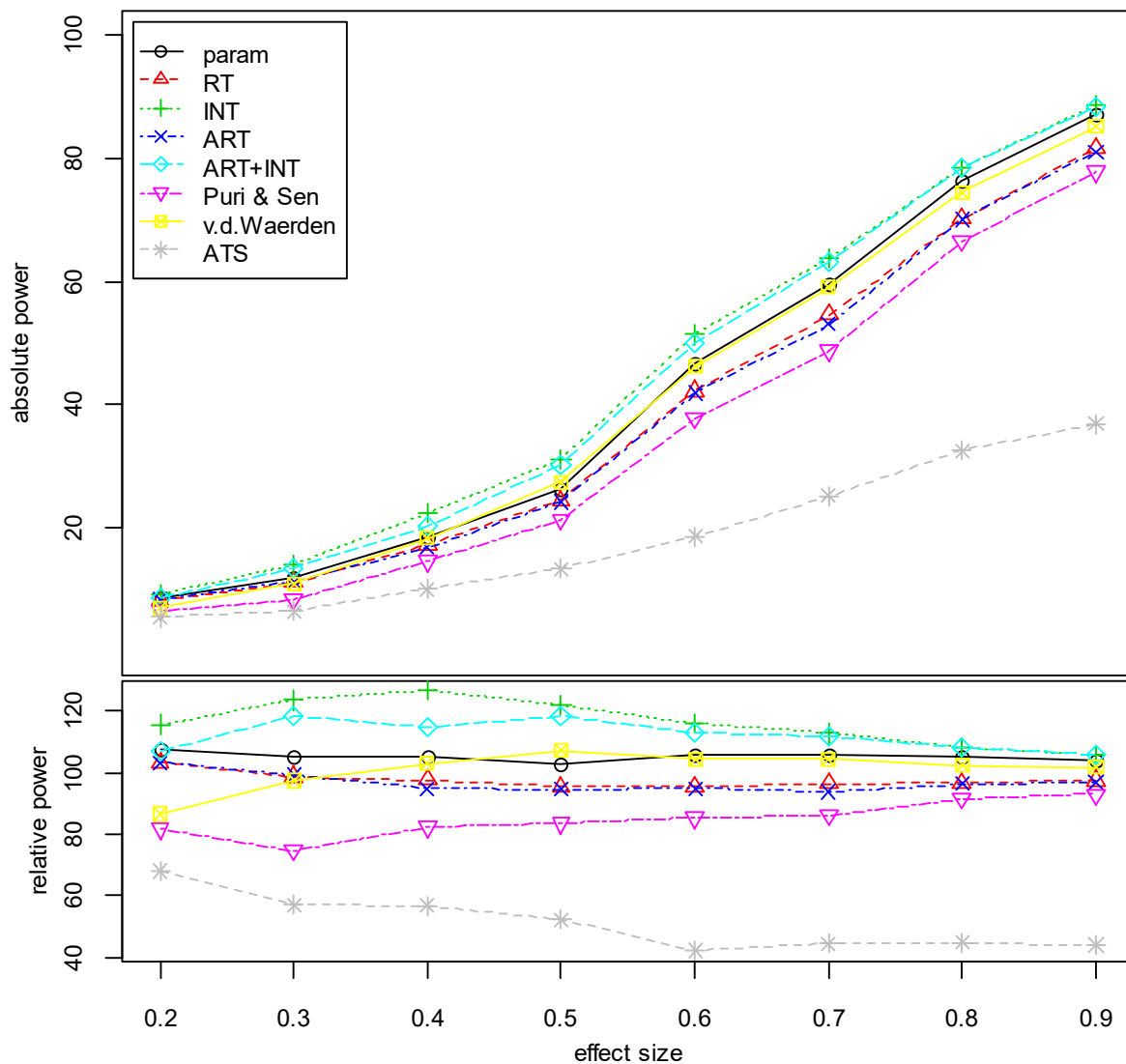
5.8.9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.25	10.55	18.45	26.65	40.85	58.40	73.15	85.70
RT	8.05	9.90	16.40	23.40	36.70	52.55	66.05	80.60
INT	8.95	12.30	20.70	29.80	45.10	62.25	75.75	87.65
ART	8.00	10.15	16.60	23.95	36.35	52.40	65.90	79.90
ART+INT	9.25	11.65	20.15	29.55	44.10	61.30	75.35	87.15
Puri & Sen	5.95	7.40	12.85	19.80	32.20	46.60	61.35	76.15
v.d.Waerden	7.25	9.75	17.15	25.90	40.10	56.80	71.05	83.95
ATS	5.30	5.80	9.95	11.55	17.95	24.35	31.00	38.15



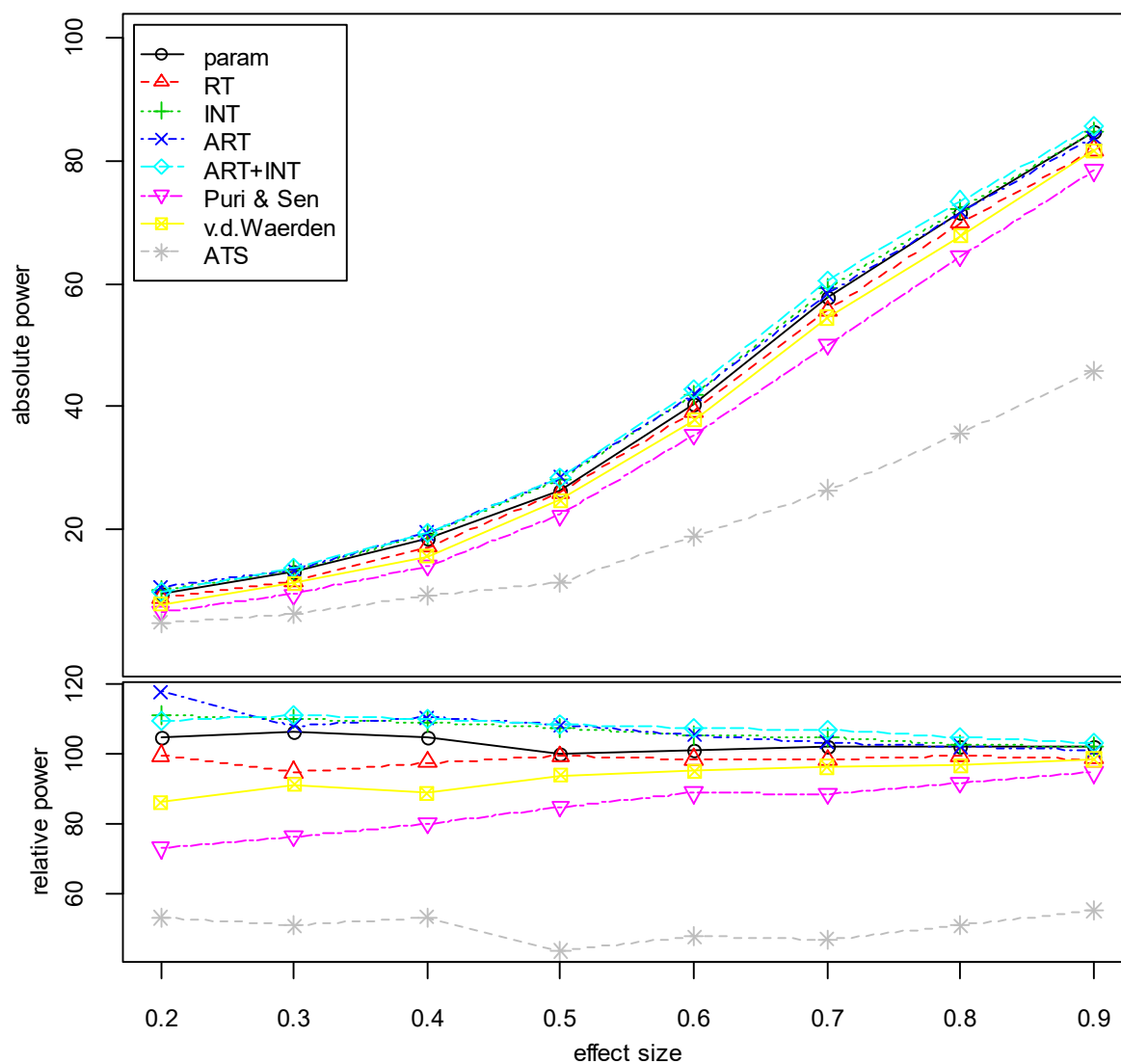
5. 8. 10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.70	11.85	18.65	26.35	46.75	59.70	76.25	87.15
RT	8.35	11.15	17.35	24.40	42.20	54.60	70.15	81.60
INT	9.35	13.95	22.50	31.15	51.35	63.80	78.50	88.50
ART	8.35	11.20	16.85	24.20	41.90	53.05	70.05	81.00
ART+INT	8.65	13.35	20.40	30.30	50.00	63.25	78.55	88.40
Puri & Sen	6.60	8.45	14.65	21.35	37.80	48.80	66.60	77.80
v.d.Waerden	7.00	11.00	18.30	27.40	46.20	59.10	74.45	85.10
ATS	5.50	6.45	10.10	13.35	18.65	25.15	32.50	36.85



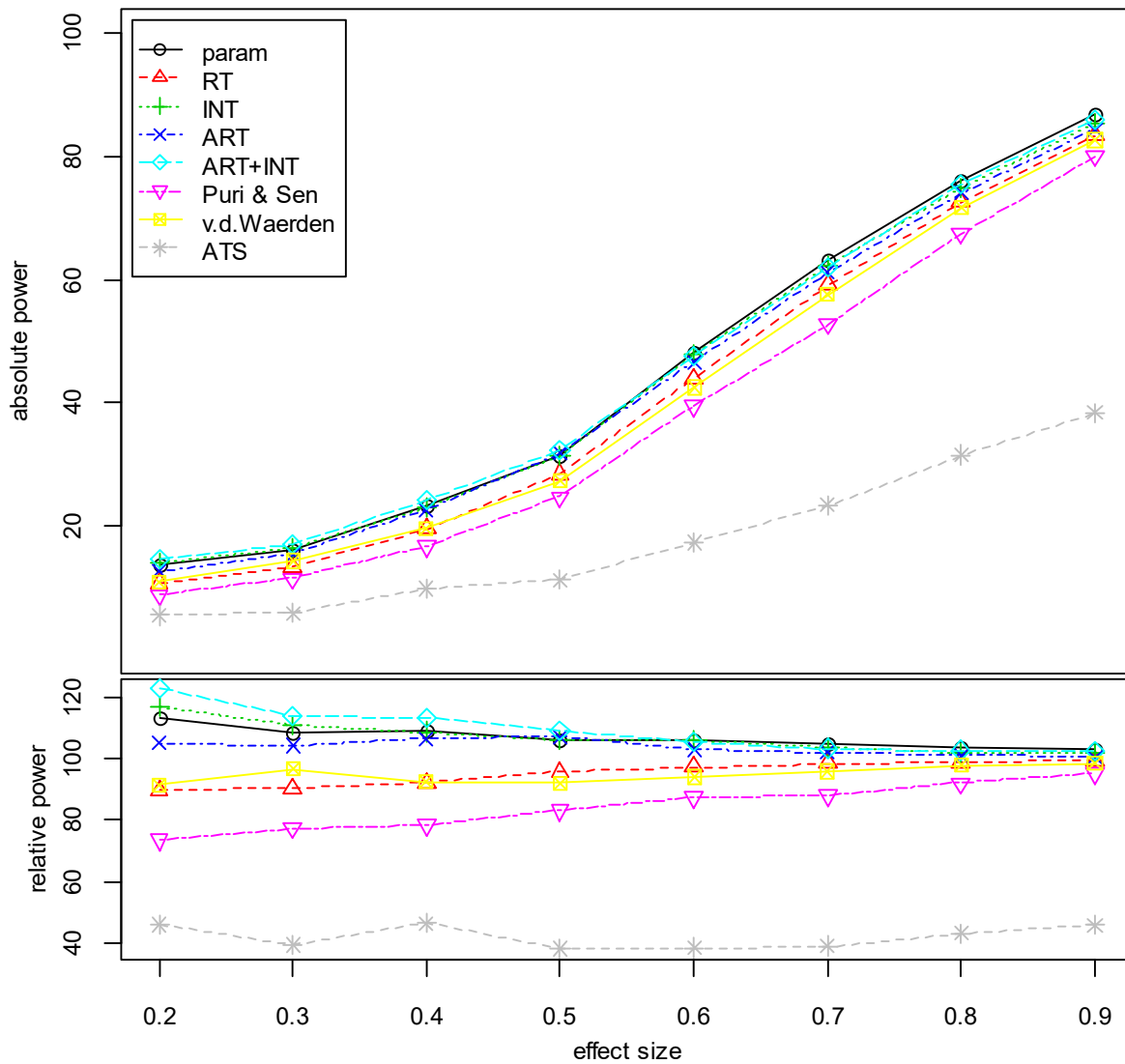
5. 8. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.50	13.05	18.40	26.25	40.25	57.85	71.55	84.75
RT	9.00	11.65	17.15	26.10	39.20	55.55	69.85	81.75
INT	10.05	13.55	19.20	28.20	41.95	59.20	72.20	84.70
ART	10.65	13.30	19.40	28.50	41.95	58.35	71.70	83.70
ART+INT	9.90	13.65	19.35	28.50	42.75	60.50	73.50	85.55
Puri & Sen	6.60	9.40	14.10	22.30	35.40	50.10	64.40	78.45
v.d.Waerden	7.80	11.20	15.60	24.70	37.80	54.45	67.80	81.60
ATS	4.80	6.25	9.35	11.45	18.95	26.45	35.65	45.70



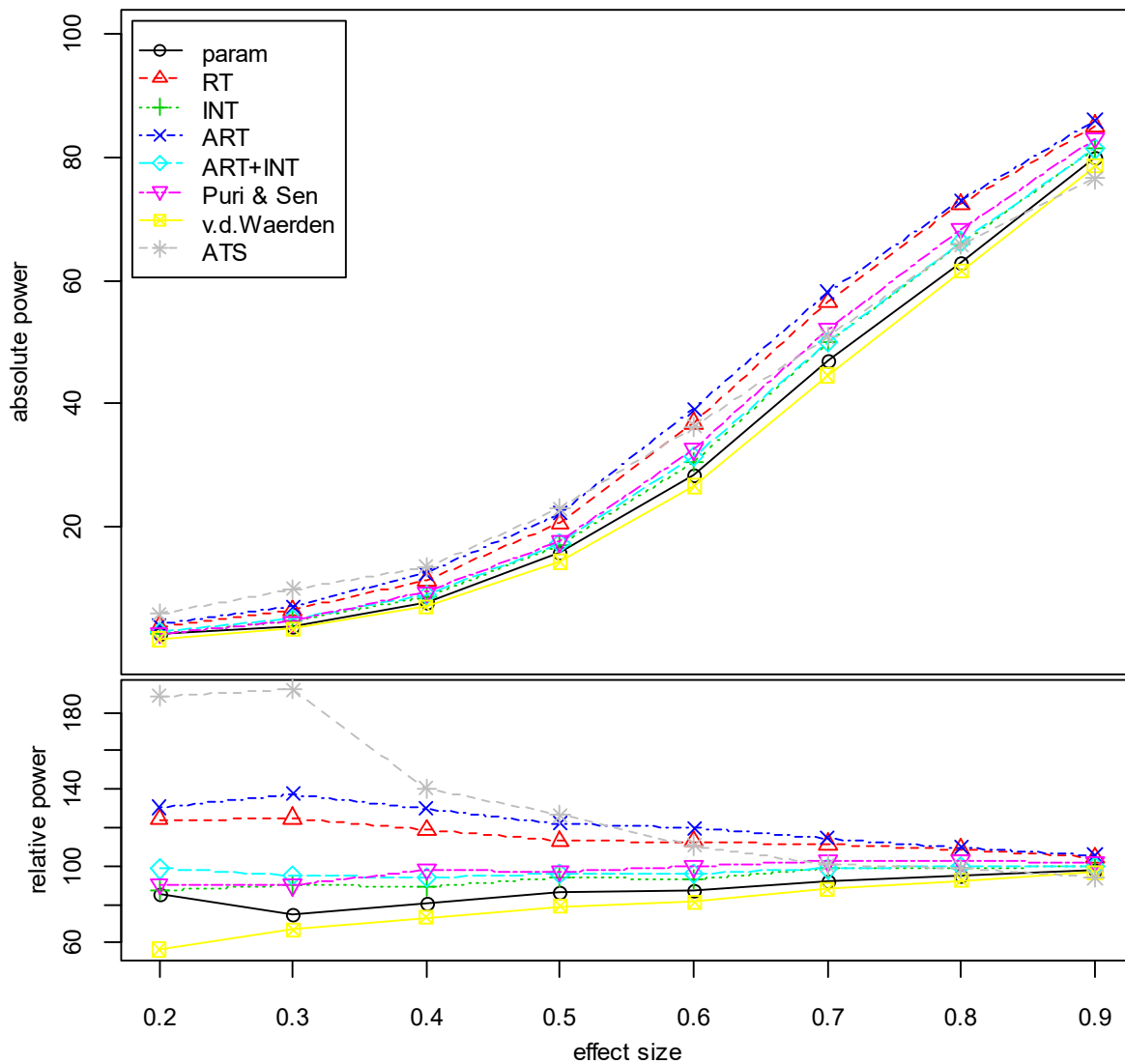
5. 8. 12 left skewed distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.60	16.15	23.20	31.40	48.05	63.10	76.10	86.75
RT	10.75	13.40	19.55	28.40	43.95	59.10	72.60	83.35
INT	14.00	16.50	23.10	31.45	47.95	62.35	74.75	85.35
ART	12.60	15.50	22.60	31.75	46.60	61.20	74.05	84.40
ART+INT	14.70	16.95	24.10	32.30	47.60	62.00	75.35	86.00
Puri & Sen	8.80	11.50	16.65	24.70	39.50	52.80	67.50	80.00
v.d.Waerden	10.95	14.35	19.65	27.35	42.50	57.55	71.70	82.65
ATS	5.50	5.85	9.85	11.30	17.35	23.40	31.55	38.40



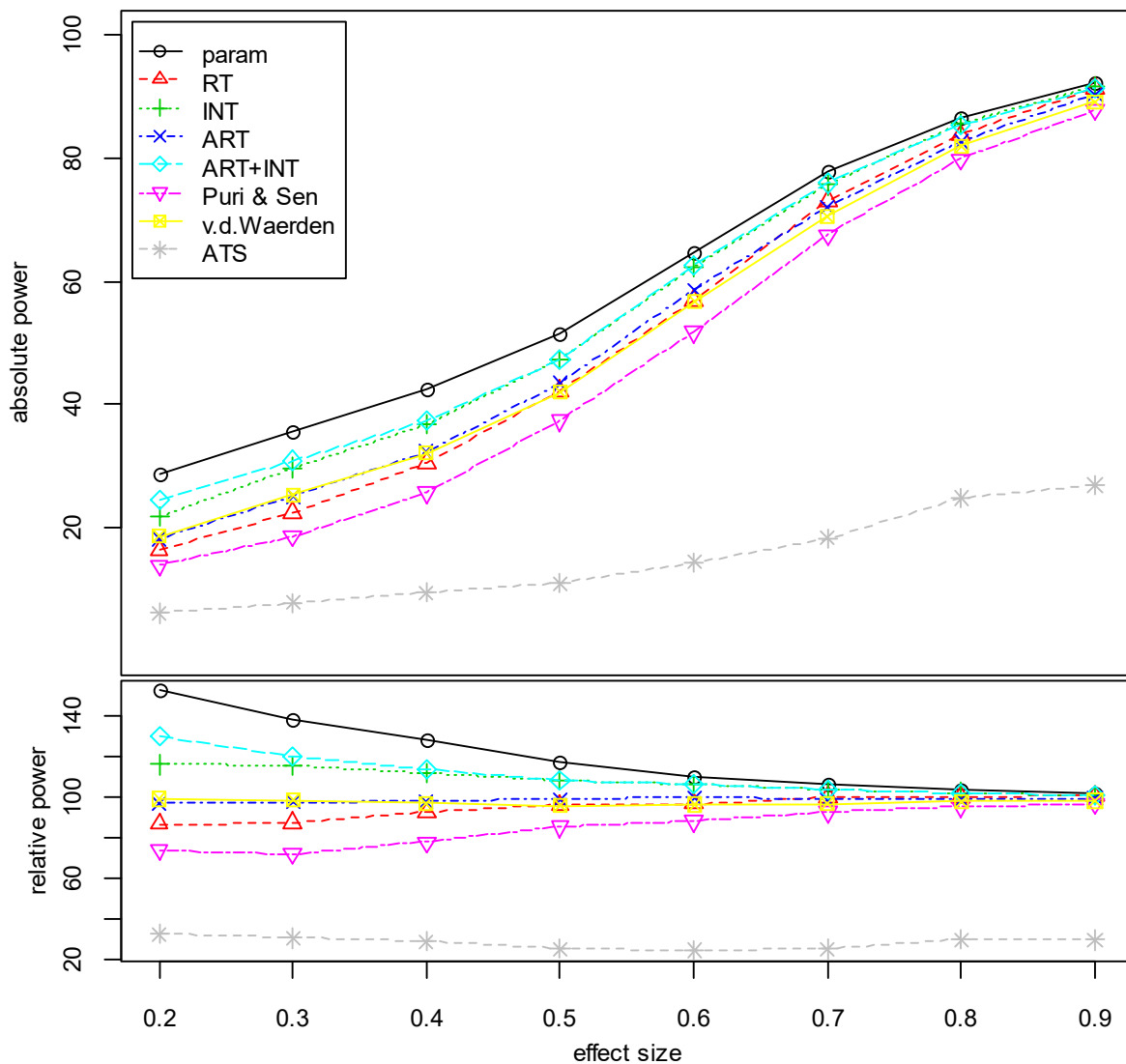
5. 8. 13 normal distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	2.65	3.85	7.70	15.75	28.45	46.85	62.95	79.85
RT	3.85	6.45	11.40	20.50	36.85	56.45	72.40	85.05
INT	2.70	4.65	8.55	17.05	30.55	49.95	66.00	81.35
ART	4.05	7.10	12.50	22.20	39.10	58.05	73.00	85.95
ART+INT	3.05	4.90	9.05	17.40	31.45	49.95	66.30	81.30
Puri & Sen	2.80	4.65	9.45	17.65	32.55	52.15	68.30	83.00
v.d.Waerden	1.75	3.45	7.05	14.35	26.60	44.60	61.50	78.55
ATS	5.85	9.90	13.50	22.95	36.25	50.90	65.80	76.50



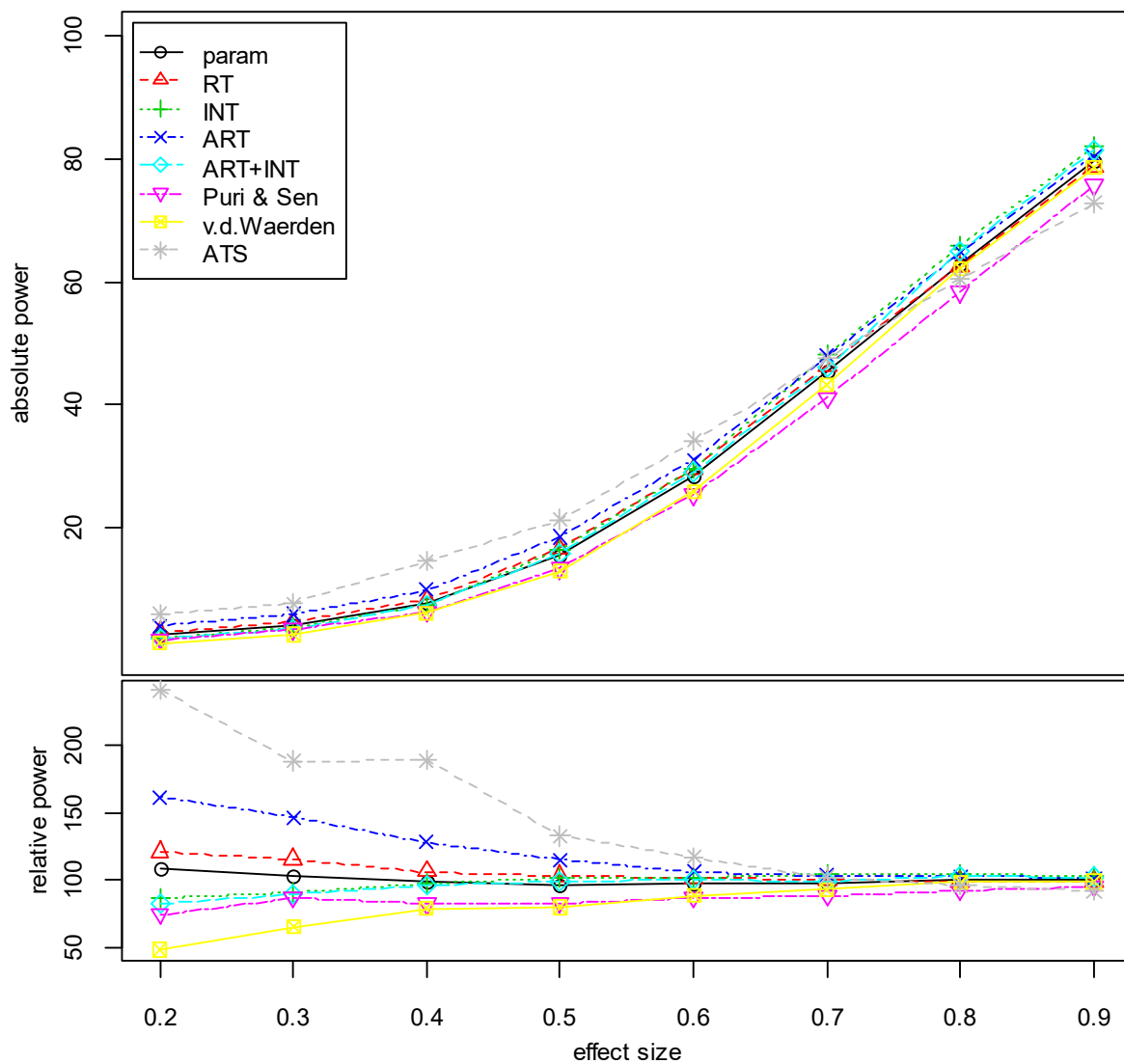
5. 8. 14 normal distribution - unequal variances (small n_i - large s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	28.65	35.55	42.35	51.55	64.80	77.95	86.50	92.25
RT	16.30	22.45	30.55	42.20	56.90	73.05	83.80	91.30
INT	21.80	29.75	36.90	47.30	62.40	75.60	85.55	91.55
ART	18.25	25.10	32.30	43.40	58.55	72.05	82.65	90.35
ART+INT	24.40	30.95	37.50	47.30	62.45	75.90	85.30	91.45
Puri & Sen	13.90	18.60	25.70	37.40	51.75	67.55	79.85	87.80
v.d.Waerden	18.65	25.35	32.05	41.95	56.70	70.55	81.95	89.15
ATS	6.10	7.85	9.50	11.00	14.40	18.30	24.80	26.90



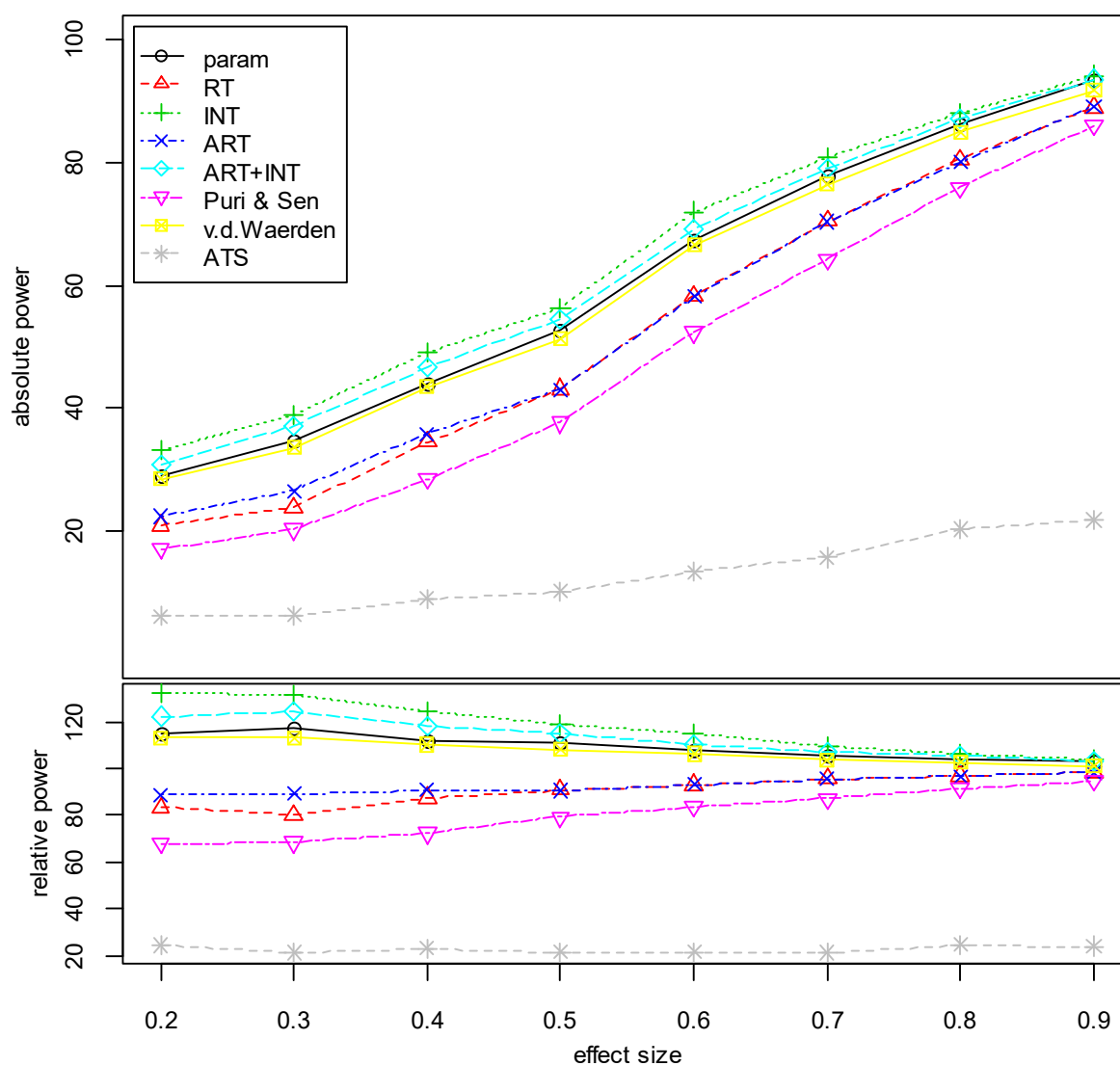
5. 8. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	2.70	4.20	7.65	15.55	28.30	45.50	62.95	79.75
RT	3.00	4.70	8.20	16.65	29.50	46.45	62.45	78.80
INT	2.15	3.70	7.55	16.35	29.70	48.20	65.80	82.15
ART	4.00	5.95	9.90	18.50	31.00	47.95	64.70	80.50
ART+INT	2.05	3.65	7.45	15.90	29.15	46.10	64.90	81.30
Puri & Sen	1.85	3.55	6.35	13.35	25.35	41.20	58.40	75.70
v.d.Waerden	1.20	2.65	6.10	12.90	25.90	43.25	62.15	78.55
ATS	5.95	7.65	14.55	21.35	34.15	47.50	60.40	72.90



5. 8. 16 left skewed distribution - unequal variances (small n_i - large s_j)

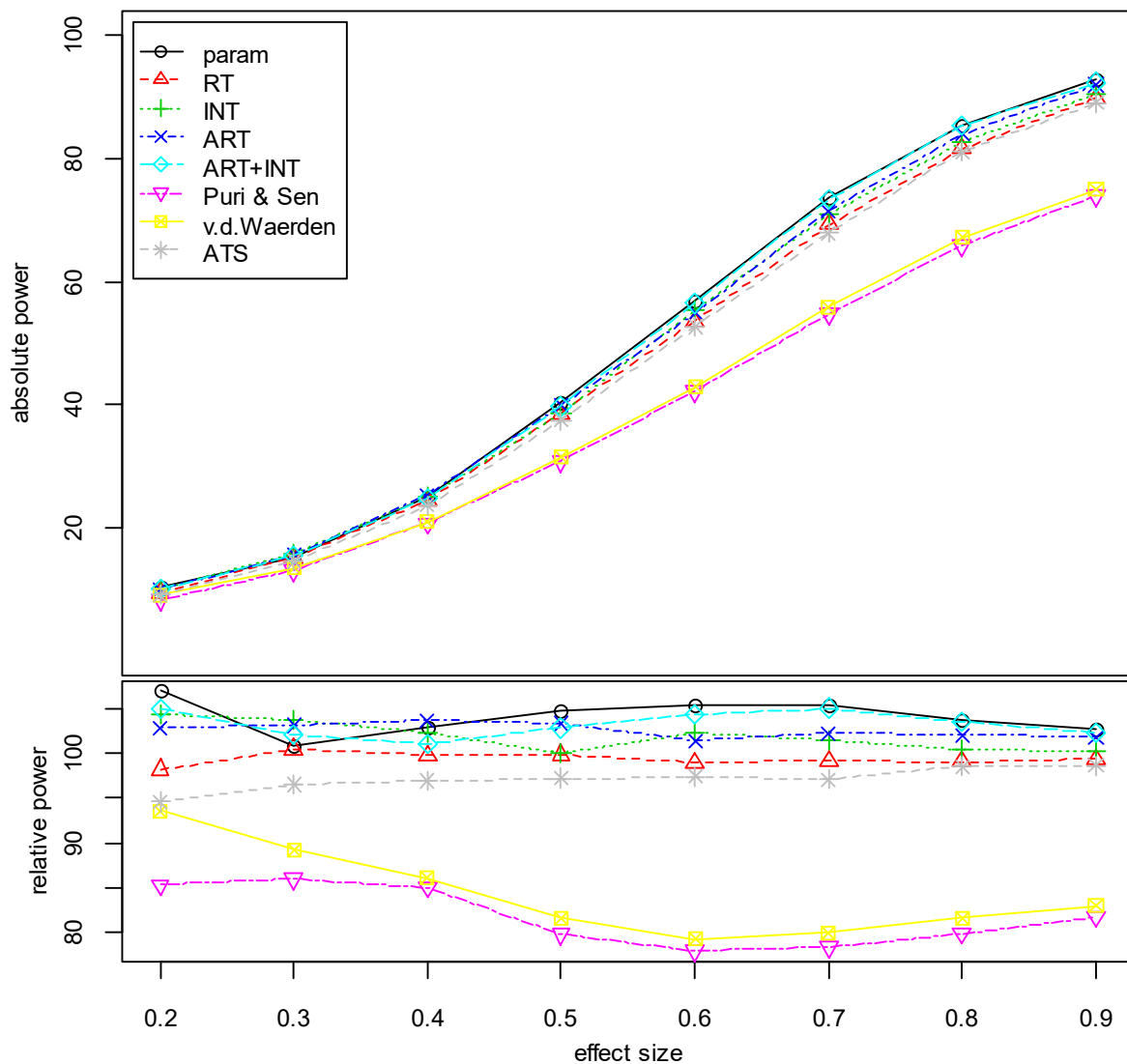
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	29.00	34.85	44.00	52.65	67.50	77.75	86.35	93.40
RT	20.95	23.80	34.55	43.15	58.25	70.45	80.40	89.00
INT	33.25	38.95	49.05	56.30	72.00	80.85	87.95	94.15
ART	22.40	26.50	35.80	43.00	58.20	70.35	80.05	89.20
ART+INT	30.85	37.00	46.60	54.45	69.10	79.05	87.25	93.55
Puri & Sen	17.10	20.30	28.50	37.65	52.35	64.25	75.95	86.05
v.d.Waerden	28.50	33.60	43.45	51.30	66.50	76.45	85.00	91.70
ATS	6.15	6.30	9.05	10.25	13.40	15.70	20.35	21.80



5. 9. Interaction AB - A and B significant (equal $n_i=10$ / # levels = $2*4$)

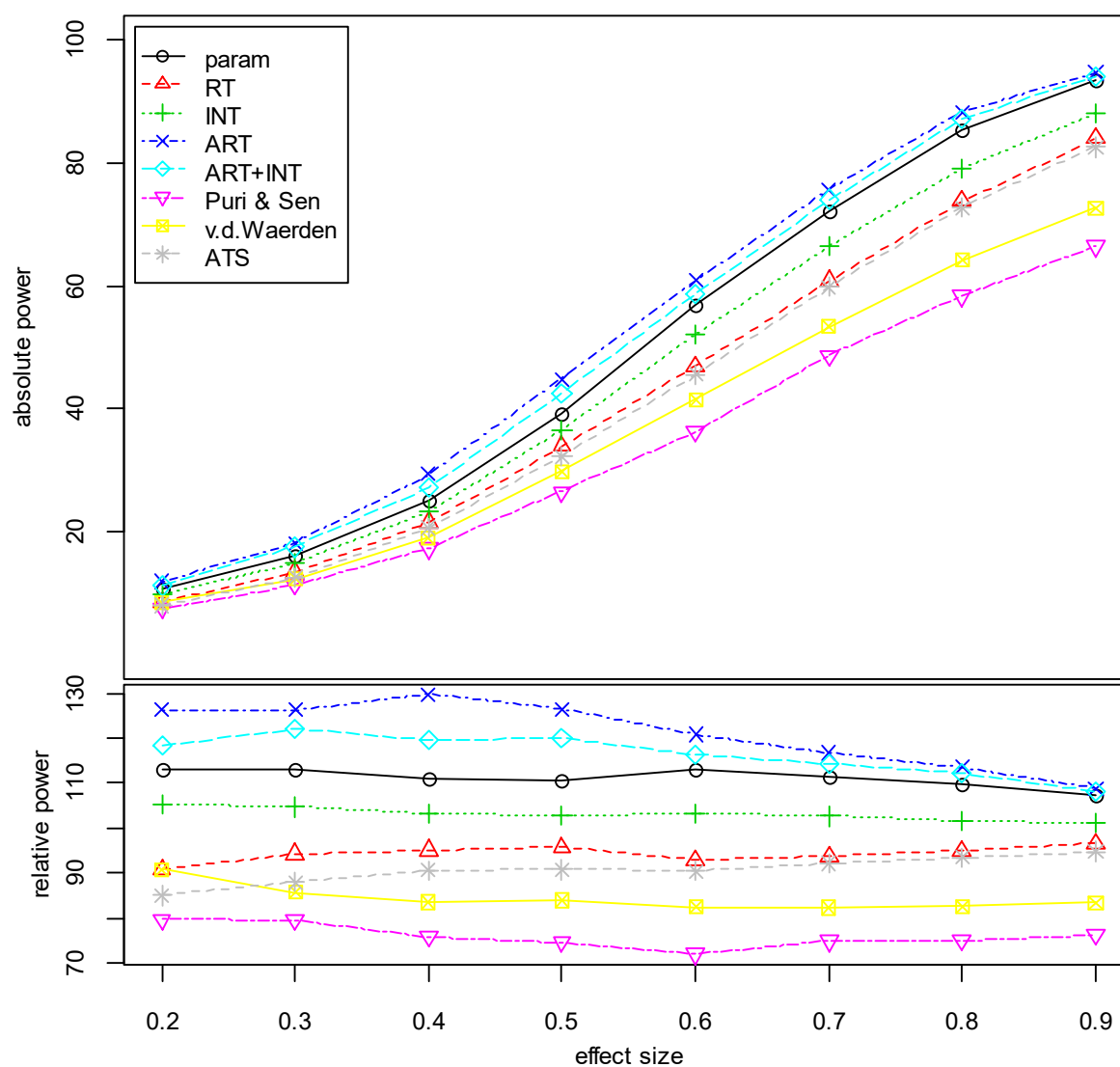
5. 9. 1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.40	15.30	25.15	40.40	57.00	73.60	85.40	92.70
RT	9.55	15.25	24.40	38.50	53.50	69.25	81.55	89.75
INT	10.15	15.75	25.00	38.60	55.30	70.90	82.60	90.45
ART	10.00	15.65	25.35	39.85	54.85	71.45	83.95	91.95
ART+INT	10.20	15.50	24.70	39.65	56.45	73.40	85.25	92.35
Puri & Sen	8.30	13.05	20.80	30.80	42.20	54.80	65.80	73.90
v.d.Waerden	9.10	13.55	21.05	31.50	42.90	55.90	67.20	74.95
ATS	9.20	14.65	23.70	37.50	52.70	67.85	81.10	89.05



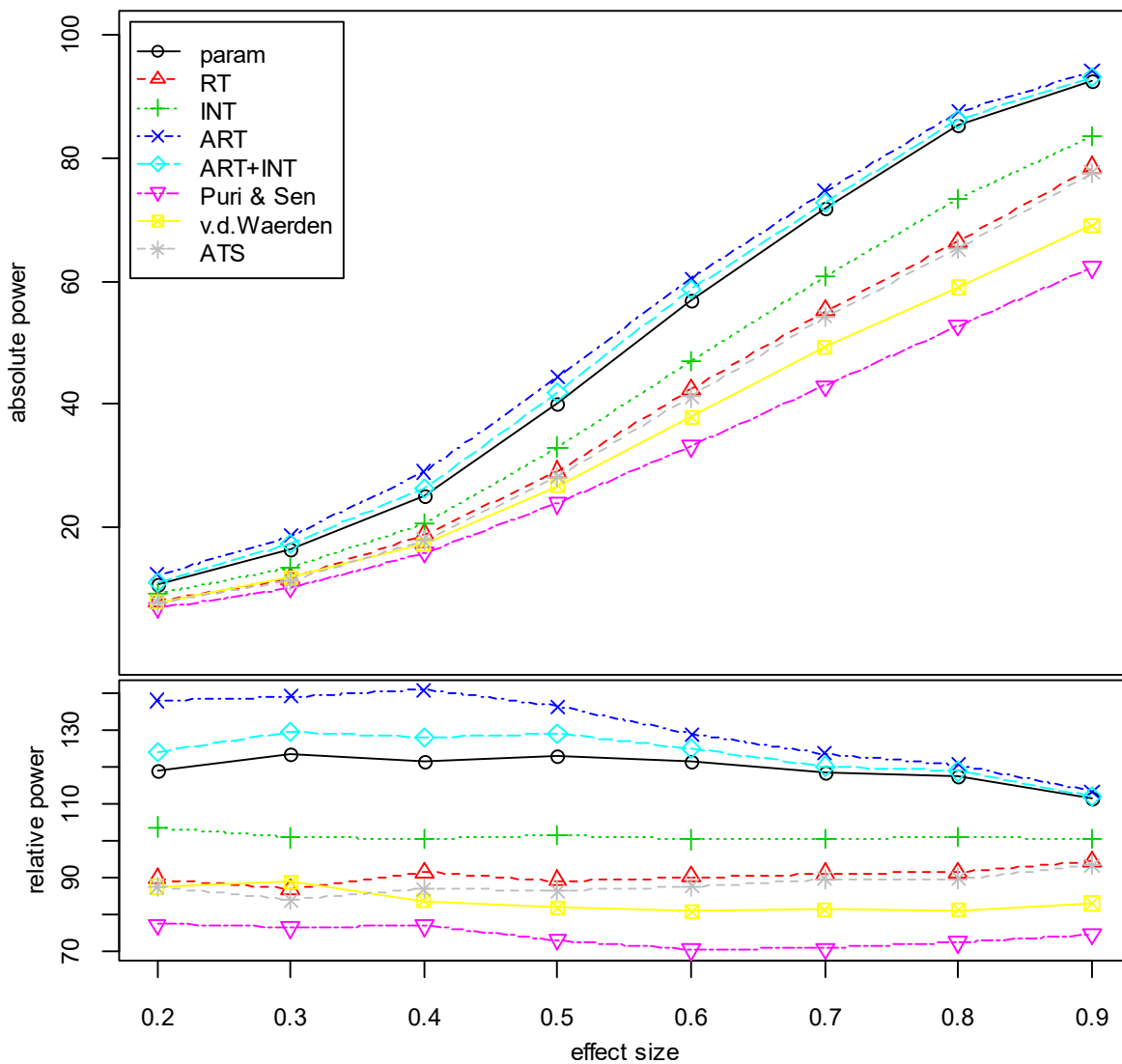
5.9.2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.70	16.2	25.20	39.25	57.00	72.15	85.25	93.35
RT	8.60	13.5	21.60	33.95	46.85	60.80	73.80	83.95
INT	9.95	15.0	23.45	36.45	52.10	66.55	78.95	88.15
ART	11.95	18.1	29.45	44.85	60.90	75.70	88.25	94.65
ART+INT	11.20	17.5	27.20	42.55	58.70	74.10	87.20	94.00
Puri & Sen	7.55	11.4	17.25	26.50	36.35	48.65	58.40	66.40
v.d.Waerden	8.60	12.3	19.00	29.80	41.55	53.40	64.15	72.65
ATS	8.05	12.6	20.60	32.20	45.60	59.80	72.65	82.50



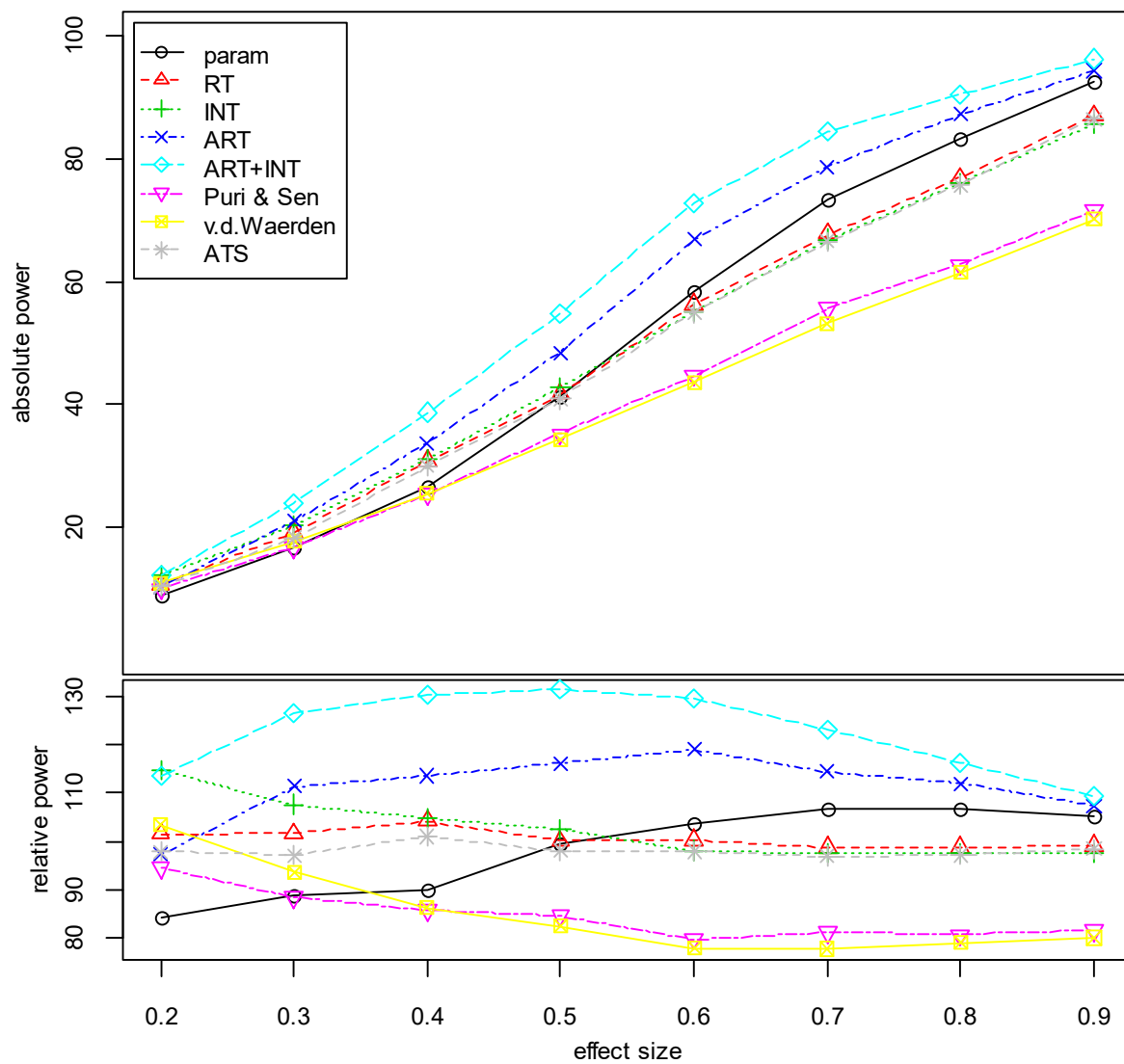
5.9.3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	10.65	16.50	25.00	40.00	57.00	71.75	85.35	92.65
RT	8.05	11.65	18.85	29.10	42.35	55.20	66.40	78.50
INT	9.30	13.50	20.70	33.05	47.05	60.75	73.30	83.45
ART	12.35	18.60	29.00	44.35	60.35	74.70	87.50	94.10
ART+INT	11.10	17.30	26.40	41.95	58.60	72.70	86.15	93.10
Puri & Sen	6.95	10.25	15.90	23.90	33.15	42.95	52.75	62.20
v.d.Waerden	7.85	11.90	17.30	26.70	37.95	49.35	58.95	69.10
ATS	7.85	11.25	17.95	28.20	41.15	54.30	65.20	77.65



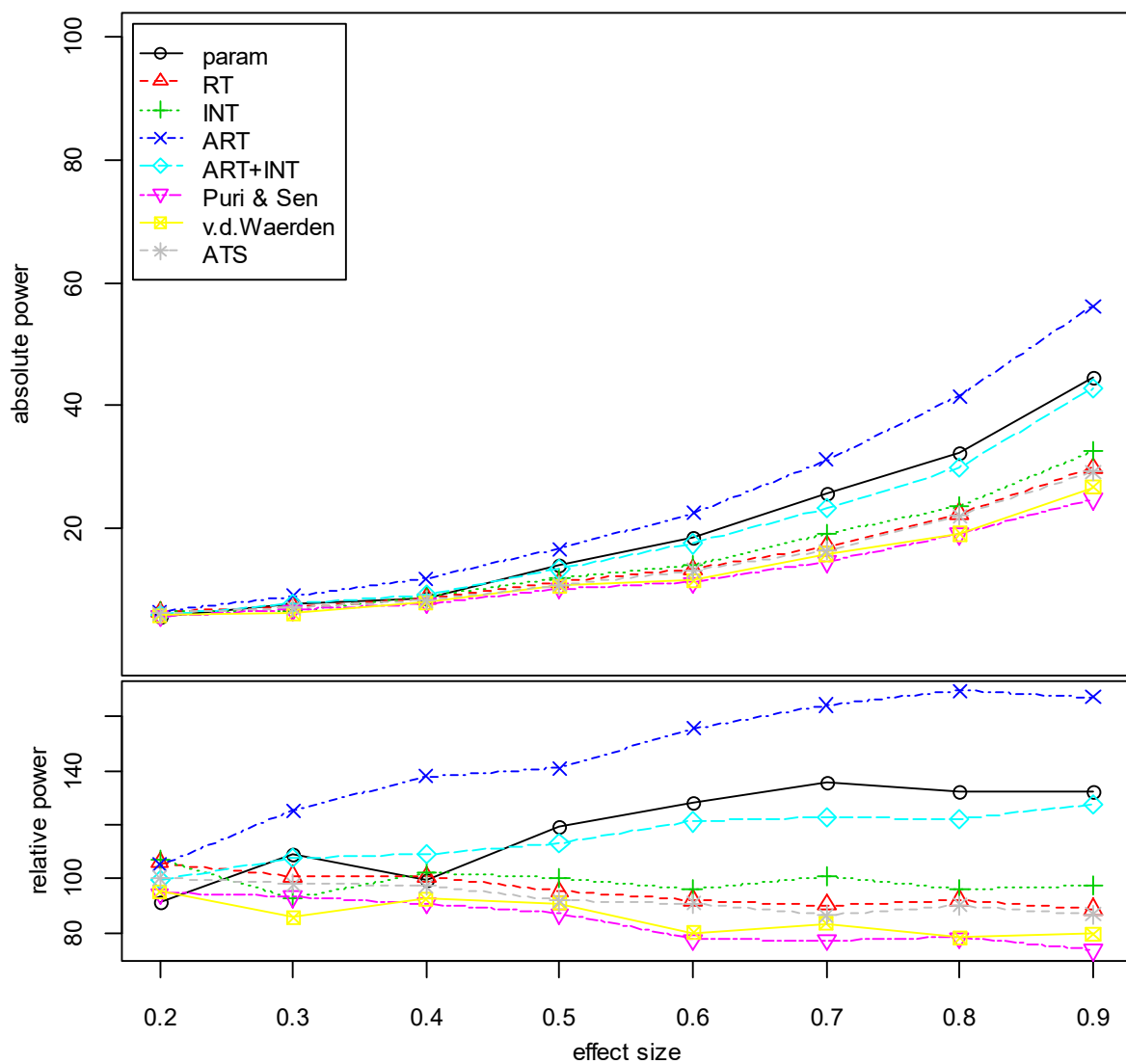
5.9.4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.95	16.75	26.70	41.40	58.25	73.30	83.10	92.40
RT	10.80	19.20	30.90	41.70	56.25	67.80	76.90	87.05
INT	12.20	20.35	31.10	42.75	55.05	66.90	76.00	85.60
ART	10.35	21.05	33.70	48.45	66.85	78.60	87.25	94.35
ART+INT	12.10	23.95	38.75	54.80	72.80	84.55	90.55	96.25
Puri & Sen	10.05	16.70	25.40	35.20	44.70	55.60	62.75	71.60
v.d.Waerden	11.00	17.70	25.55	34.30	43.65	53.25	61.50	70.20
ATS	10.40	18.35	29.95	40.85	54.95	66.55	75.70	86.45



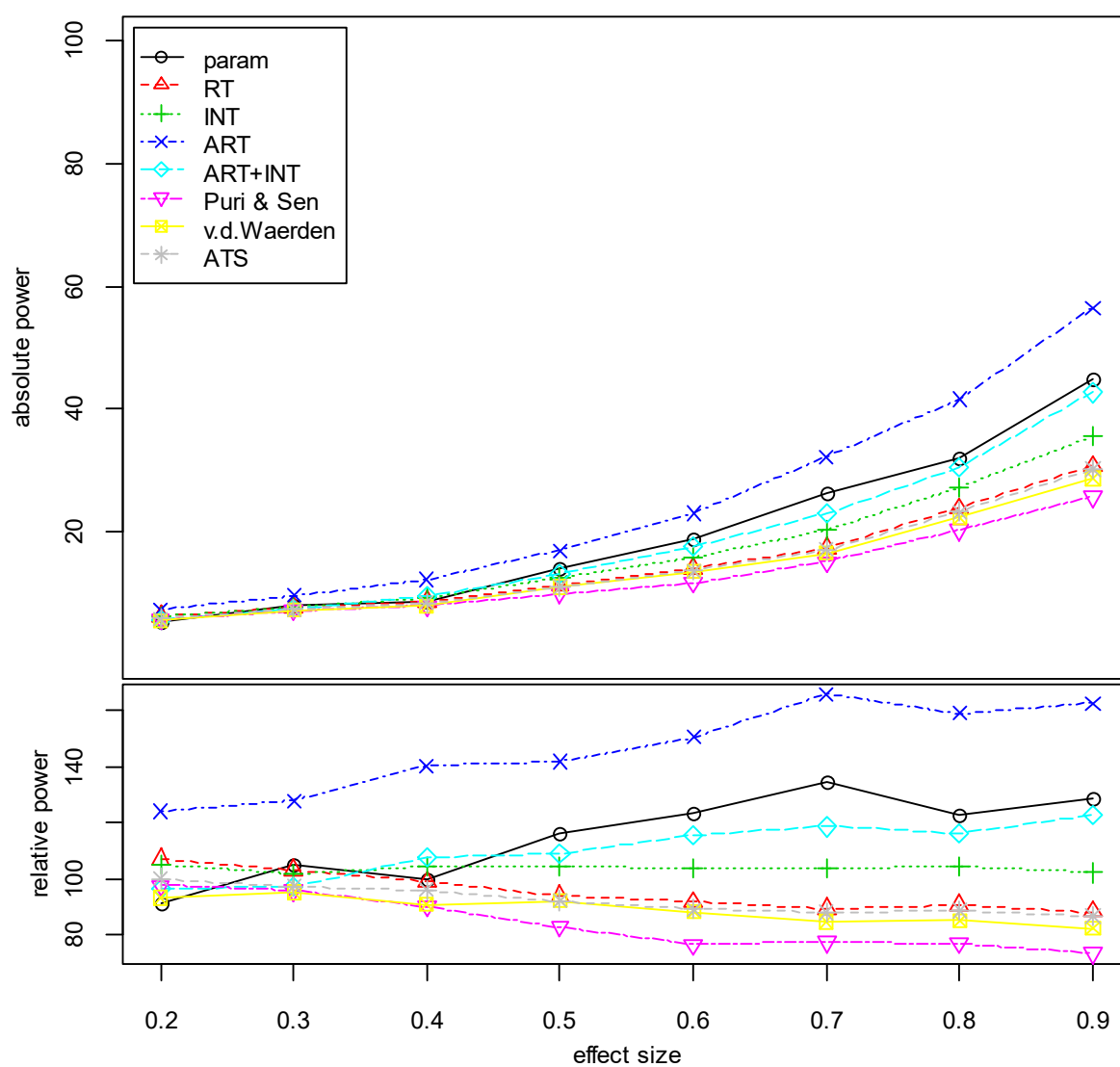
5.9.5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	5.55	7.85	8.55	14.05	18.55	25.75	32.30	44.55
RT	6.45	7.25	8.65	11.20	13.30	17.15	22.50	29.80
INT	6.50	6.65	8.80	11.80	13.90	19.15	23.50	32.70
ART	6.40	9.00	11.85	16.60	22.50	31.20	41.45	56.20
ART+INT	6.05	7.75	9.35	13.30	17.50	23.25	29.80	42.85
Puri & Sen	5.75	6.70	7.80	10.25	11.20	14.65	19.10	24.75
v.d.Waerden	5.80	6.15	7.95	10.70	11.55	15.85	19.10	26.75
ATS	6.10	7.05	8.35	10.80	13.15	16.40	22.05	29.20



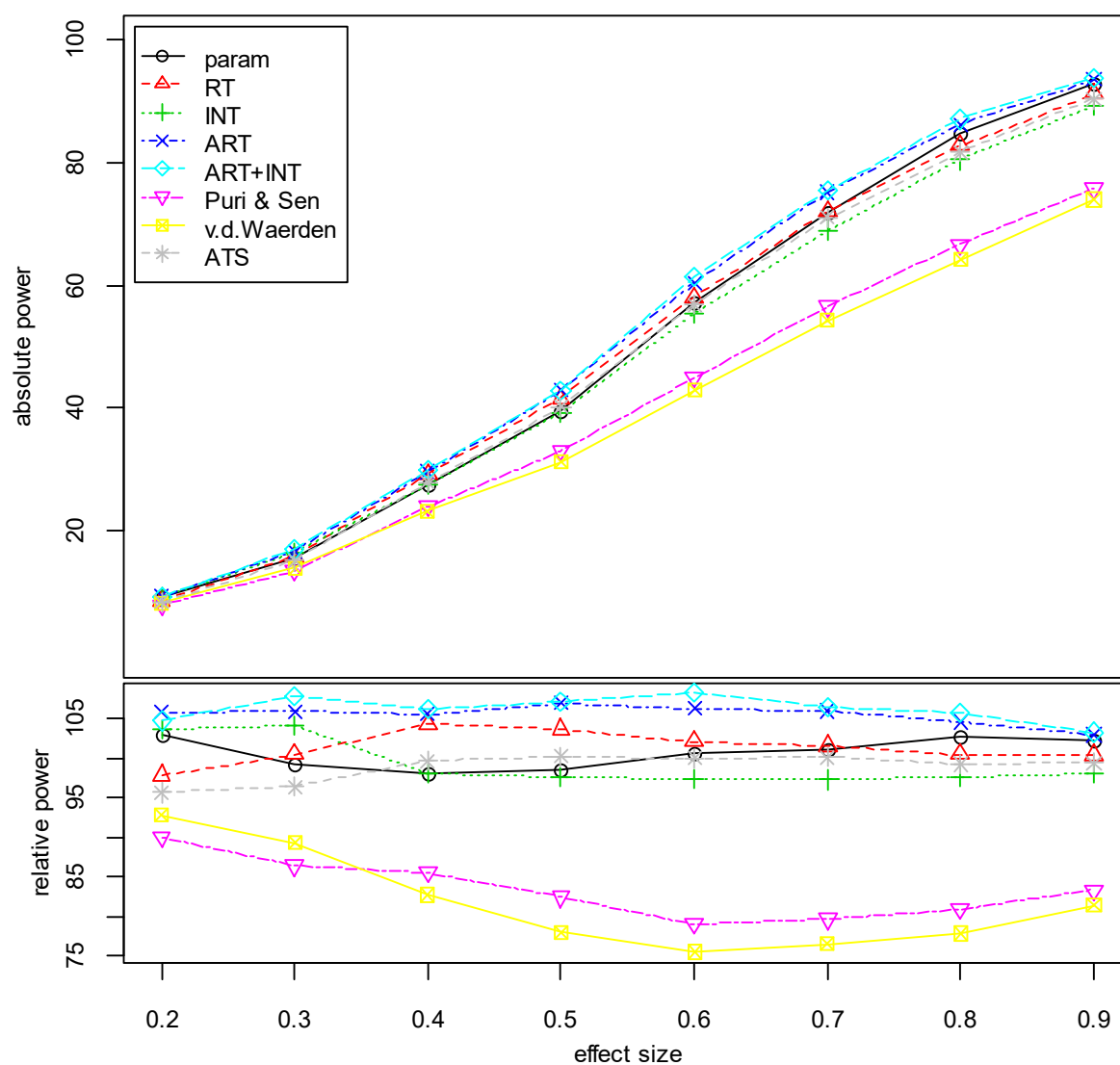
5.9.6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	5.40	7.95	8.75	13.90	18.85	26.20	32.15	44.80
RT	6.30	7.80	8.65	11.25	14.05	17.40	23.80	30.75
INT	6.20	7.70	9.15	12.50	15.85	20.20	27.30	35.55
ART	7.30	9.65	12.25	16.95	23.00	32.20	41.60	56.50
ART+INT	5.70	7.35	9.40	13.05	17.65	23.05	30.45	42.65
Puri & Sen	5.75	7.25	7.90	9.95	11.75	15.10	20.25	25.65
v.d.Waerden	5.50	7.20	7.95	11.05	13.50	16.50	22.35	28.70
ATS	5.90	7.35	8.40	11.05	13.65	17.15	23.25	30.20



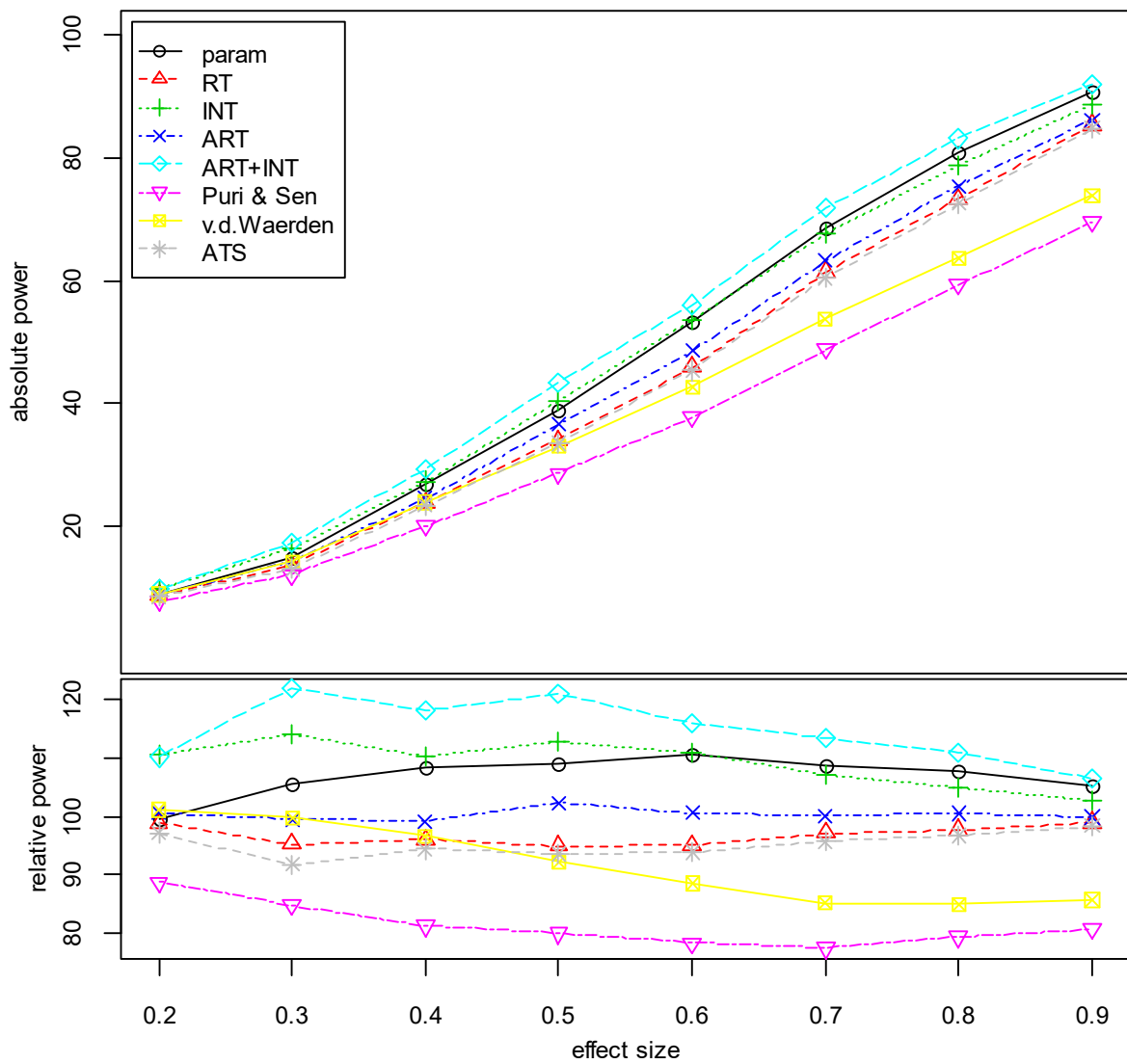
5.9.7 lognormal distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.10	15.55	27.50	39.50	57.10	71.75	84.60	92.75
RT	8.65	15.75	29.25	41.55	58.00	72.05	82.75	91.15
INT	9.15	16.30	27.50	39.10	55.35	69.00	80.40	89.15
ART	9.35	16.60	29.60	42.85	60.35	75.15	86.10	93.50
ART+INT	9.25	16.90	29.80	42.90	61.45	75.45	87.00	93.80
Puri & Sen	7.95	13.55	24.00	33.05	44.95	56.55	66.65	75.70
v.d.Waerden	8.20	14.00	23.20	31.25	42.90	54.30	64.10	73.95
ATS	8.45	15.10	27.95	40.15	56.80	71.00	81.70	90.30



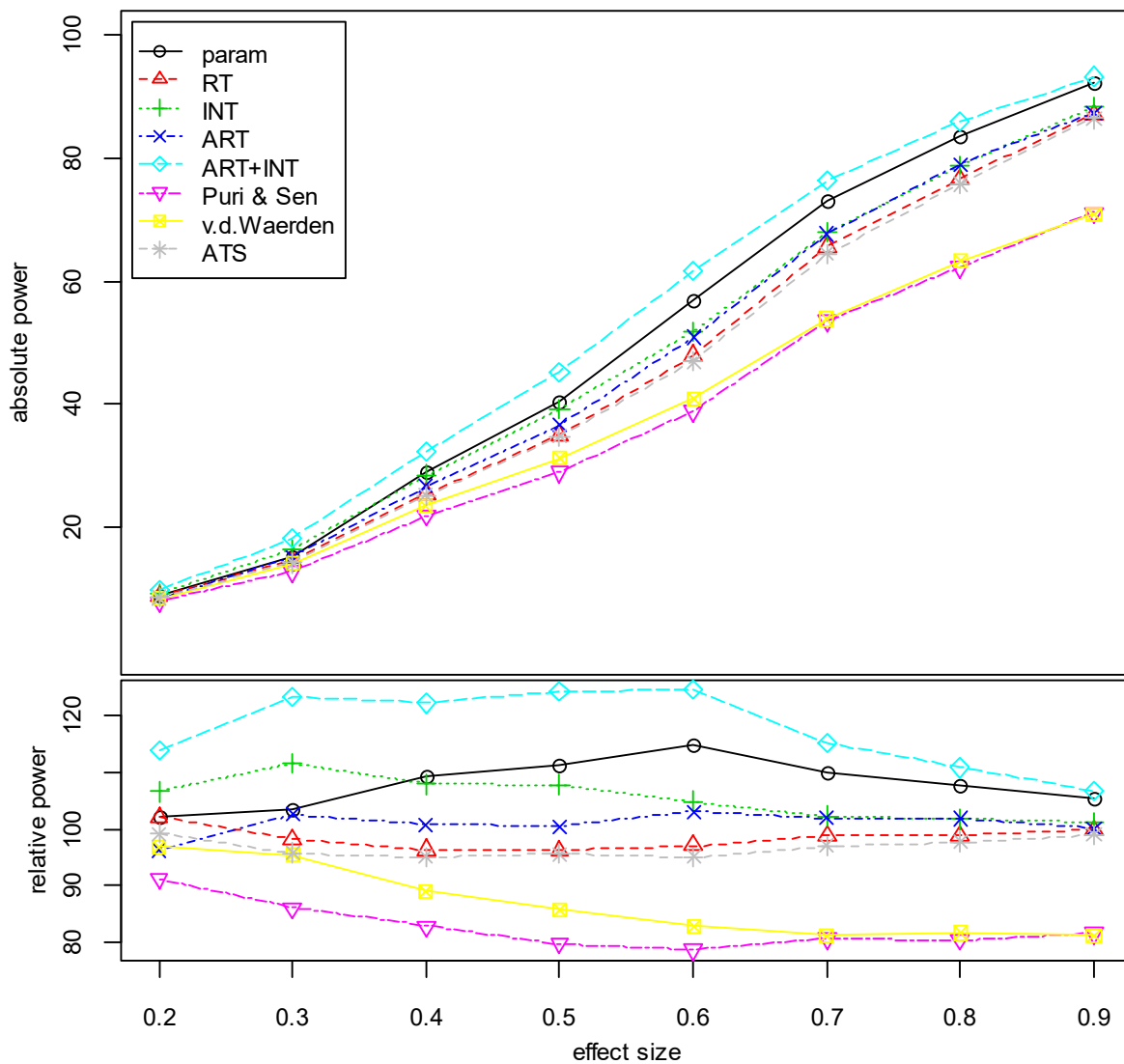
5.9.9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.80	15.05	26.85	39.05	53.40	68.65	80.70	90.80
RT	8.75	13.60	23.80	34.00	45.90	61.40	73.25	85.40
INT	9.80	16.30	27.35	40.40	53.65	67.65	78.70	88.60
ART	8.90	14.20	24.60	36.65	48.60	63.20	75.35	86.15
ART+INT	9.75	17.40	29.30	43.30	56.10	71.75	83.10	91.95
Puri & Sen	7.85	12.10	20.15	28.60	37.80	48.90	59.40	69.55
v.d.Waerden	8.95	14.25	23.95	33.00	42.75	53.75	63.65	73.90
ATS	8.60	13.10	23.40	33.50	45.35	60.45	72.50	84.85



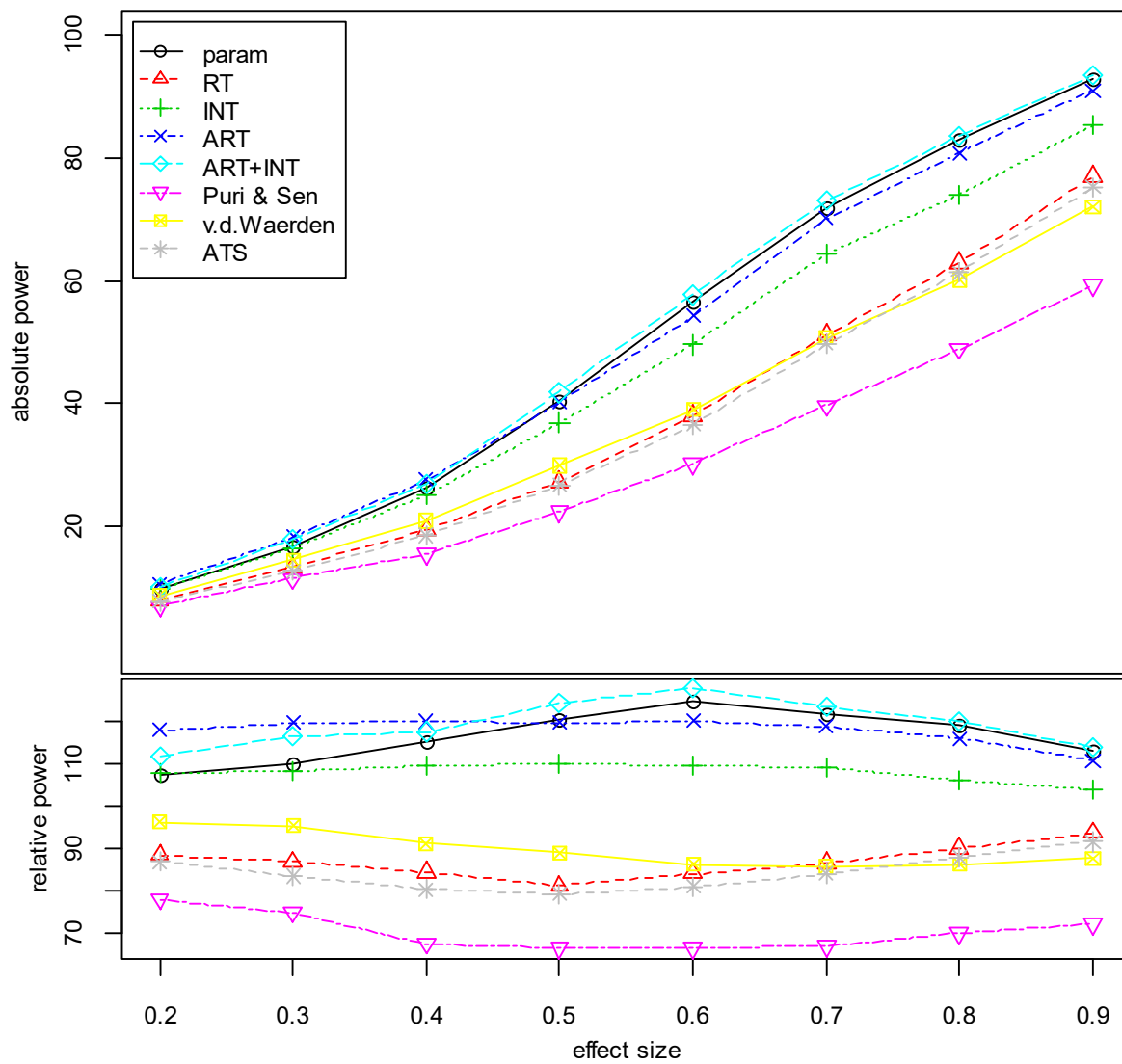
5.9.10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.90	15.35	28.90	40.50	56.85	73.10	83.55	92.10
RT	8.90	14.55	25.50	35.00	47.95	65.55	76.55	87.05
INT	9.30	16.55	28.55	39.25	51.85	67.90	78.80	88.30
ART	8.40	15.20	26.65	36.55	50.90	67.65	78.90	87.35
ART+INT	9.95	18.30	32.35	45.25	61.55	76.45	85.90	93.25
Puri & Sen	7.95	12.75	21.90	29.00	38.85	53.50	62.25	71.15
v.d.Waerden	8.45	14.15	23.55	31.20	40.90	53.90	63.25	70.85
ATS	8.65	14.20	25.15	34.75	46.95	64.40	75.75	86.40



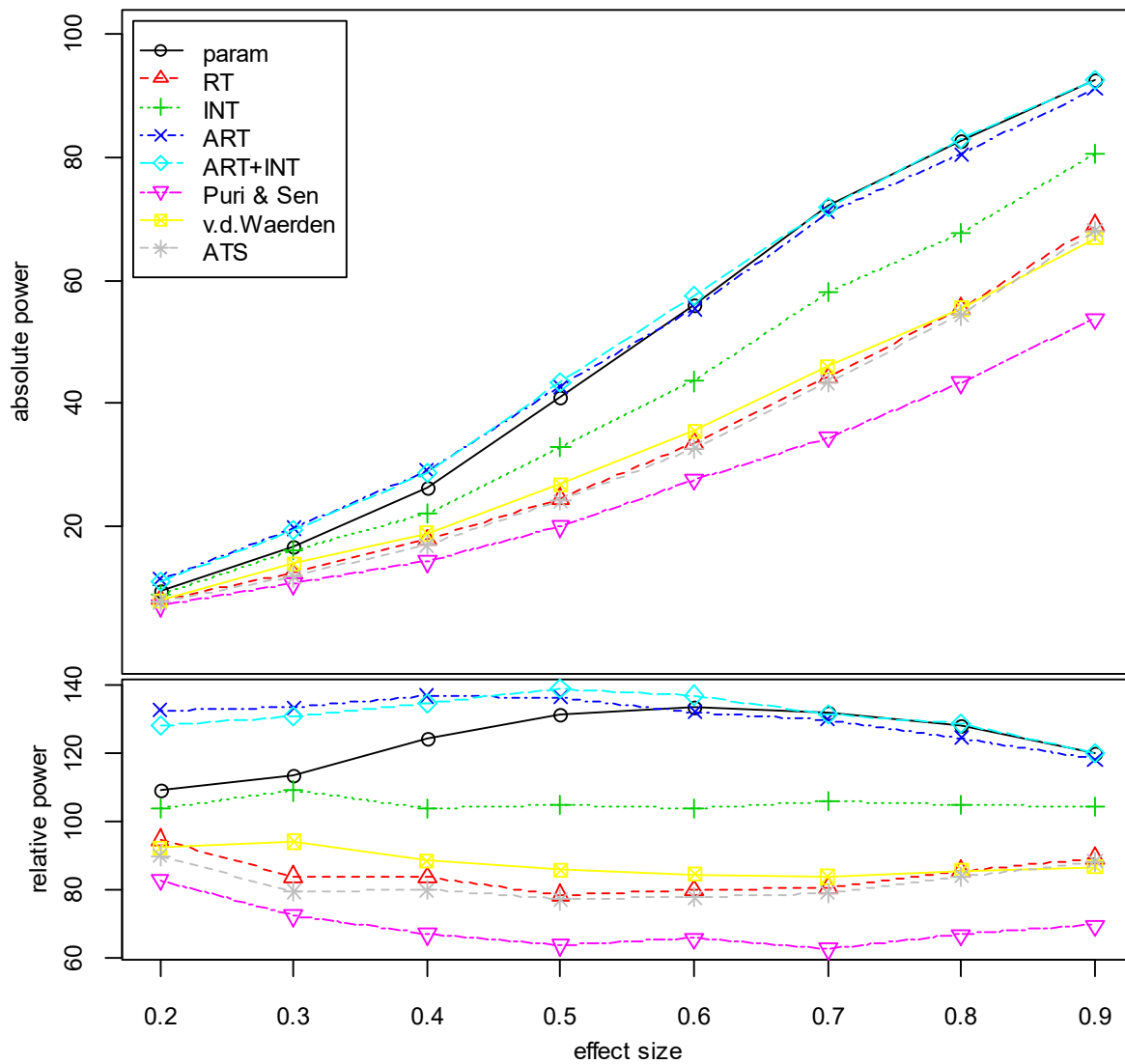
5.9.11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.70	16.80	26.45	40.35	56.45	71.95	83.05	92.80
RT	8.00	13.30	19.40	27.30	38.05	51.25	62.85	76.95
INT	9.75	16.55	25.15	36.95	49.55	64.45	73.95	85.40
ART	10.65	18.30	27.55	40.15	54.25	70.20	80.80	90.90
ART+INT	10.10	17.85	27.00	41.75	57.65	73.00	83.50	93.35
Puri & Sen	7.05	11.50	15.55	22.40	30.15	39.70	48.85	59.30
v.d.Waerden	8.70	14.60	20.95	29.90	39.05	50.70	60.20	72.05
ATS	7.85	12.80	18.50	26.65	36.65	49.80	61.30	75.20



5.9.12 left skewed distribution - unequal variances (on A and B)

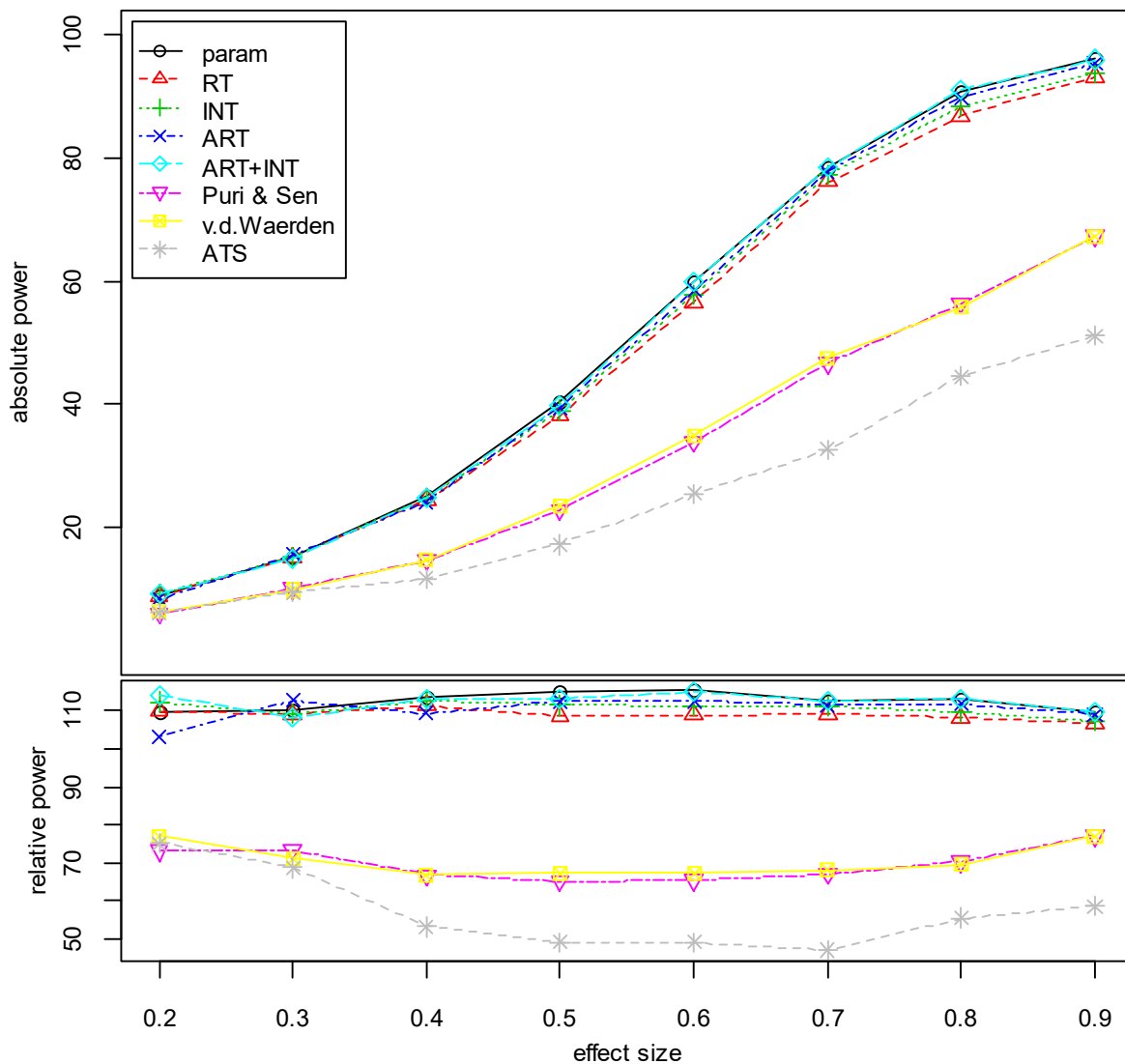
method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.40	16.80	26.45	41.00	55.95	72.10	82.60	92.55
RT	8.15	12.45	17.80	24.60	33.50	44.25	55.35	68.85
INT	8.95	16.15	22.05	32.80	43.55	58.00	67.65	80.55
ART	11.40	19.75	29.05	42.65	55.35	71.10	80.40	91.10
ART+INT	11.00	19.35	28.60	43.35	57.40	71.90	83.00	92.50
Puri & Sen	7.15	10.75	14.30	20.00	27.65	34.45	43.35	53.75
v.d.Waerden	7.95	13.95	18.85	26.85	35.50	45.95	55.35	66.85
ATS	7.75	11.80	17.00	24.15	32.65	43.40	54.35	68.05



5. 10. Interaction AB - A and B significant (unequal $n_i \sim 5$ / # levels = 4×5)

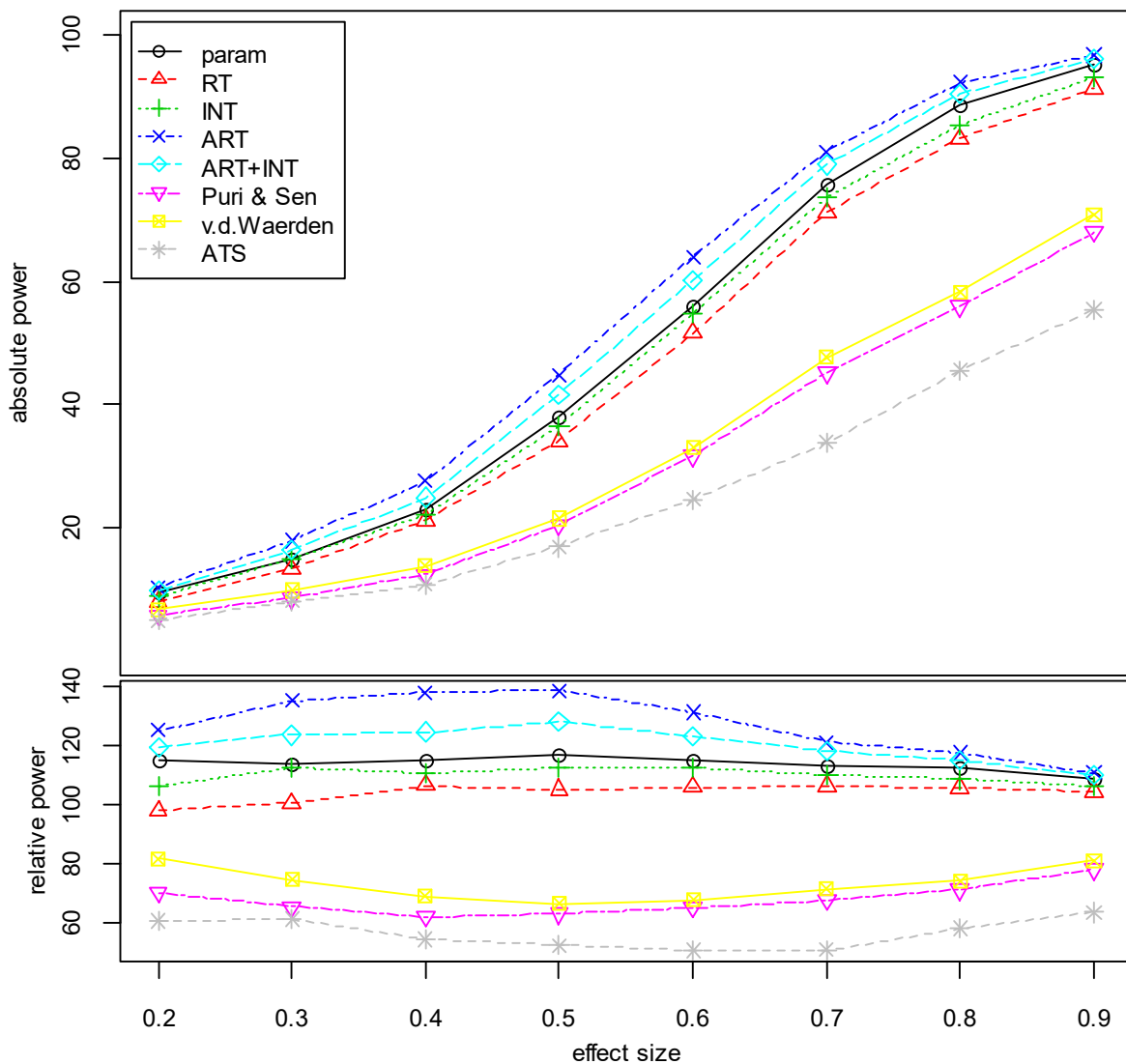
5. 10. 1 normal distribution - equal variances

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.00	15.25	25.00	40.40	59.90	78.40	90.85	96.05
RT	9.00	15.10	24.55	38.15	56.55	76.15	86.80	93.15
INT	9.20	15.10	24.80	39.05	57.75	77.30	88.25	93.80
ART	8.45	15.60	24.10	39.40	58.50	77.70	89.75	95.35
ART+INT	9.35	15.00	24.90	39.70	59.80	78.45	90.95	95.95
Puri & Sen	6.00	10.15	14.70	22.85	33.95	46.70	56.40	67.30
v.d.Waerden	6.30	9.85	14.70	23.55	34.90	47.45	55.80	67.30
ATS	6.15	9.50	11.70	17.20	25.50	32.70	44.55	51.10



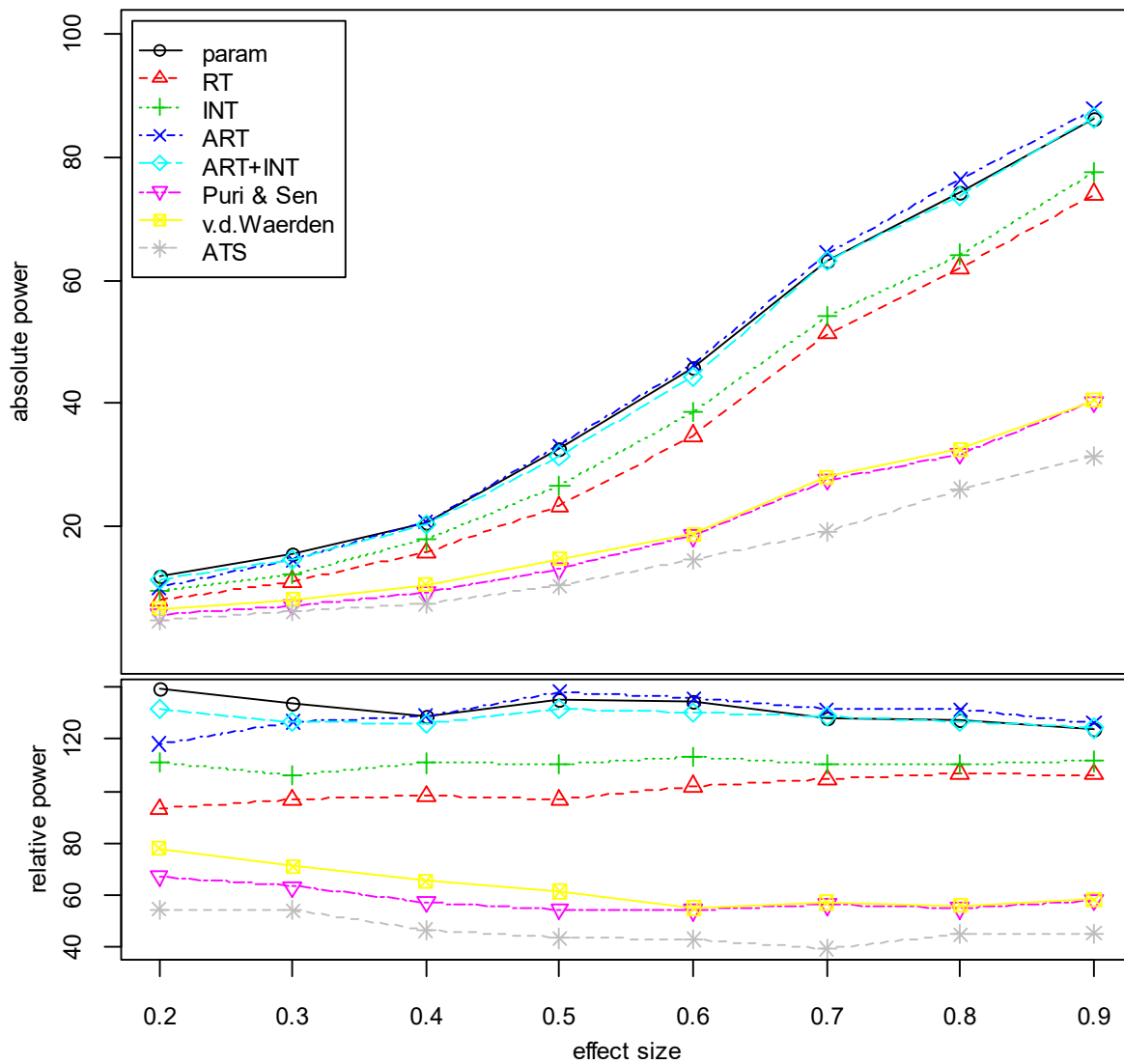
5. 10. 2 normal distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.50	15.05	23.00	37.90	56.05	75.65	88.60	95.20
RT	8.10	13.30	21.30	34.00	51.60	71.15	83.10	91.30
INT	8.80	14.90	22.15	36.40	54.90	73.60	85.25	93.05
ART	10.35	17.90	27.60	44.85	64.00	81.00	92.35	96.75
ART+INT	9.85	16.35	24.95	41.50	60.05	78.90	90.55	96.15
Puri & Sen	5.80	8.65	12.40	20.40	31.70	45.20	56.00	68.10
v.d.Waerden	6.75	9.85	13.80	21.50	32.95	47.70	58.30	70.85
ATS	5.00	8.10	10.85	16.90	24.60	33.90	45.60	55.35



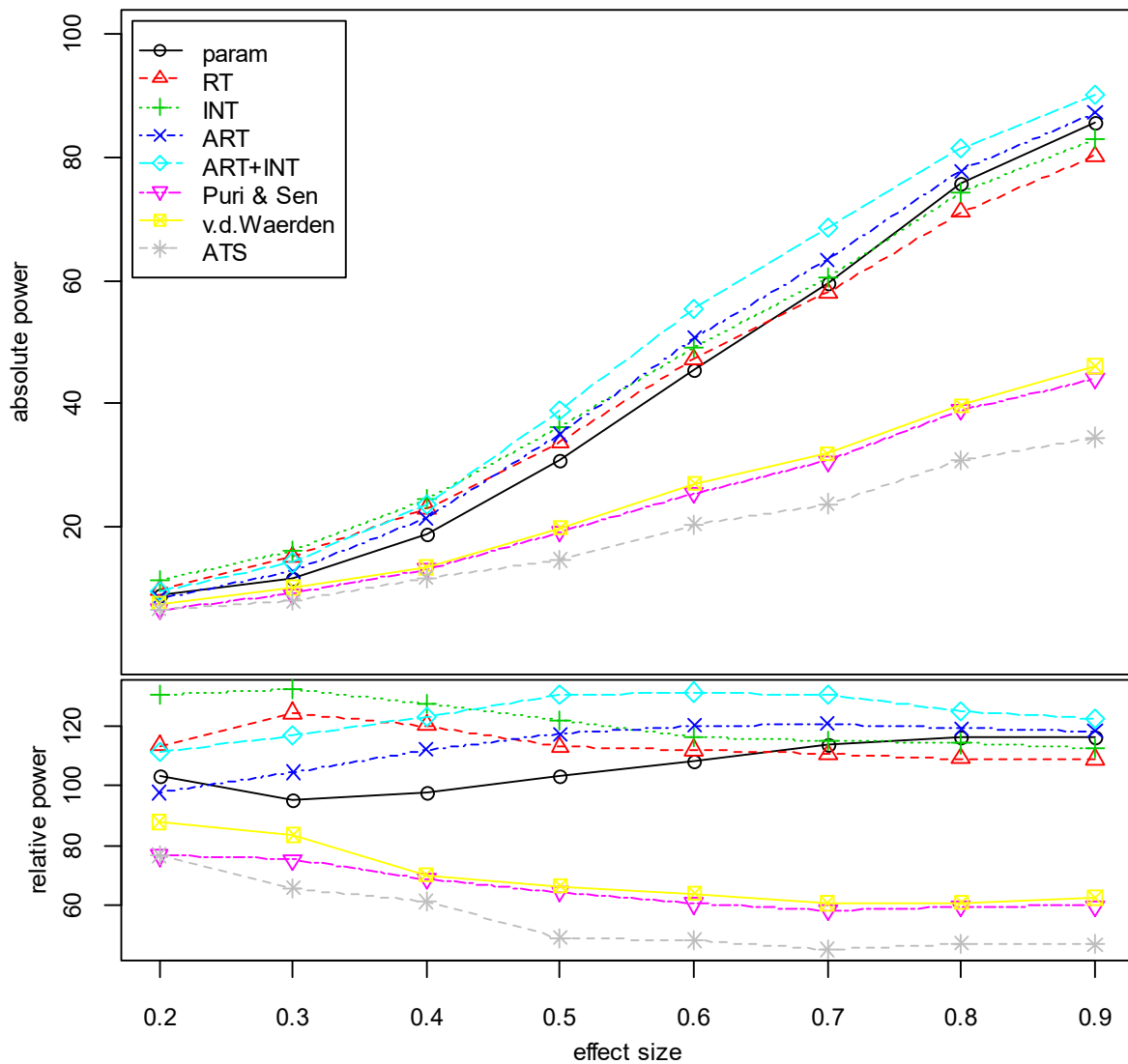
5. 10. 3 normal distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.90	15.40	20.70	32.50	45.80	63.10	74.15	86.25
RT	7.95	11.10	15.75	23.20	34.75	51.30	62.05	74.00
INT	9.50	12.15	17.80	26.50	38.65	54.10	64.20	77.50
ART	10.10	14.55	20.70	33.15	46.30	64.50	76.35	87.85
ART+INT	11.25	14.55	20.25	31.55	44.40	63.25	73.70	86.40
Puri & Sen	5.75	7.25	9.20	13.05	18.50	27.65	31.80	40.30
v.d.Waerden	6.65	8.15	10.50	14.70	18.75	28.00	32.50	40.50
ATS	4.65	6.20	7.45	10.35	14.60	19.25	26.00	31.35



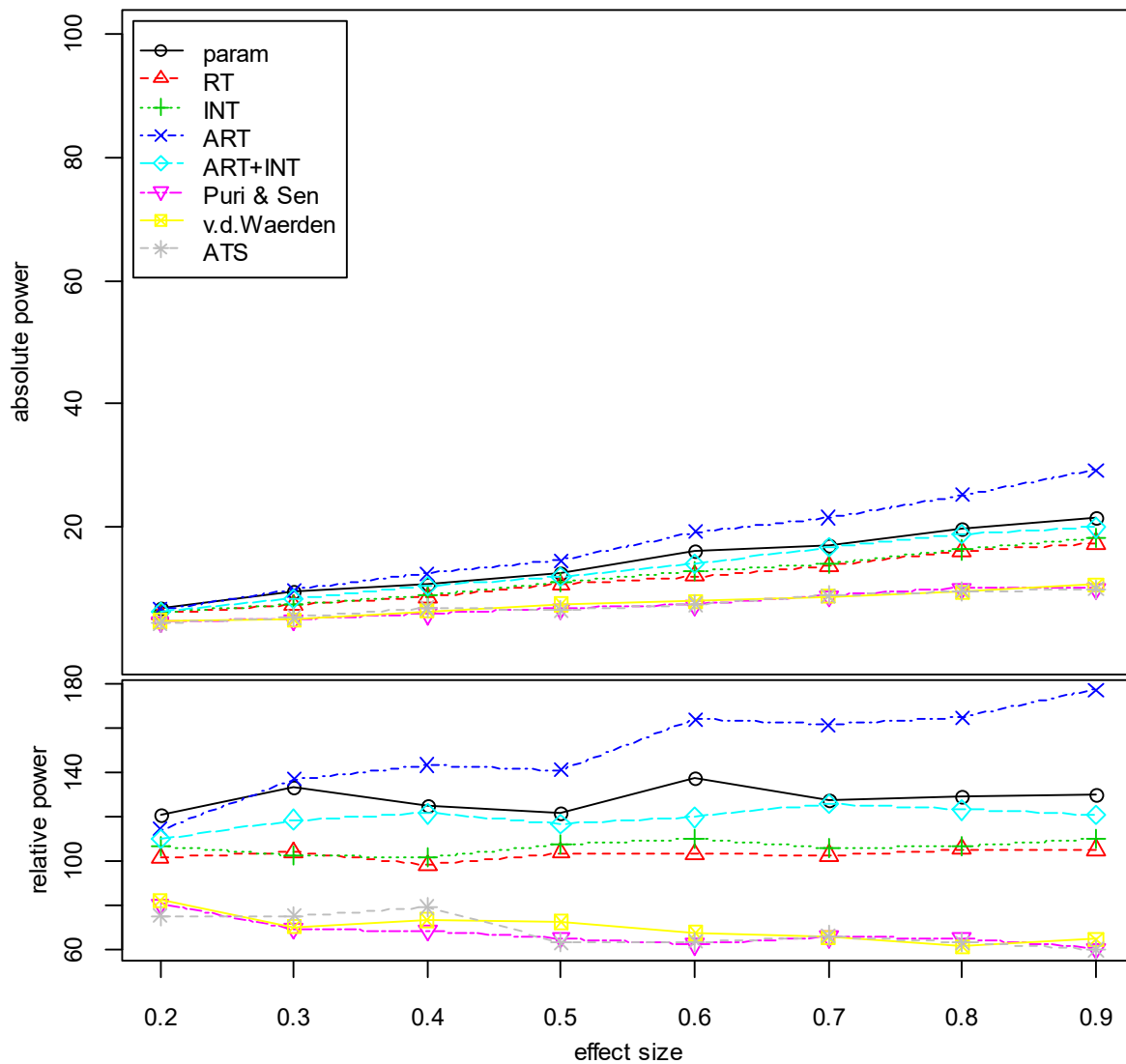
5. 10. 4 right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.90	11.60	18.70	30.85	45.50	59.70	75.75	85.65
RT	9.75	15.10	23.00	33.70	47.20	58.00	71.05	80.15
INT	11.20	16.05	24.40	36.35	49.00	60.45	74.35	82.90
ART	8.40	12.70	21.45	35.00	50.65	63.40	77.70	87.20
ART+INT	9.55	14.20	23.55	38.85	55.35	68.45	81.35	90.15
Puri & Sen	6.60	9.15	13.20	19.25	25.55	30.70	38.95	44.10
v.d.Waerden	7.55	10.15	13.45	19.80	27.00	31.90	39.65	46.10
ATS	6.60	8.00	11.75	14.65	20.40	23.75	30.80	34.55



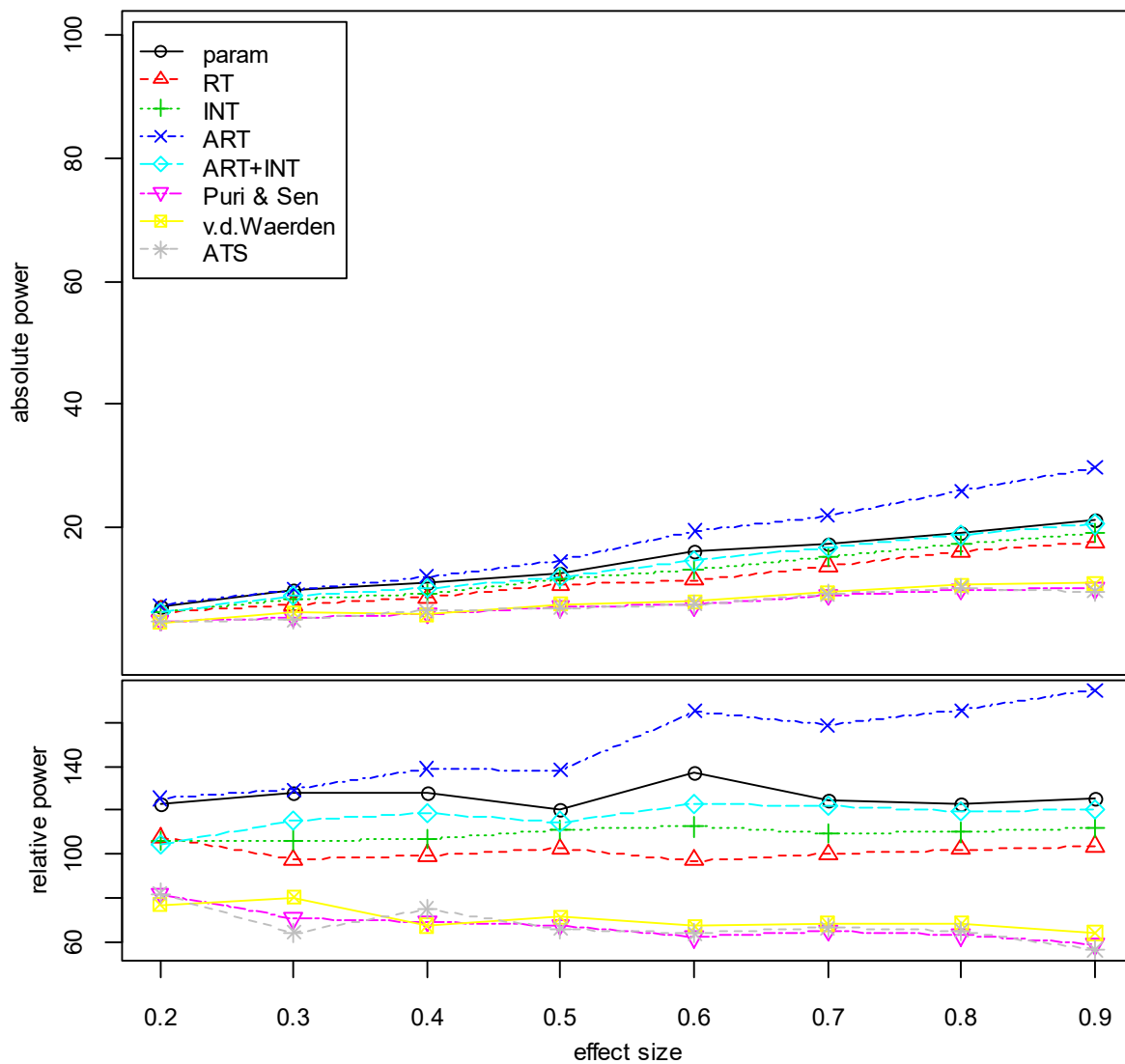
5. 10. 5 exponential distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	6.95	9.50	10.85	12.50	16.10	17.00	19.80	21.45
RT	5.85	7.40	8.50	10.65	12.05	13.70	16.10	17.35
INT	6.15	7.30	8.80	11.05	12.90	14.15	16.30	18.15
ART	6.60	9.75	12.40	14.50	19.20	21.55	25.20	29.25
ART+INT	6.35	8.45	10.50	12.00	14.00	16.80	18.80	19.90
Puri & Sen	4.65	4.95	5.95	6.70	7.30	8.80	10.00	10.00
v.d.Waerden	4.75	5.00	6.35	7.45	7.90	8.75	9.40	10.70
ATS	4.35	5.35	6.85	6.50	7.45	8.85	9.65	9.90



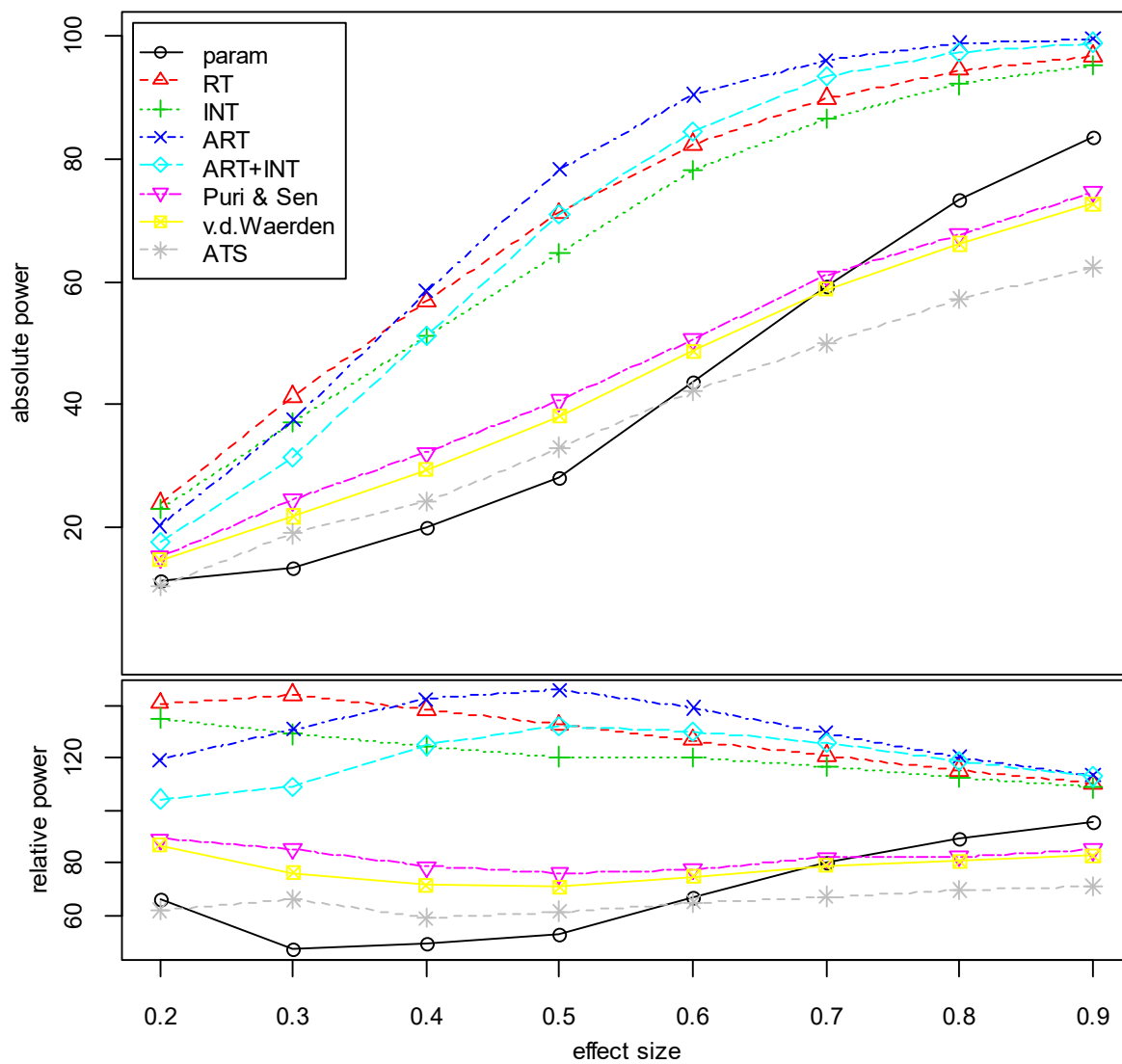
5. 10. 6 exponential distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	7.25	9.85	11.05	12.65	16.20	17.20	19.2	21.35
RT	6.35	7.50	8.60	10.75	11.45	13.80	16.0	17.70
INT	6.25	8.20	9.25	11.65	13.25	15.15	17.2	19.05
ART	7.40	9.95	12.00	14.50	19.45	21.90	25.9	29.75
ART+INT	6.15	8.90	10.25	12.05	14.50	16.85	18.7	20.50
Puri & Sen	4.85	5.45	6.00	7.10	7.35	9.00	9.9	10.10
v.d.Waerden	4.55	6.20	5.85	7.50	7.95	9.45	10.7	10.95
ATS	4.85	4.95	6.50	6.95	7.55	9.20	10.2	9.65



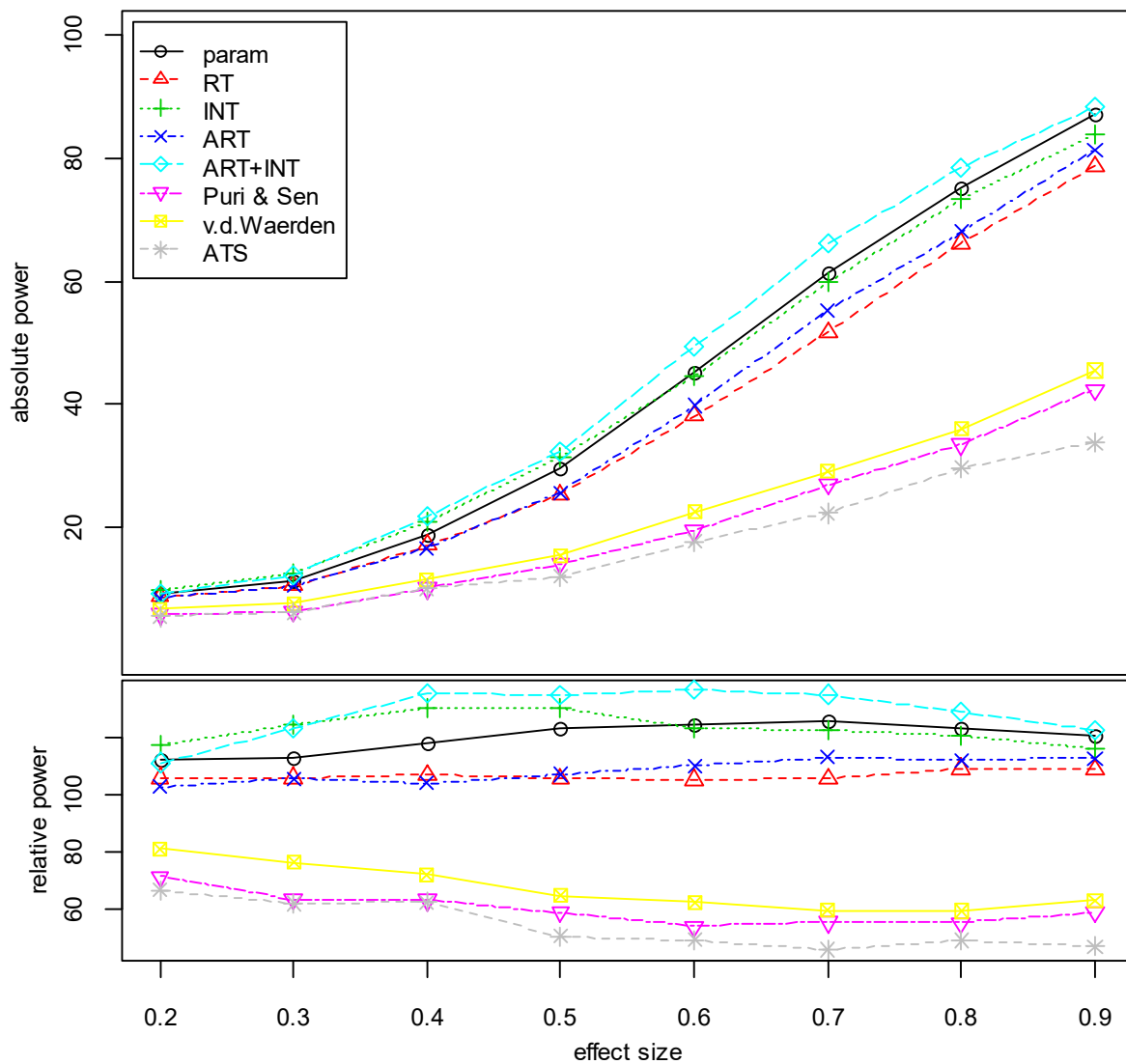
5. 10. 7 lognormal distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	11.25	13.55	20.15	28.20	43.65	59.30	73.30	83.65
RT	23.95	41.35	56.80	71.20	82.35	89.85	94.45	96.70
INT	23.00	37.00	51.15	64.65	78.05	86.45	92.10	95.25
ART	20.30	37.55	58.45	78.25	90.40	96.05	98.80	99.50
ART+INT	17.75	31.30	51.20	70.90	84.50	93.50	97.30	98.95
Puri & Sen	15.15	24.45	32.20	40.70	50.50	60.95	67.65	74.65
v.d.Waerden	14.75	21.85	29.35	38.10	48.70	58.75	66.15	72.70
ATS	10.55	19.00	24.25	33.05	42.25	49.90	57.15	62.40



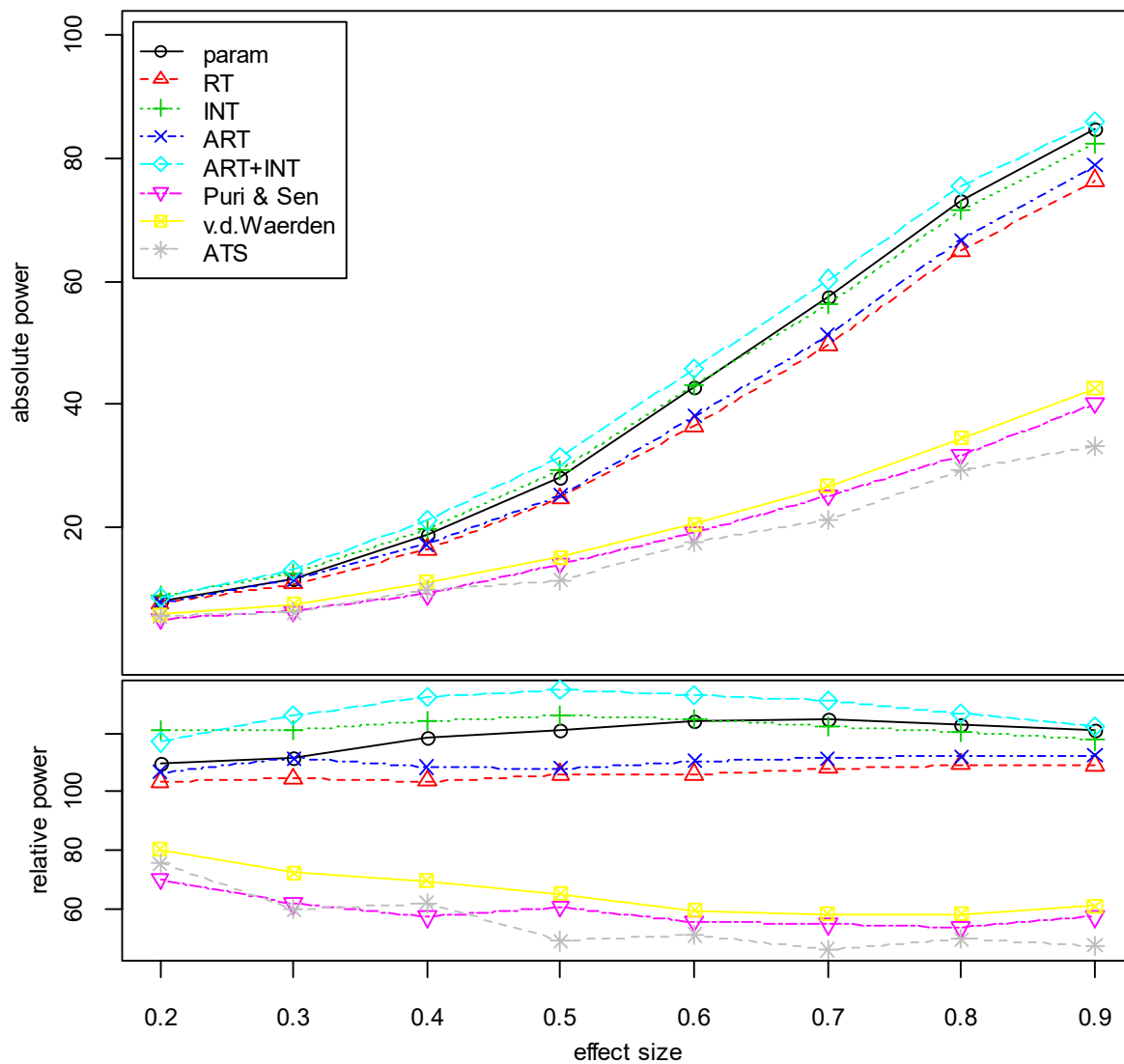
5. 10. 8 uniform distribution - continuous

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.30	11.25	18.90	29.60	45.05	61.50	75.05	87.15
RT	8.75	10.55	17.15	25.30	38.10	51.65	66.20	78.60
INT	9.70	12.40	20.90	31.30	44.60	59.85	73.25	83.90
ART	8.50	10.50	16.70	25.65	39.80	55.30	68.00	81.35
ART+INT	9.20	12.25	21.75	32.30	49.40	66.05	78.35	88.35
Puri & Sen	5.90	6.30	10.10	14.10	19.45	27.05	33.45	42.40
v.d.Waerden	6.70	7.60	11.55	15.50	22.50	29.05	36.00	45.50
ATS	5.50	6.15	10.00	12.05	17.75	22.30	29.75	33.75



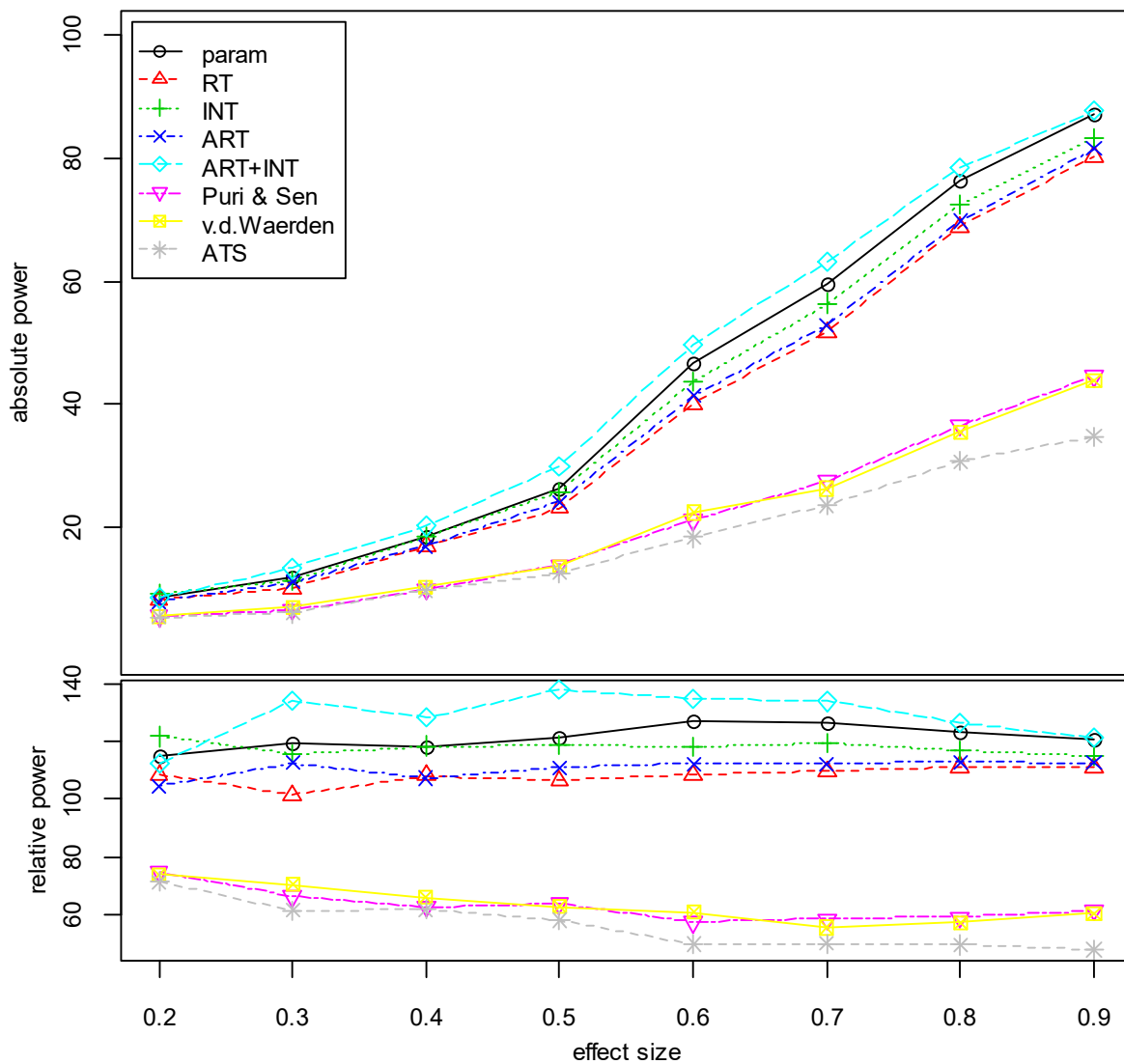
5. 10. 9 uniform distribution - discrete

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.05	11.60	18.85	28.25	42.75	57.45	73.05	84.65
RT	7.60	10.85	16.50	24.75	36.50	49.75	65.05	76.40
INT	8.90	12.55	19.75	29.40	43.00	56.40	71.65	82.40
ART	7.85	11.55	17.25	25.20	38.10	51.30	66.70	78.85
ART+INT	8.60	13.10	21.10	31.45	45.80	60.30	75.45	85.80
Puri & Sen	5.15	6.40	9.10	14.15	19.15	25.20	31.80	40.15
v.d.Waerden	5.90	7.50	11.05	15.20	20.50	26.75	34.55	42.60
ATS	5.55	6.20	9.85	11.40	17.60	21.15	29.45	33.15



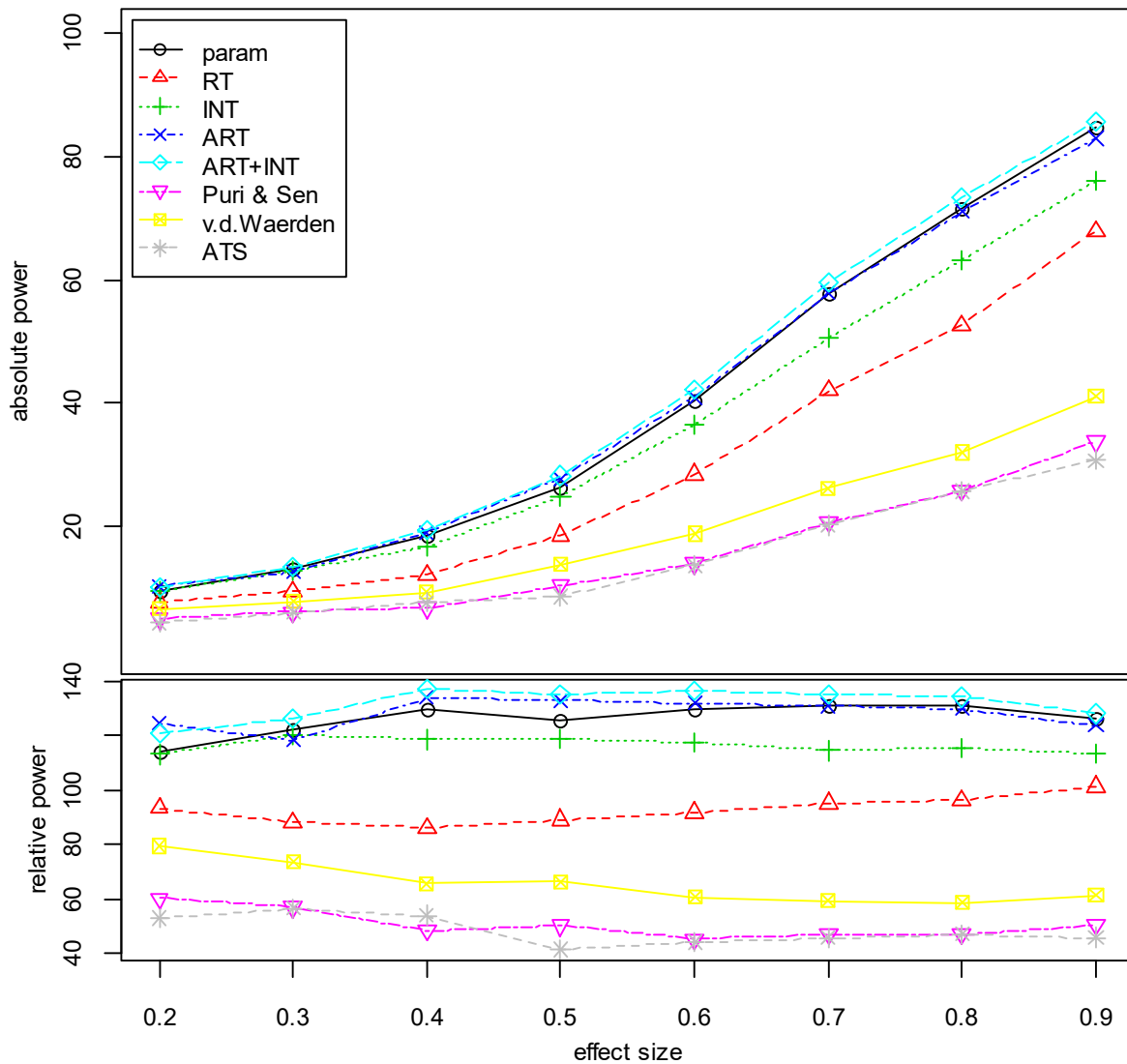
5. 10. 10 left/right skewed distribution

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	8.70	11.85	18.65	26.35	46.75	59.70	76.25	87.15
RT	8.20	10.05	17.05	23.15	39.95	51.75	68.75	80.25
INT	9.20	11.45	18.65	25.75	43.60	56.40	72.35	83.25
ART	7.90	11.15	16.90	24.10	41.35	52.90	69.75	81.50
ART+INT	8.50	13.30	20.20	29.90	49.60	63.10	78.35	87.75
Puri & Sen	5.65	6.60	9.90	13.90	21.20	27.65	36.65	44.55
v.d.Waerden	5.60	7.00	10.40	13.65	22.45	26.30	35.55	43.95
ATS	5.40	6.10	9.75	12.65	18.40	23.65	30.75	34.75



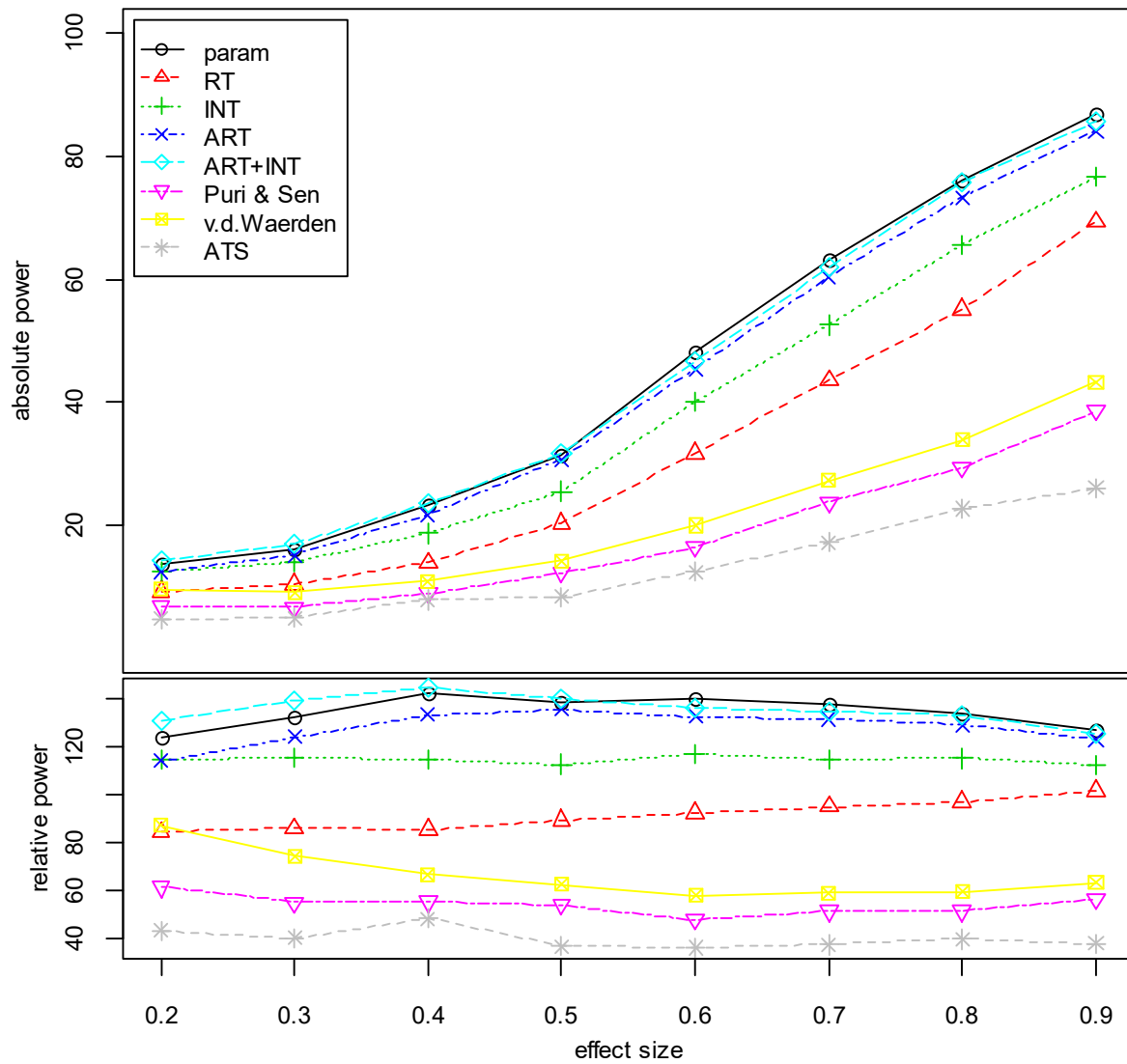
5. 10. 11 left skewed distribution - unequal variances (on B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	9.50	13.05	18.40	26.25	40.25	57.85	71.55	84.75
RT	7.75	9.40	12.20	18.60	28.40	42.00	52.65	67.85
INT	9.40	12.85	16.80	24.85	36.45	50.55	63.10	76.00
ART	10.35	12.65	19.00	27.75	40.90	57.85	71.00	82.95
ART+INT	10.05	13.50	19.40	28.25	42.30	59.60	73.35	85.70
Puri & Sen	5.00	6.10	6.85	10.50	14.00	20.75	25.75	33.75
v.d.Waerden	6.60	7.85	9.30	13.85	18.80	26.25	32.00	41.05
ATS	4.40	6.05	7.65	8.65	13.70	20.20	25.70	30.70



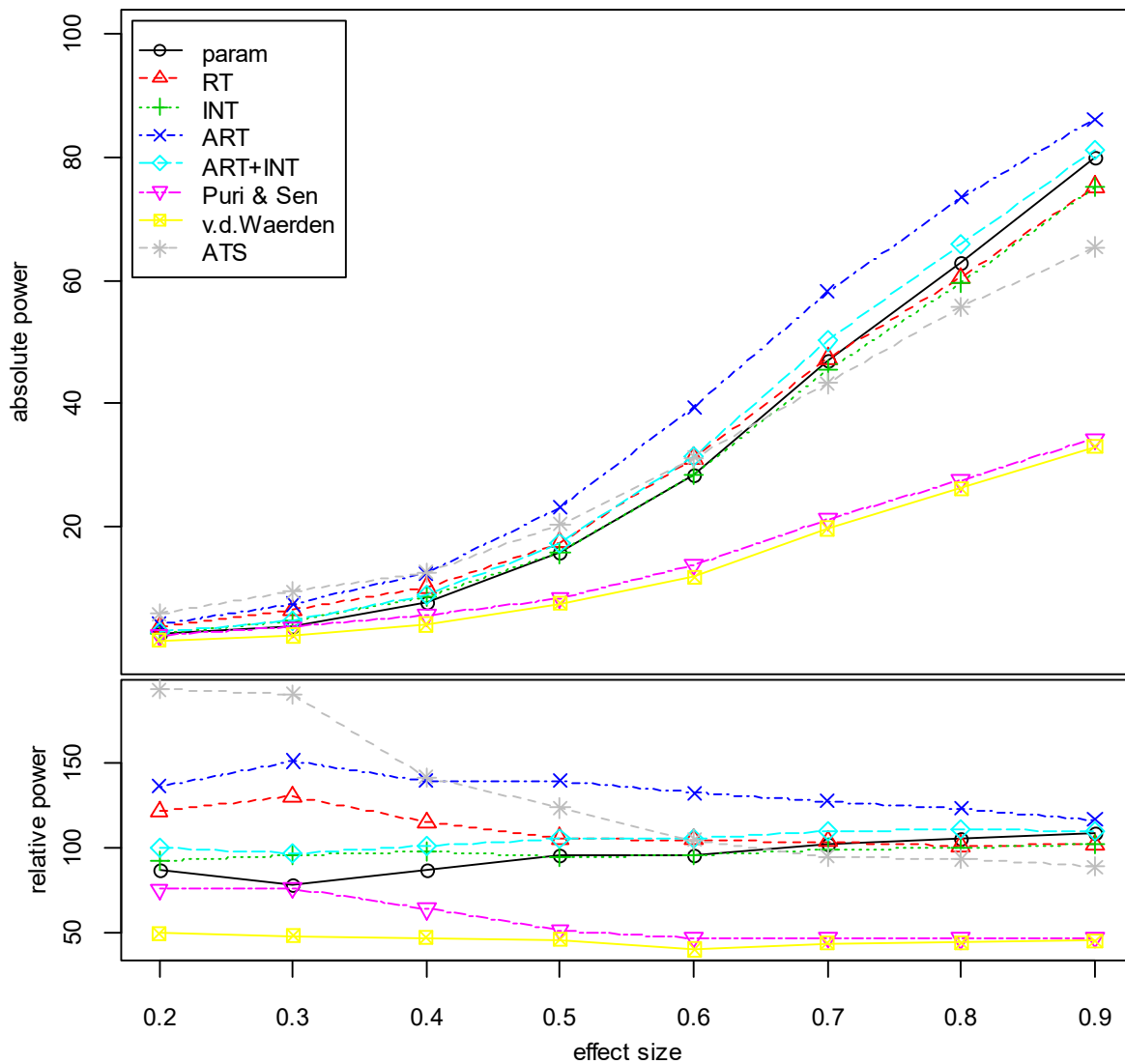
5. 10. 12 left skewed distribution - unequal variances (on A and B)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	13.60	16.15	23.20	31.40	48.05	63.10	76.10	86.75
RT	9.30	10.50	13.95	20.30	31.80	43.65	55.15	69.35
INT	12.65	14.10	18.70	25.55	40.20	52.55	65.45	76.65
ART	12.55	15.15	21.70	30.75	45.45	60.40	73.30	84.05
ART+INT	14.40	16.95	23.50	31.80	46.65	61.85	75.85	85.75
Puri & Sen	6.80	6.75	9.05	12.30	16.50	23.80	29.45	38.70
v.d.Waerden	9.60	9.10	10.90	14.20	20.00	27.25	33.90	43.35
ATS	4.80	4.95	7.90	8.40	12.50	17.30	22.75	26.05



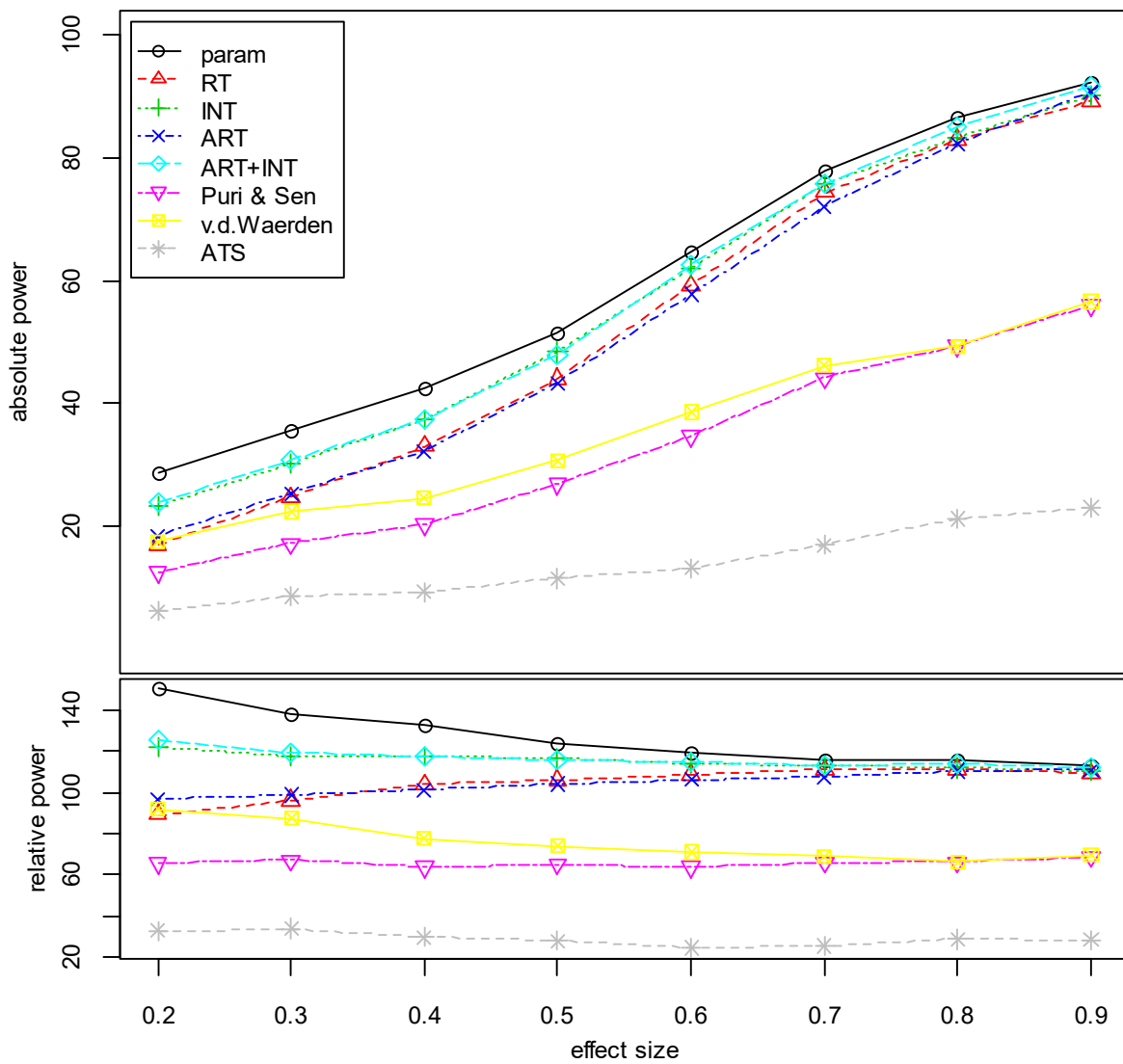
5. 10. 13 normal distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	2.65	3.85	7.70	15.75	28.45	46.85	62.95	79.85
RT	3.70	6.40	10.20	17.45	31.20	47.30	60.40	75.15
INT	2.80	4.70	8.65	15.70	28.35	45.35	59.70	75.25
ART	4.15	7.45	12.40	23.15	39.40	58.20	73.50	86.10
ART+INT	3.05	4.75	9.00	17.40	31.50	50.15	65.95	81.05
Puri & Sen	2.30	3.75	5.65	8.45	13.85	21.25	27.45	34.30
v.d.Waerden	1.50	2.35	4.15	7.55	11.80	19.70	26.20	33.00
ATS	5.90	9.40	12.60	20.45	31.20	43.25	55.70	65.40



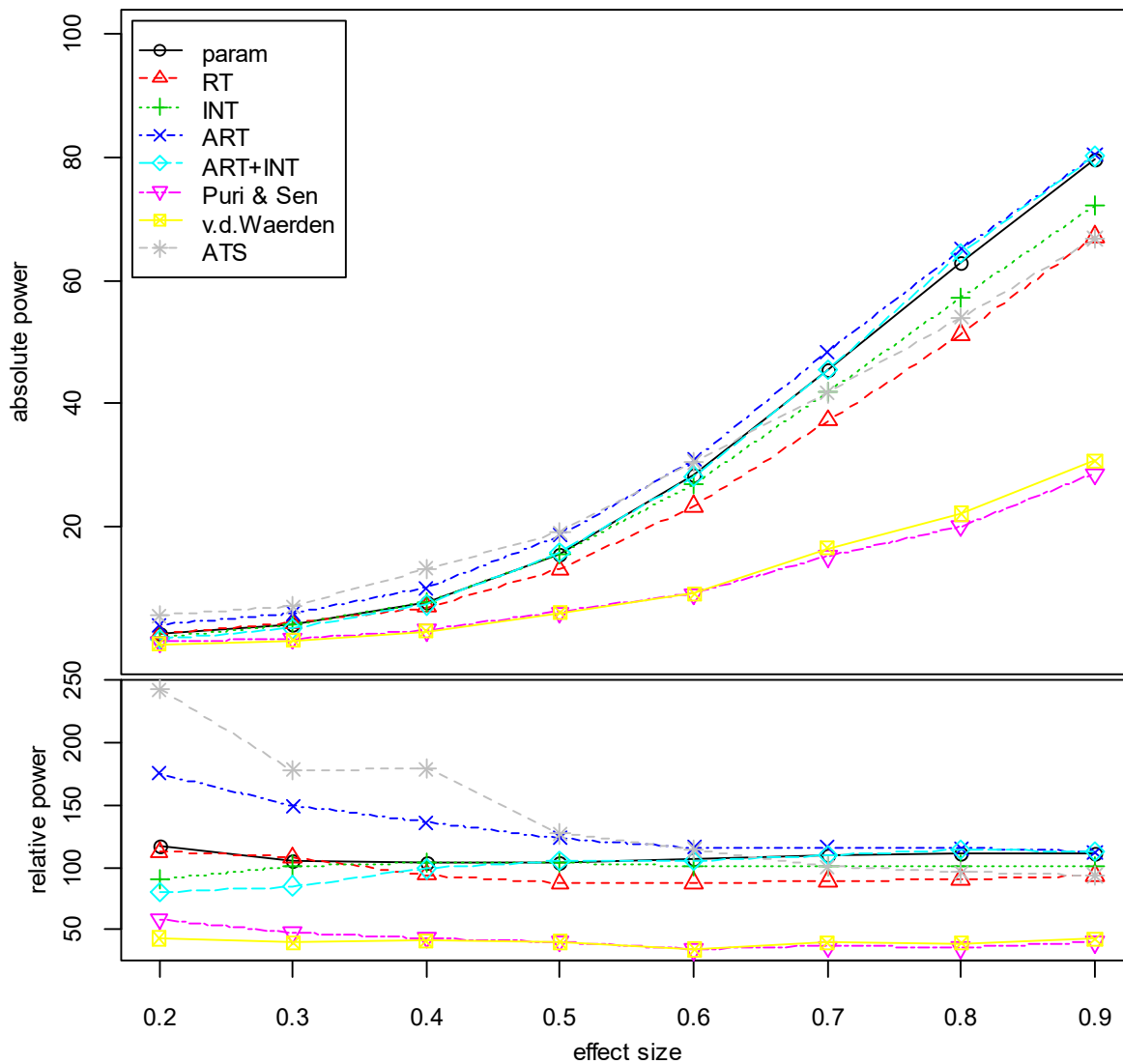
5. 10. 14 normal distribution - unequal variances (small n_i - large s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	28.65	35.55	42.35	51.55	64.80	77.95	86.50	92.25
RT	17.00	24.70	33.00	44.05	59.15	74.40	82.95	89.20
INT	23.25	30.10	37.35	48.35	61.95	75.65	83.35	90.05
ART	18.40	25.35	32.20	43.25	57.75	72.05	82.30	90.75
ART+INT	24.00	30.70	37.50	48.00	62.65	75.85	85.15	91.50
Puri & Sen	12.50	17.20	20.30	26.90	34.70	44.20	49.30	55.95
v.d.Waerden	17.50	22.40	24.60	30.70	38.60	46.15	49.35	56.60
ATS	6.20	8.65	9.35	11.50	13.20	16.95	21.20	23.05



5. 10. 15 left skewed distribution - unequal variances (small n_i - small s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	2.70	4.20	7.65	15.55	28.30	45.50	62.95	79.75
RT	2.60	4.30	6.95	13.10	23.35	37.20	51.25	67.05
INT	2.10	4.05	7.65	15.60	26.80	41.95	57.25	72.20
ART	4.05	5.95	10.05	18.60	30.95	48.40	65.10	80.30
ART+INT	1.85	3.40	7.30	15.85	28.25	45.55	64.25	80.10
Puri & Sen	1.35	1.90	3.25	6.10	9.15	15.25	20.10	28.60
v.d.Waerden	1.00	1.60	3.05	6.05	9.15	16.50	22.15	30.70
ATS	5.60	7.10	13.20	19.05	30.50	41.75	54.00	66.75



5. 10. 16 left skewed distribution - unequal variances (small n_i - large s_j)

method	factor standard deviation							
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
parametric	29.00	34.85	44.00	52.65	67.50	77.75	86.35	93.40
RT	21.40	24.50	35.75	44.90	60.80	71.85	81.85	90.05
INT	32.25	38.15	48.35	55.10	69.95	77.90	86.00	92.30
ART	22.20	26.30	35.70	43.45	58.25	69.65	80.15	88.80
ART+INT	31.05	36.75	46.85	54.20	69.25	78.95	87.40	93.40
Puri & Sen	16.10	17.85	23.85	29.15	38.35	44.75	51.95	60.45
v.d.Waerden	26.75	28.45	33.80	35.65	44.55	49.00	54.00	61.25
ATS	6.35	6.40	9.15	9.85	12.95	15.55	20.45	20.70

