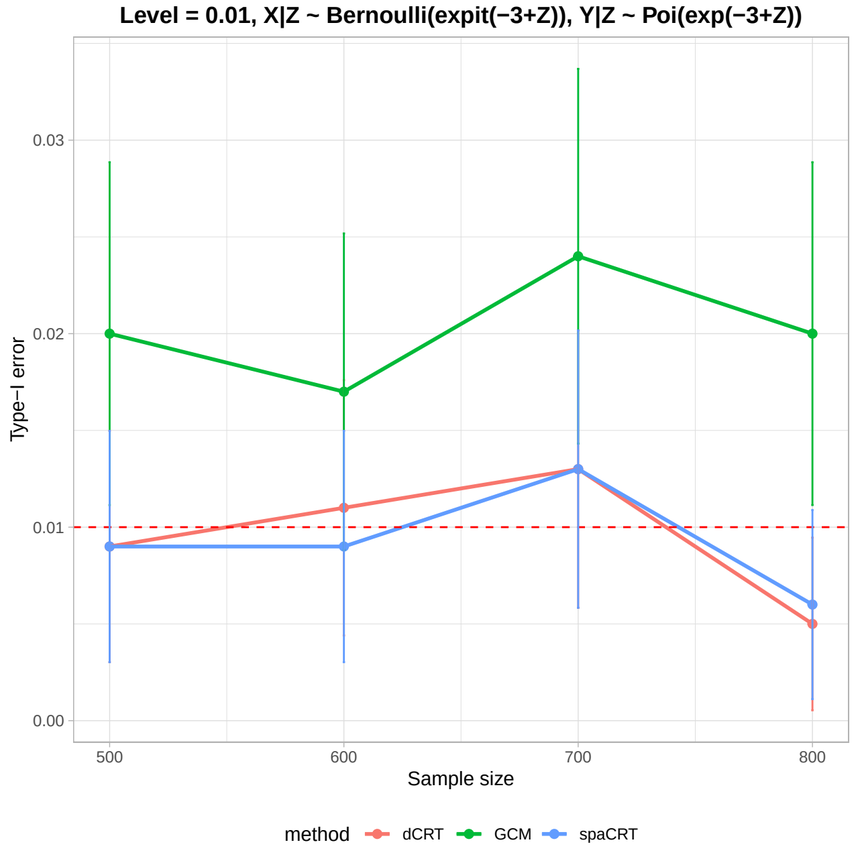
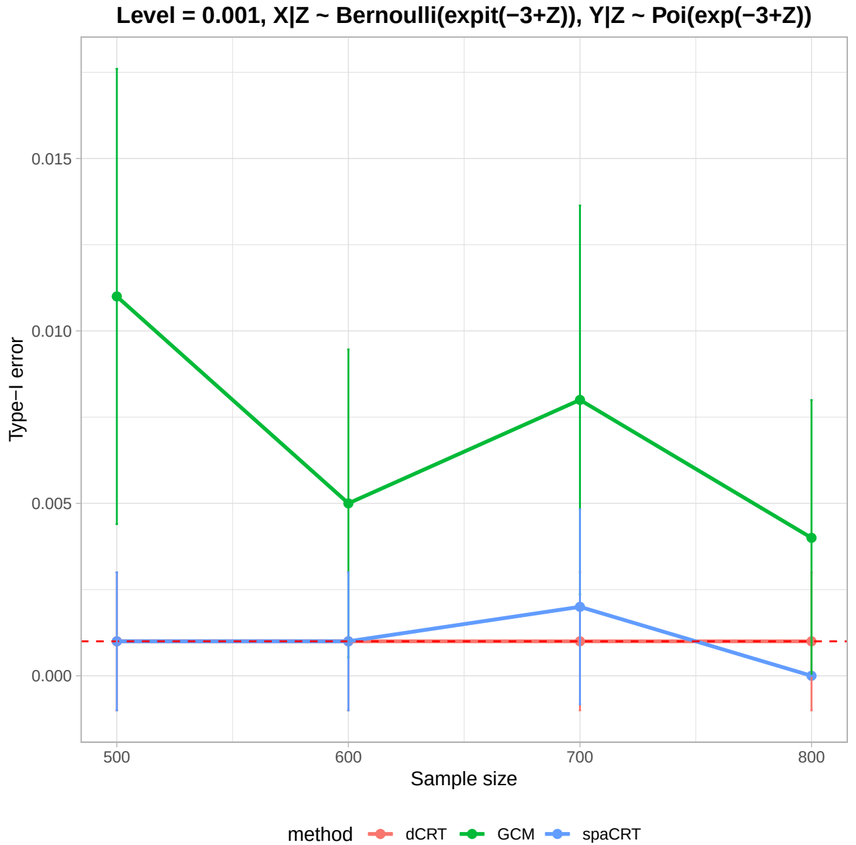
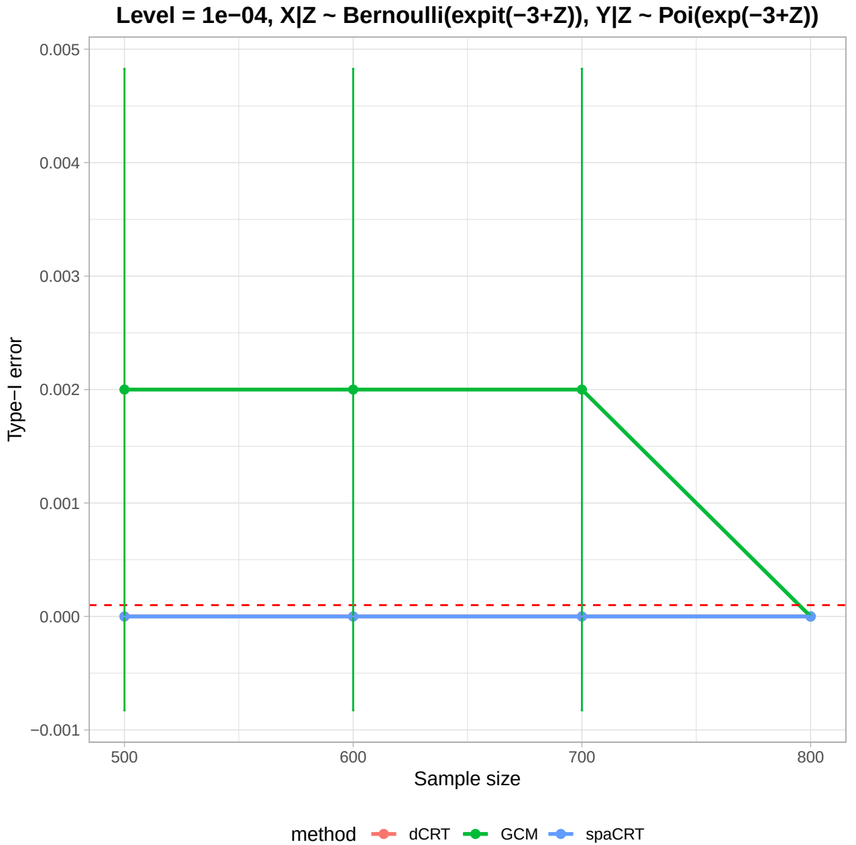
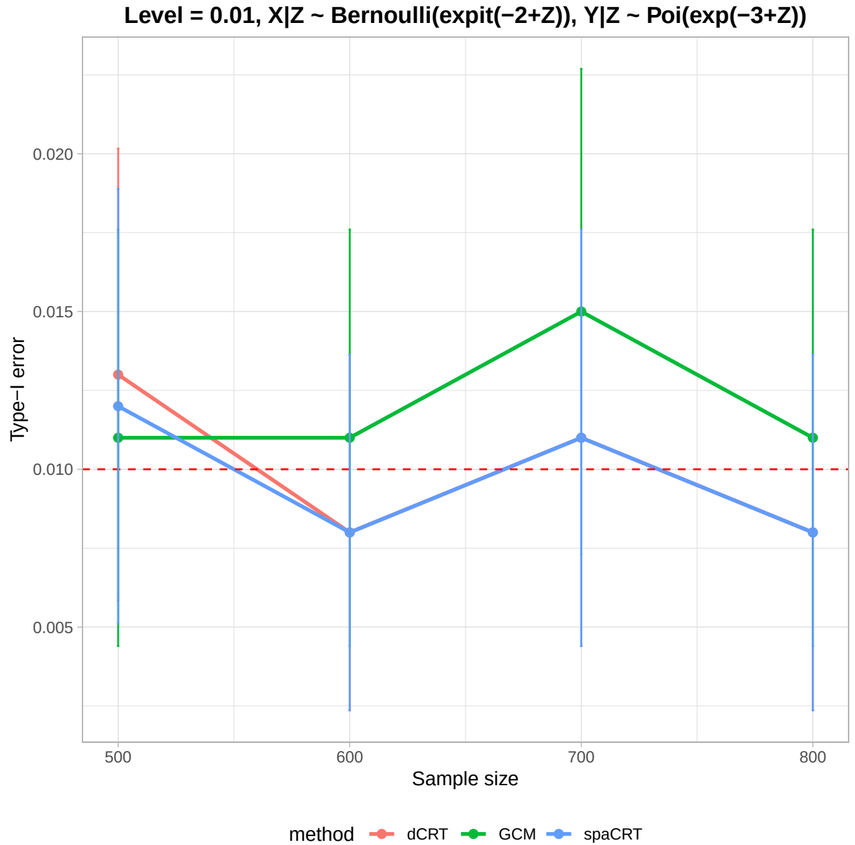
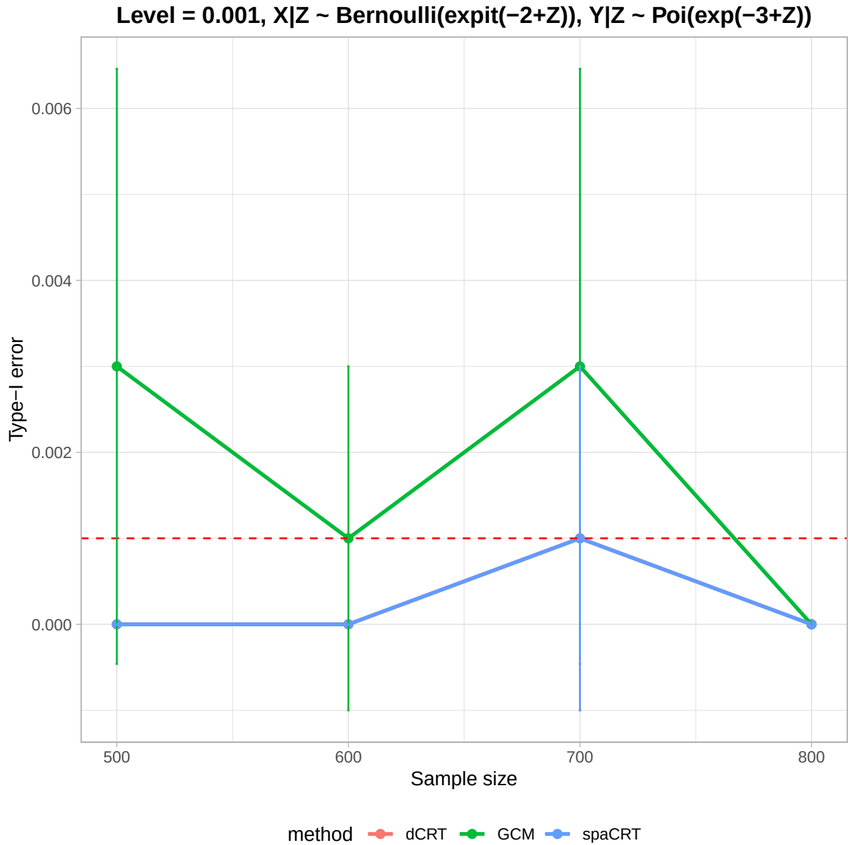
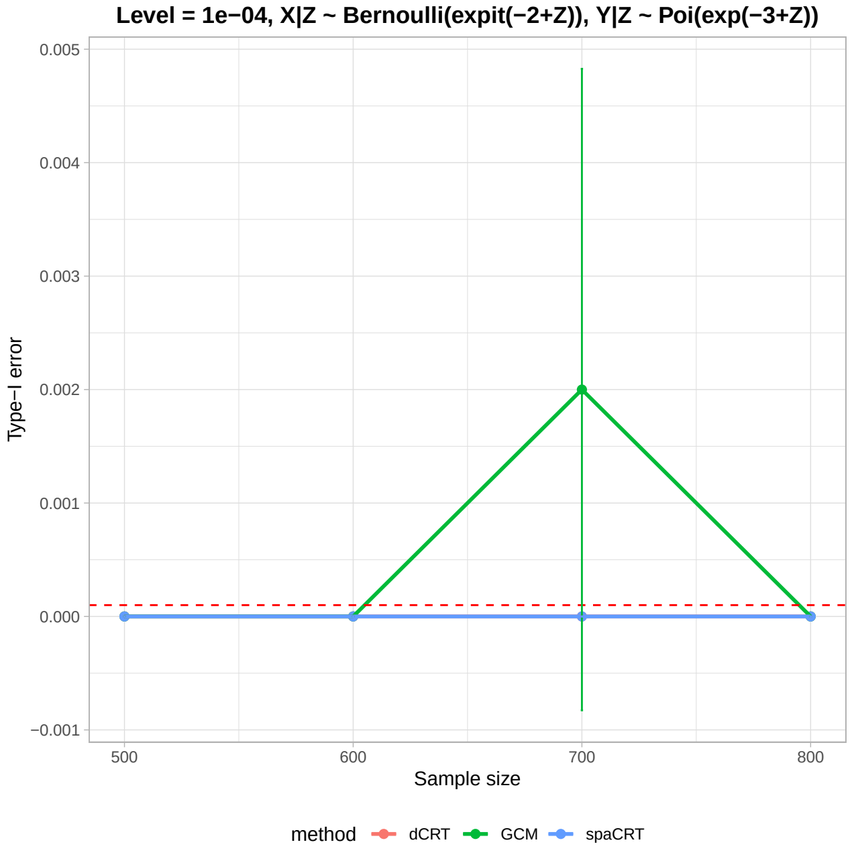

Level = 0.01, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.03
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

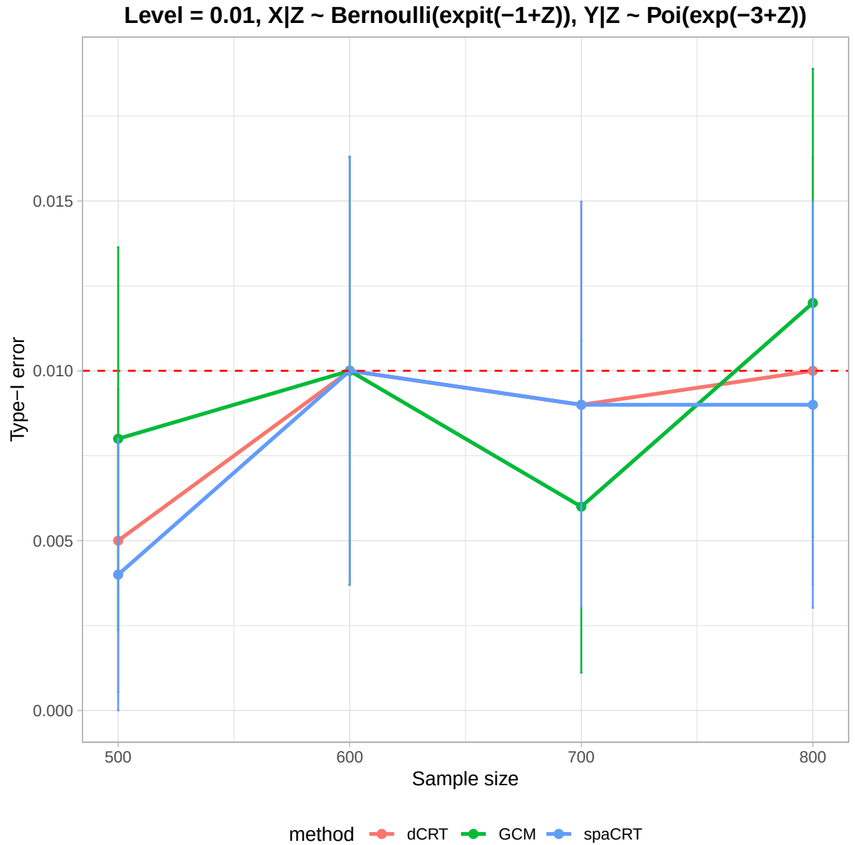

Level = 0.001, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

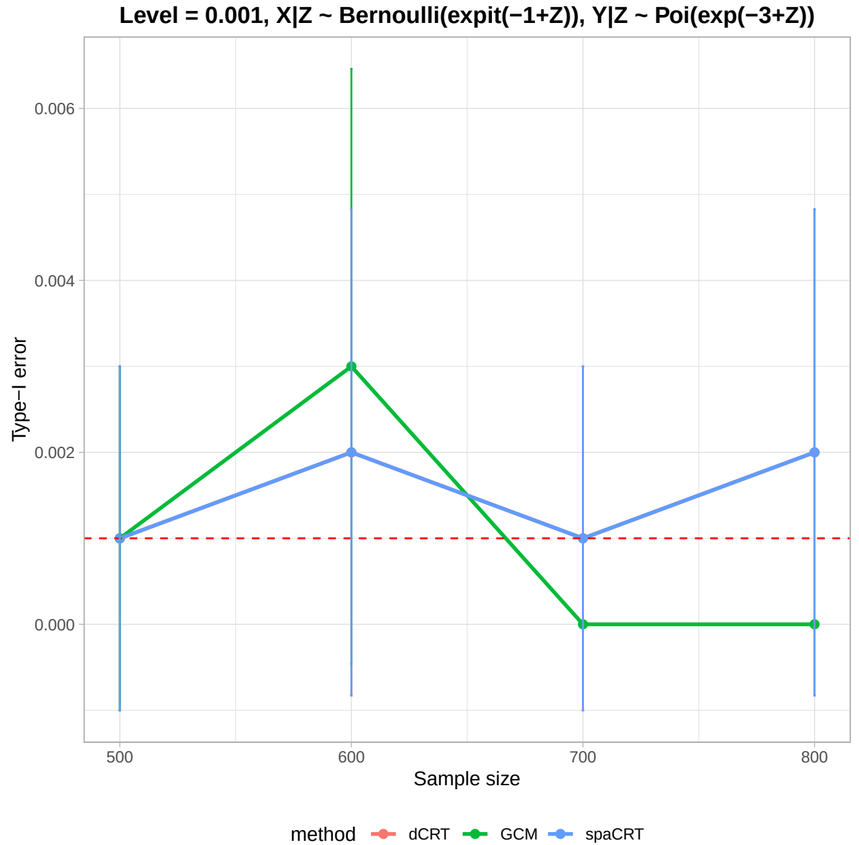

Level = 1e−04, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

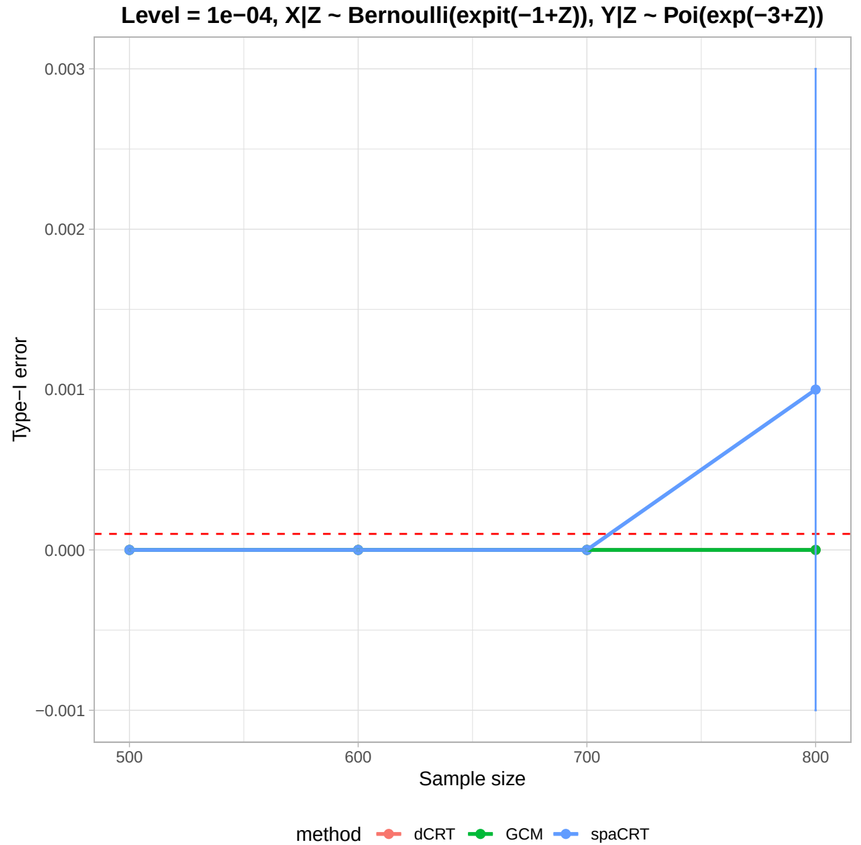

Level = 0.01, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

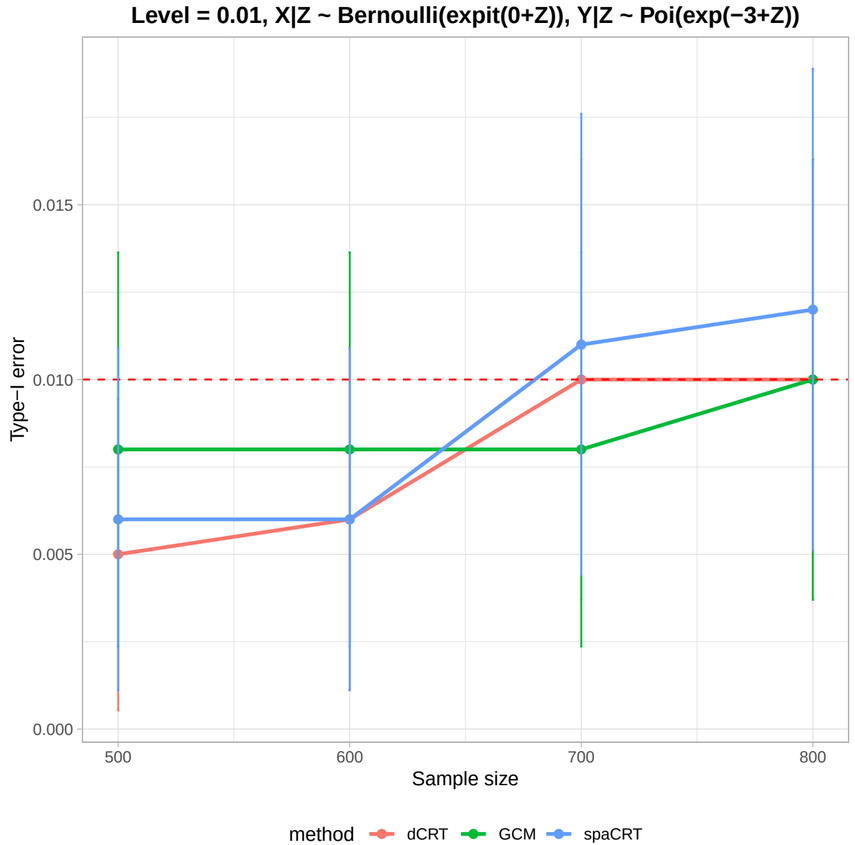

Level = 0.001, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

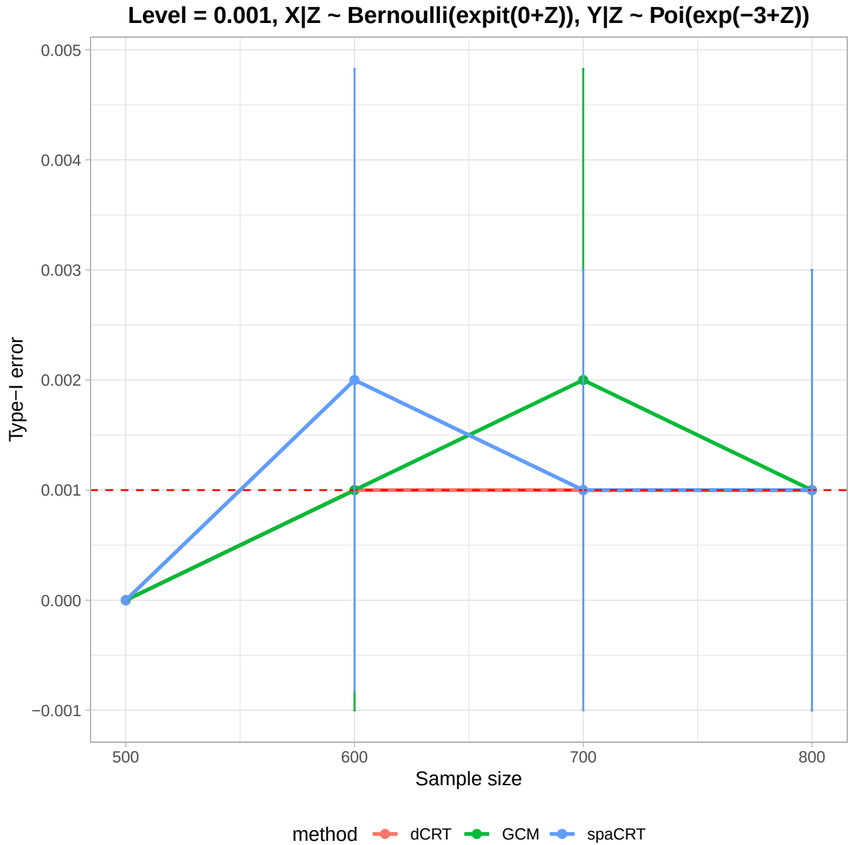

Level = 1e−04, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

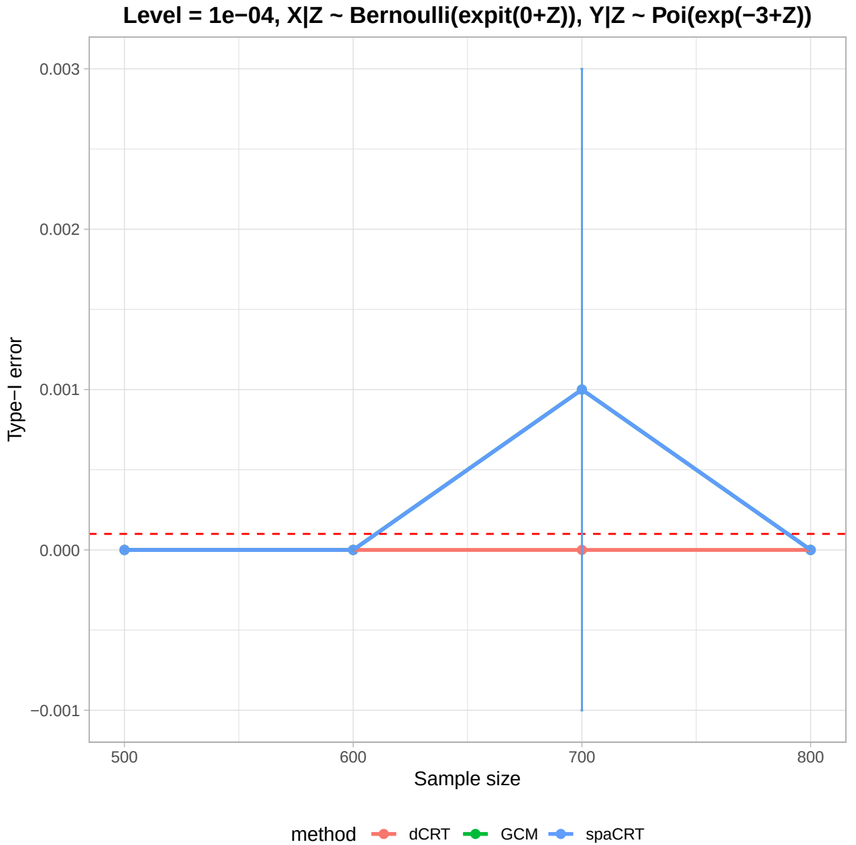

Level = 0.01, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

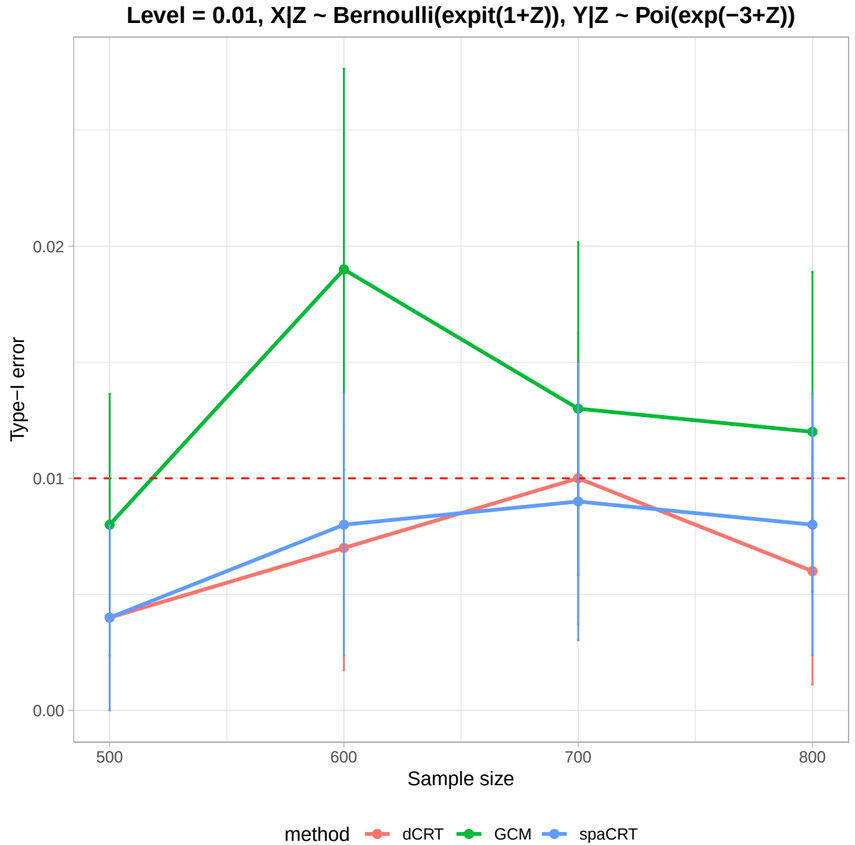

Level = 0.001, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

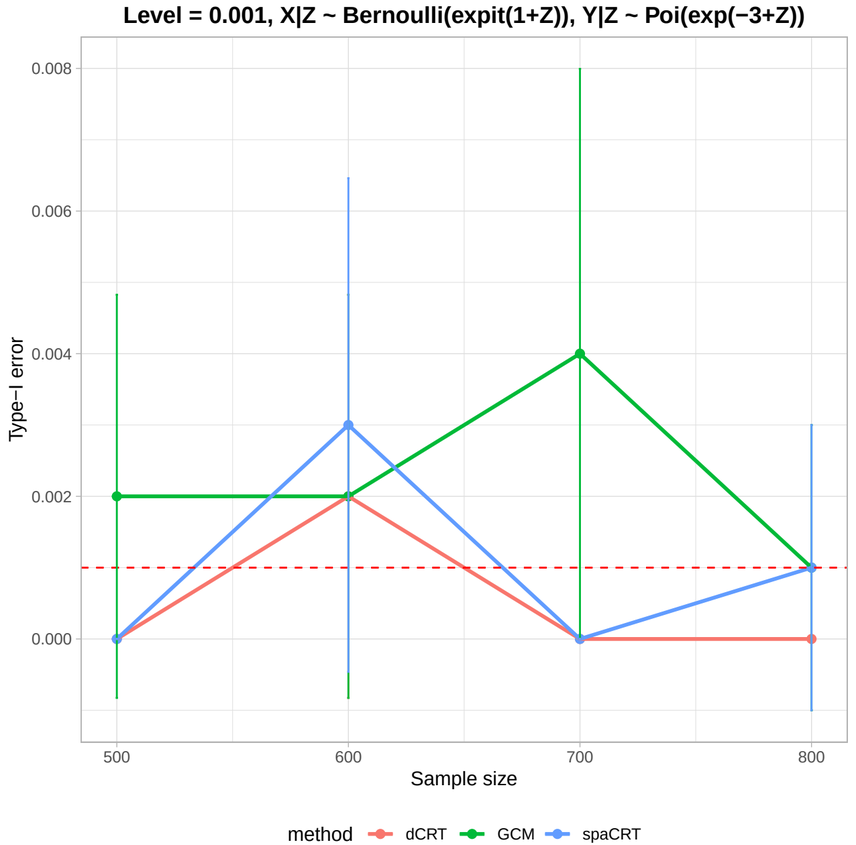

Level = 1e−04, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

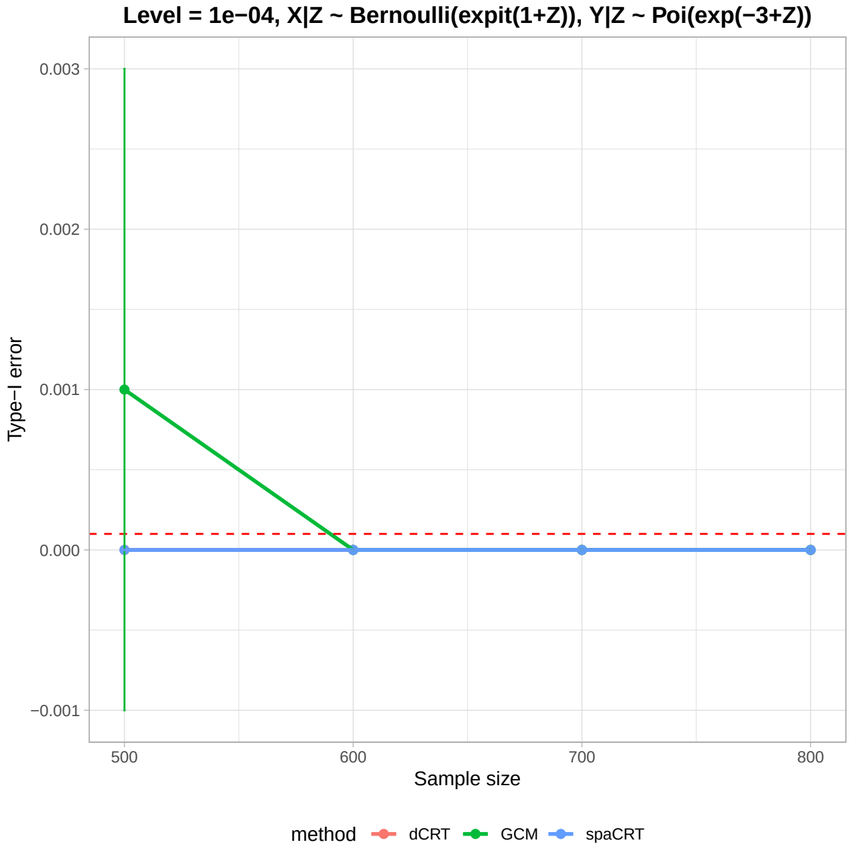

Level = 0.01, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

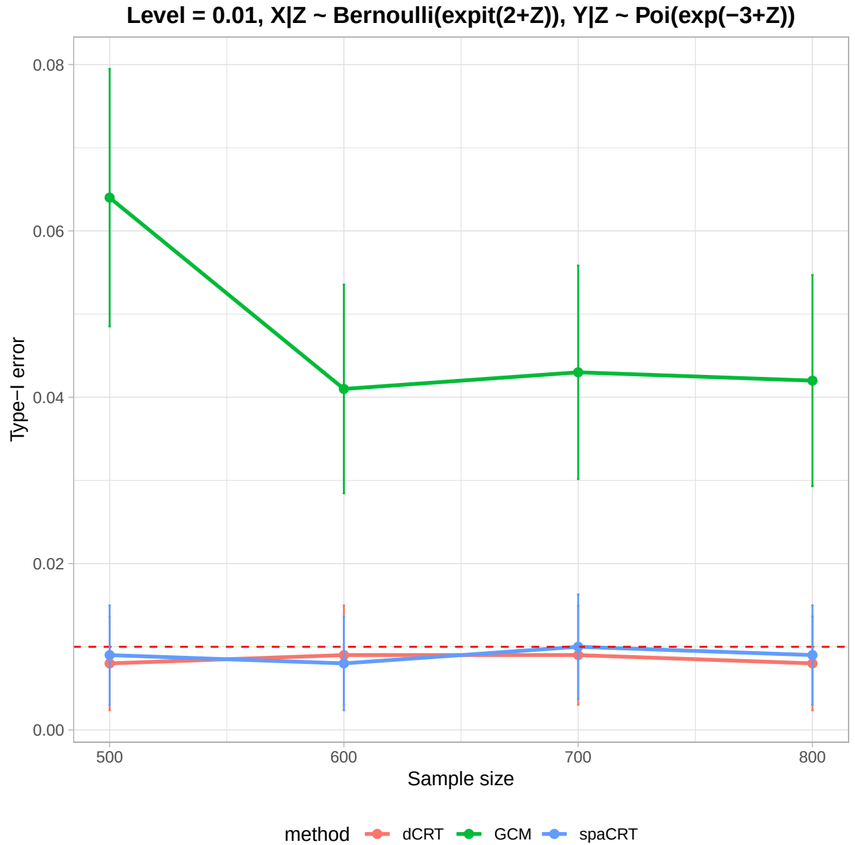

Level = 0.001, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

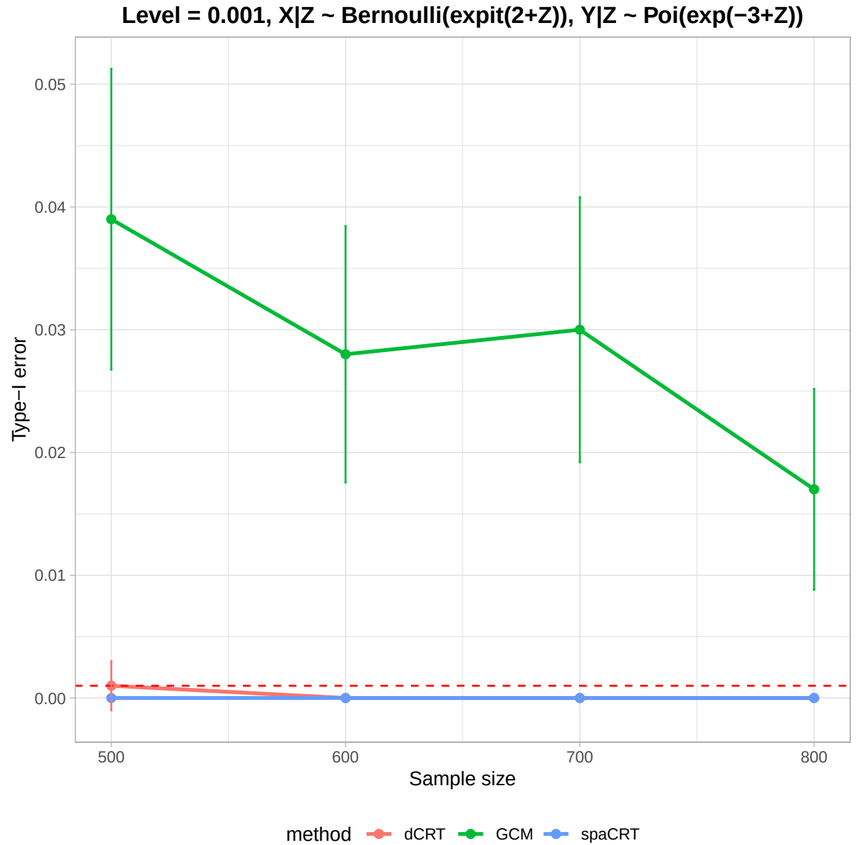

Level = 1e−04, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

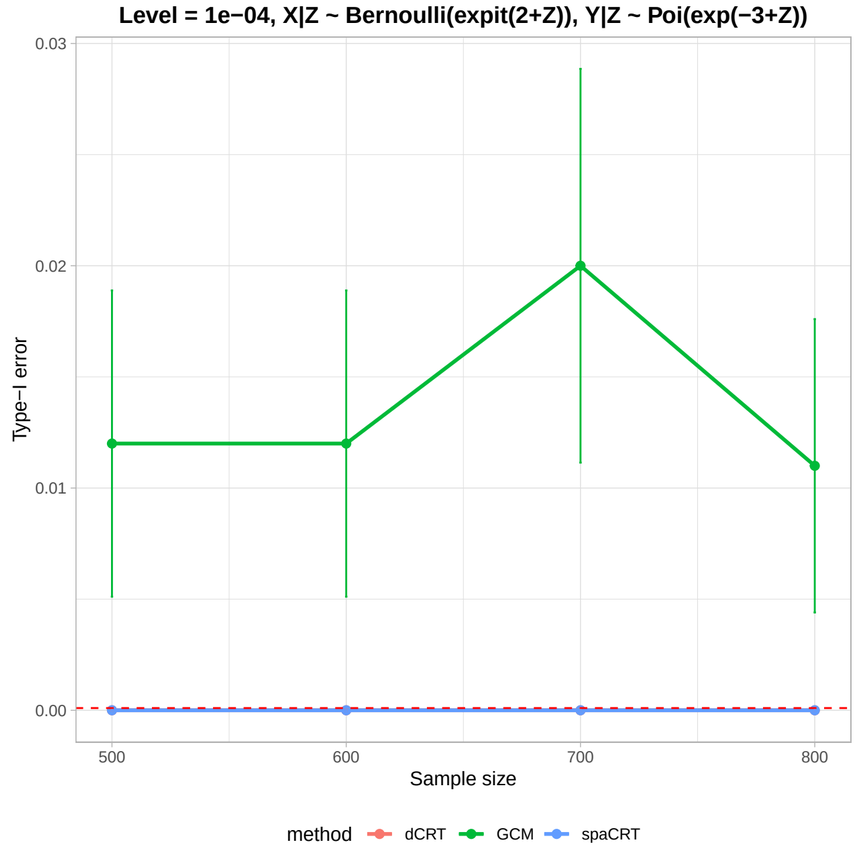

Level = 0.01, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

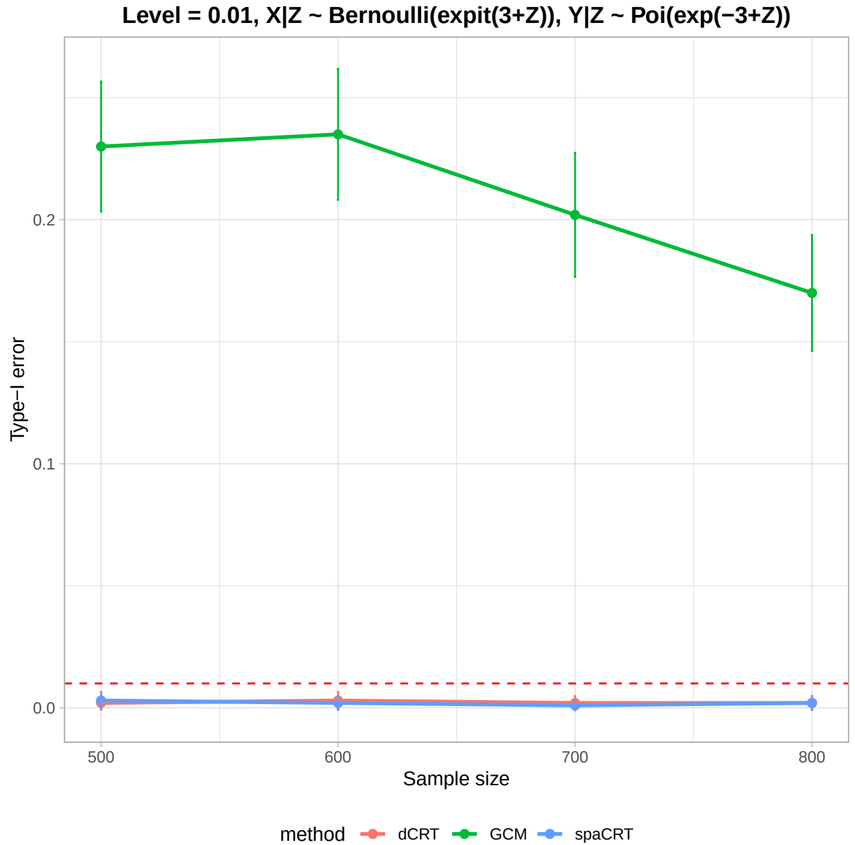

Level = 0.001, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.008
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

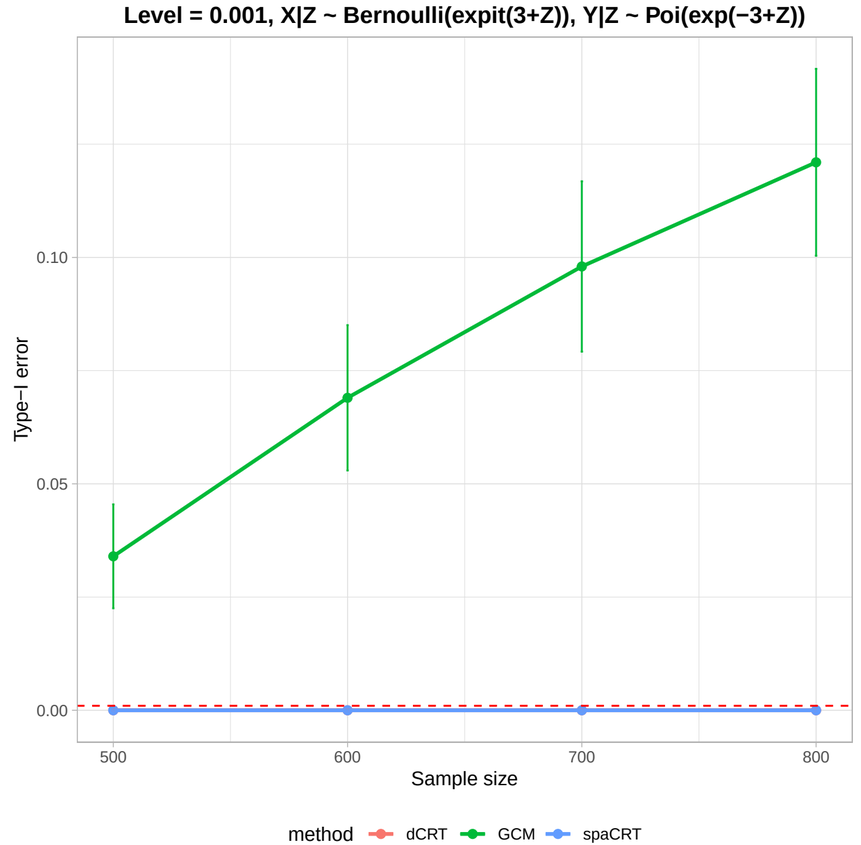

Level = 1e−04, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

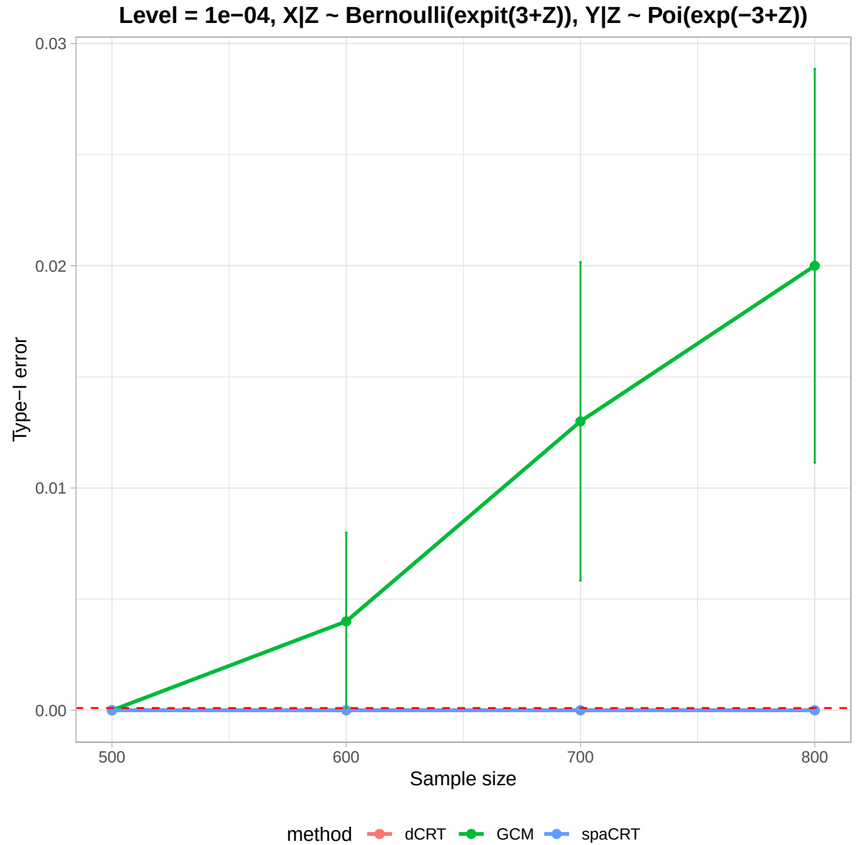

Level = 0.01, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.08
0.06
0.04
0.02
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

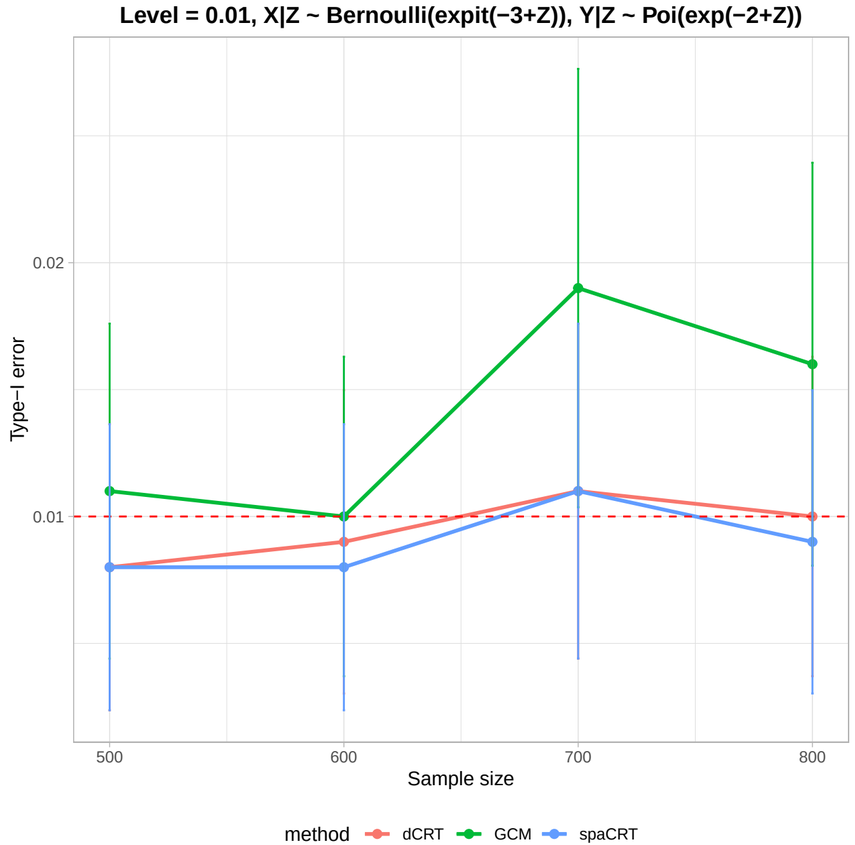

Level = 0.001, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.05
0.04
0.03
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

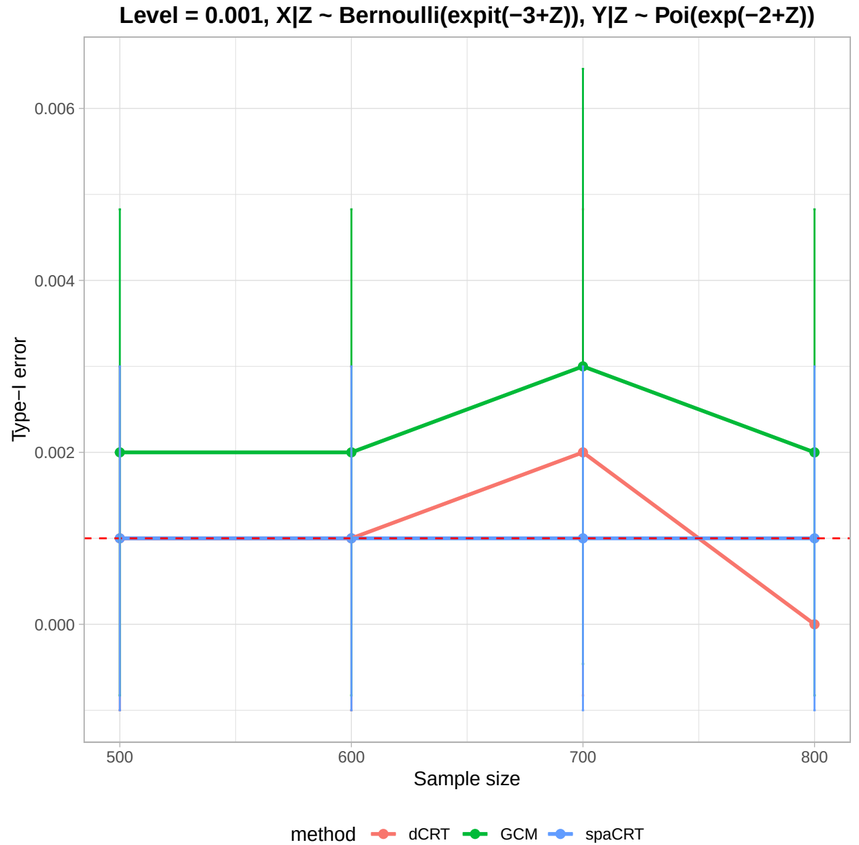

Level = 1e−04, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.03
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

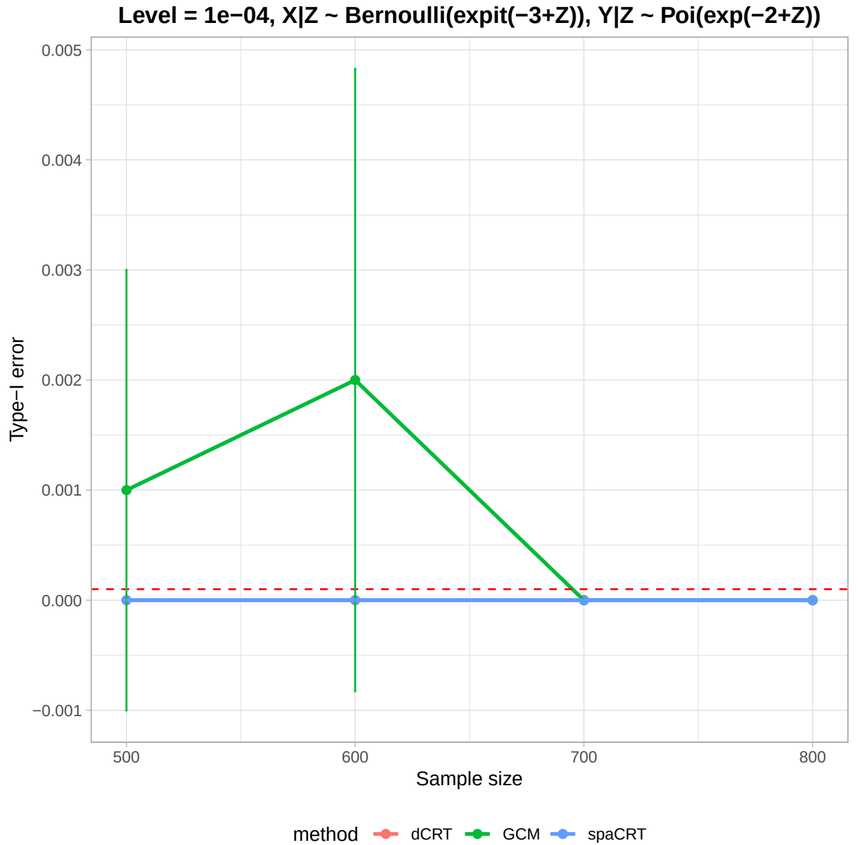

Level = 0.01, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.0
0.1
0.2
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

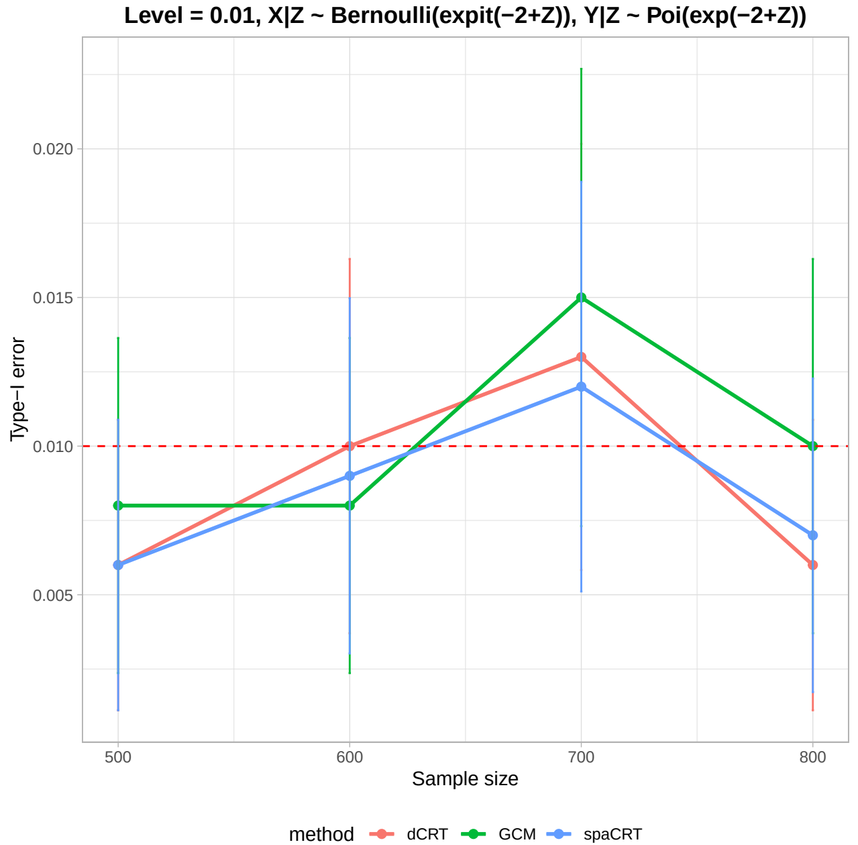

Level = 0.001, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.00
0.05
0.10
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

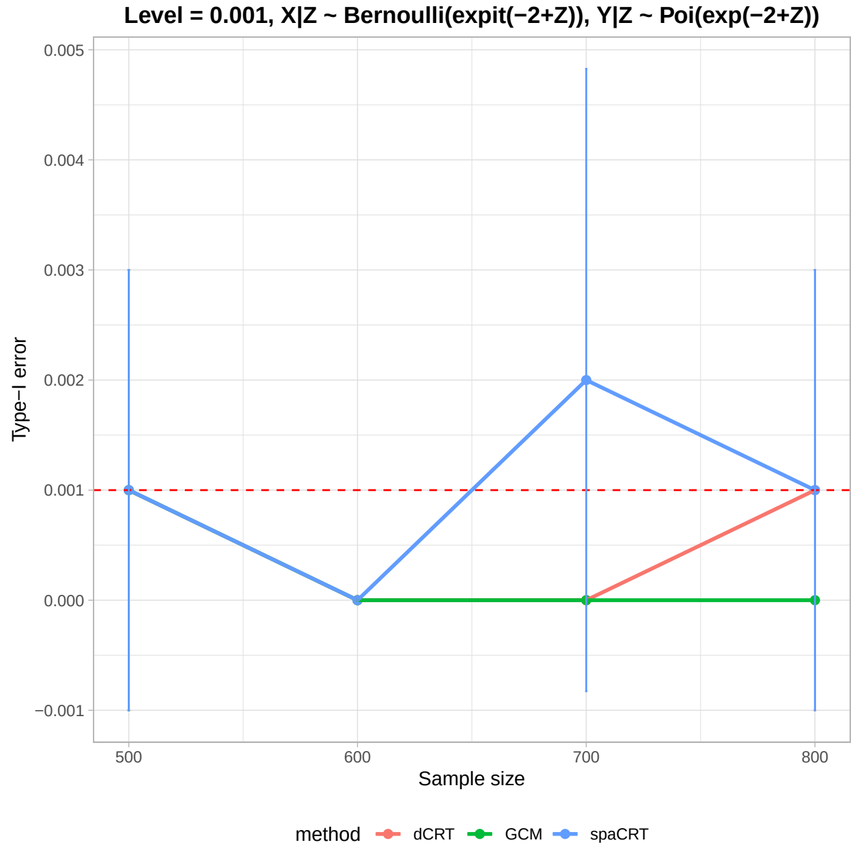

Level = 1e−04, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−3+Z))
Type−I error
0.00
0.01
0.02
0.03
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

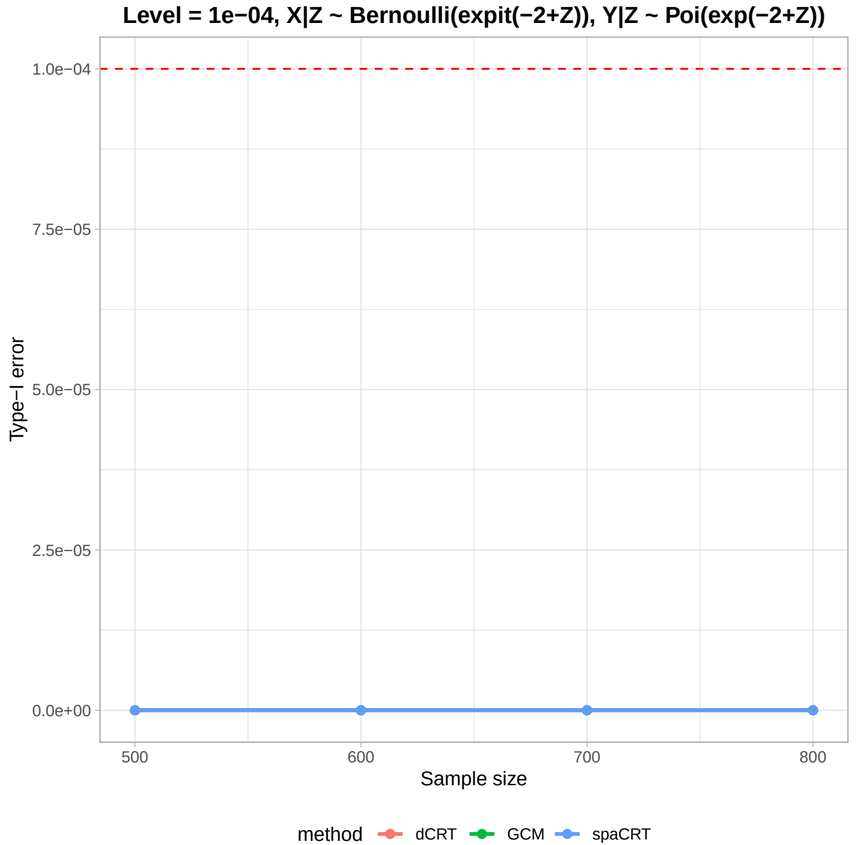

Level = 0.01, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.02
0.01
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

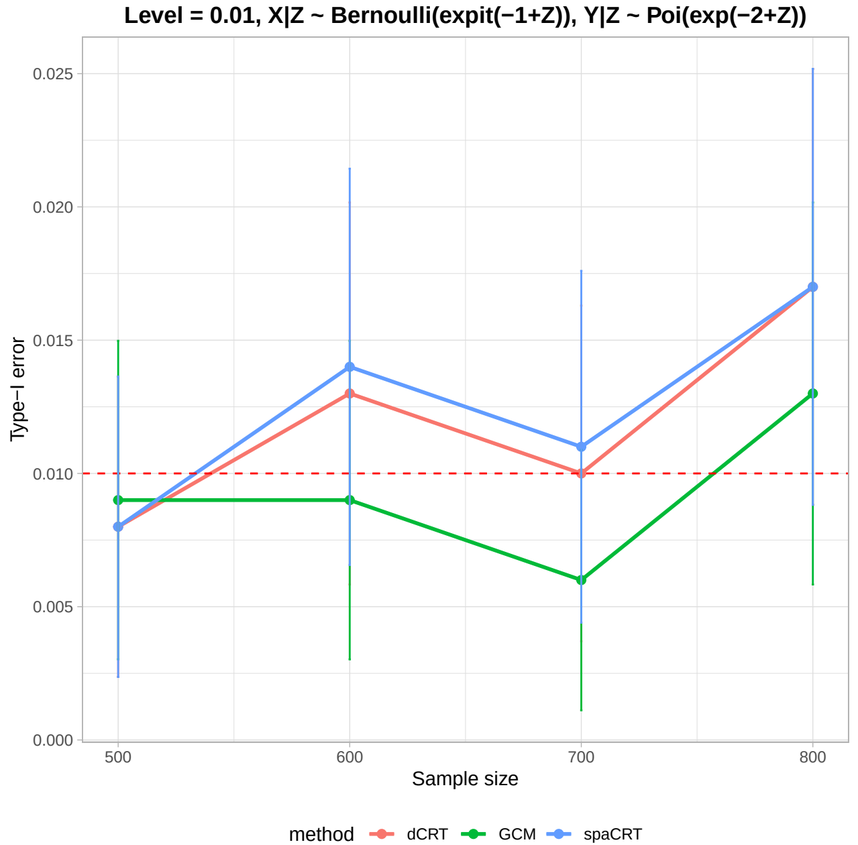

Level = 0.001, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

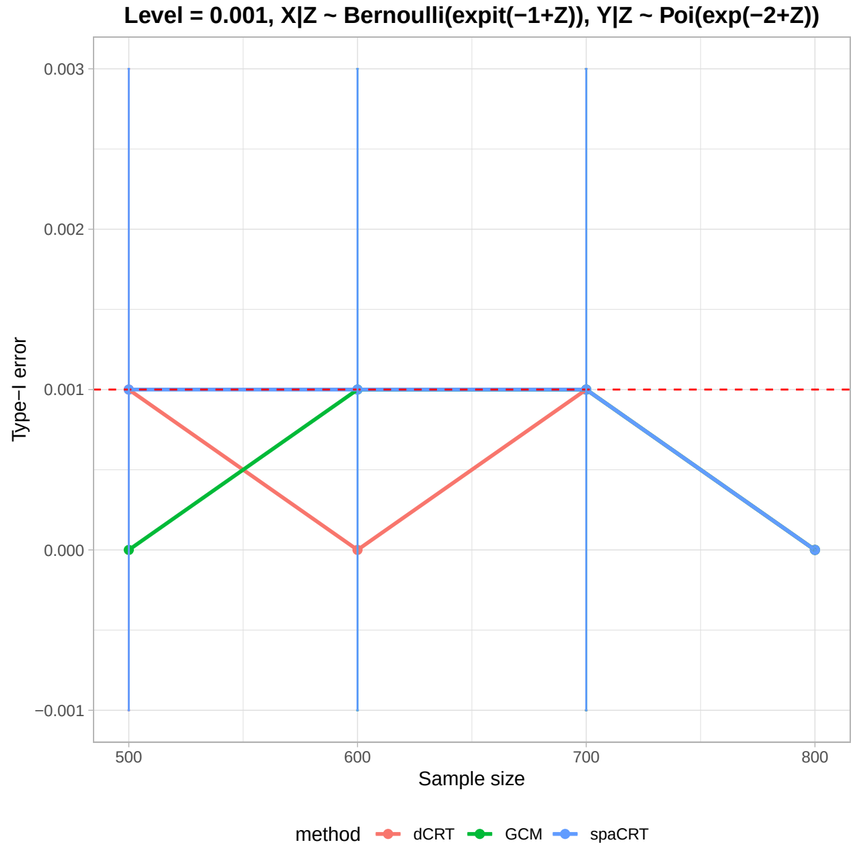

Level = 1e−04, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

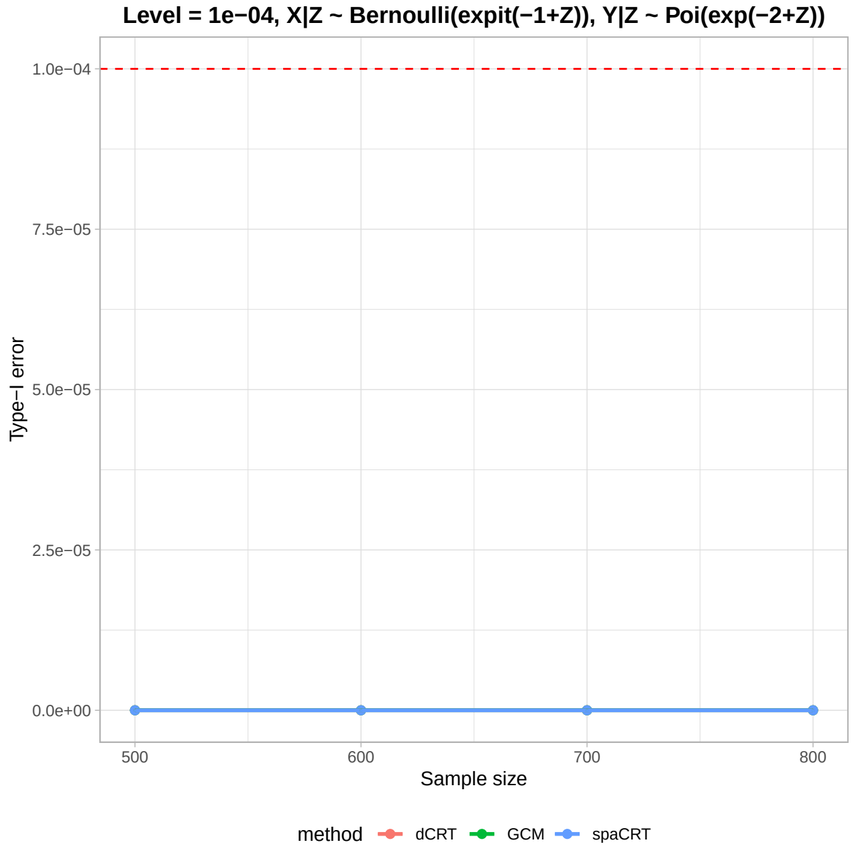

Level = 0.01, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

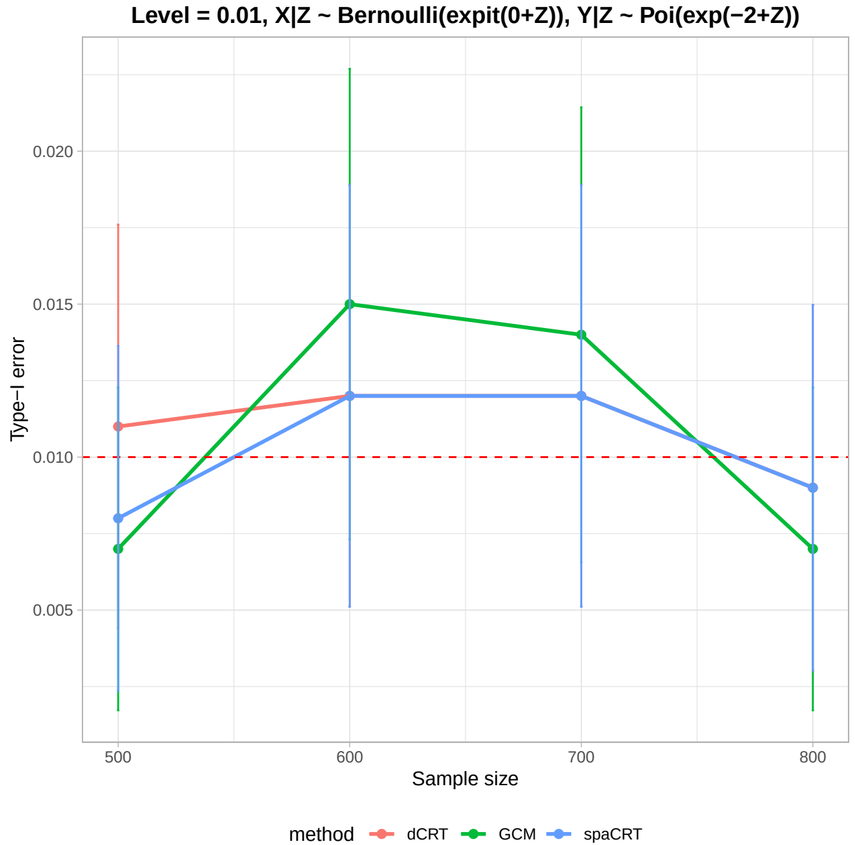

Level = 0.001, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

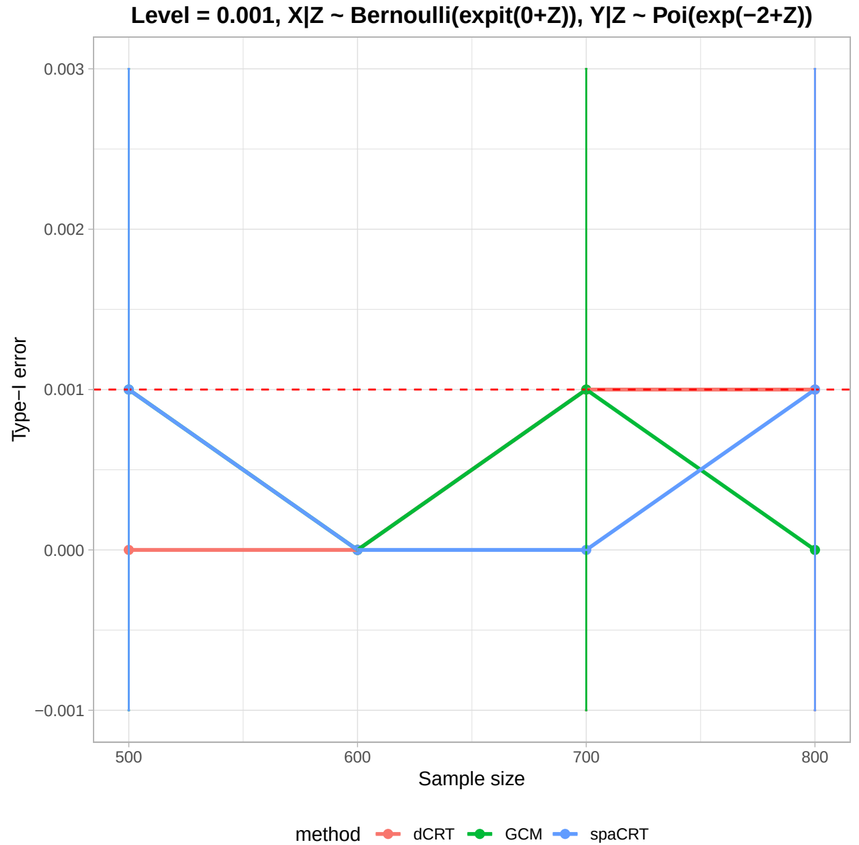

Level = 1e−04, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

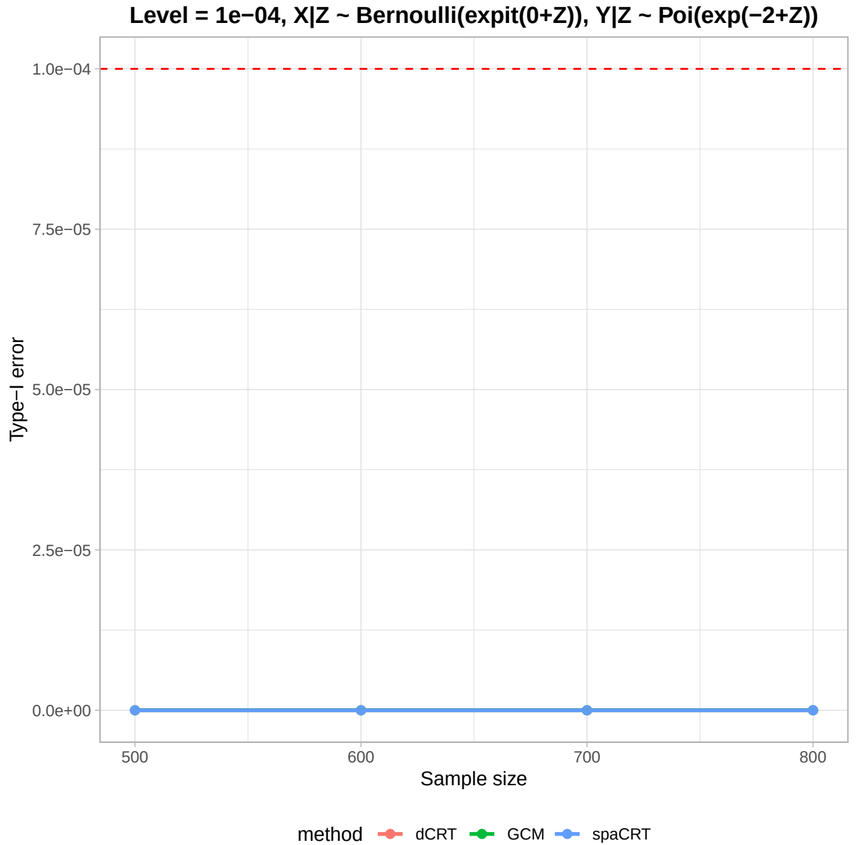

Level = 0.01, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.025
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

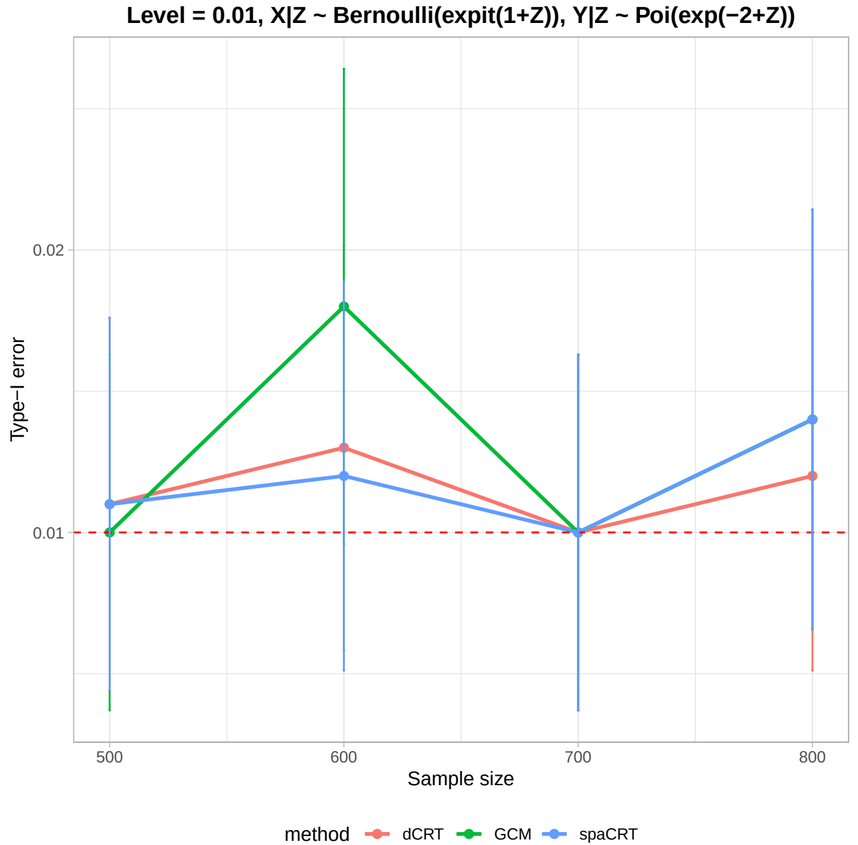

Level = 0.001, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

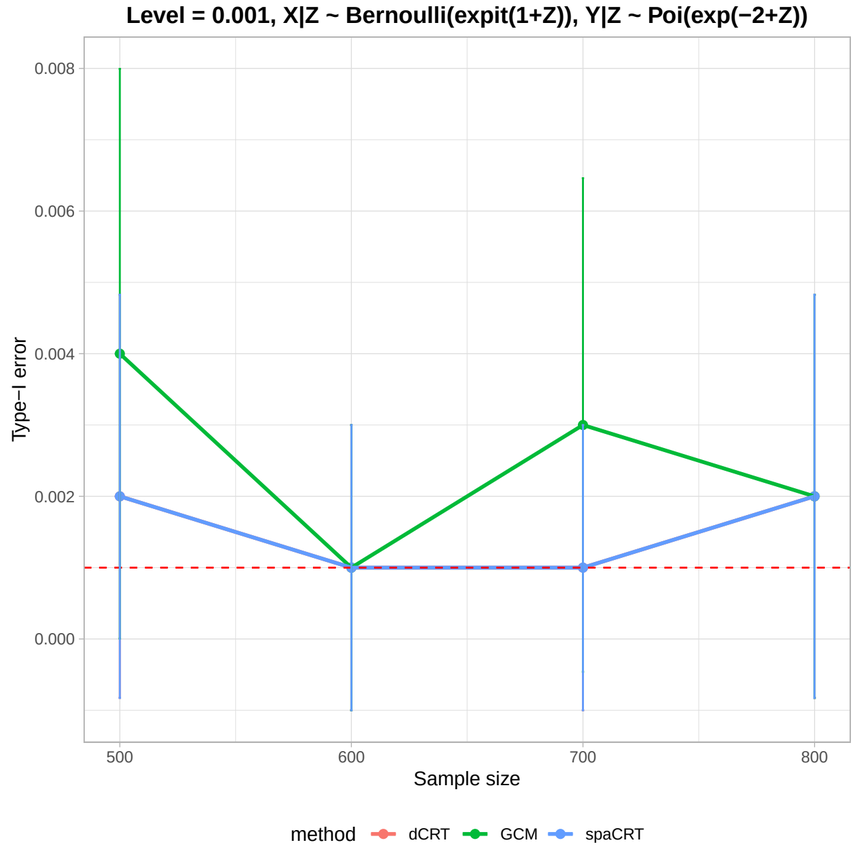

Level = 1e−04, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

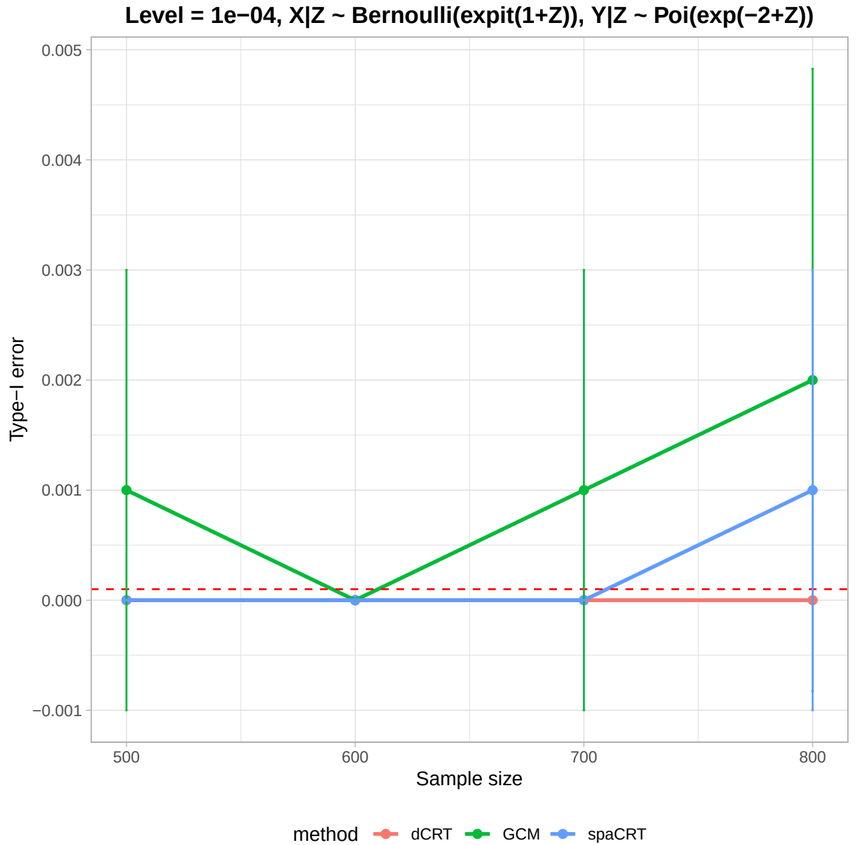

Level = 0.01, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

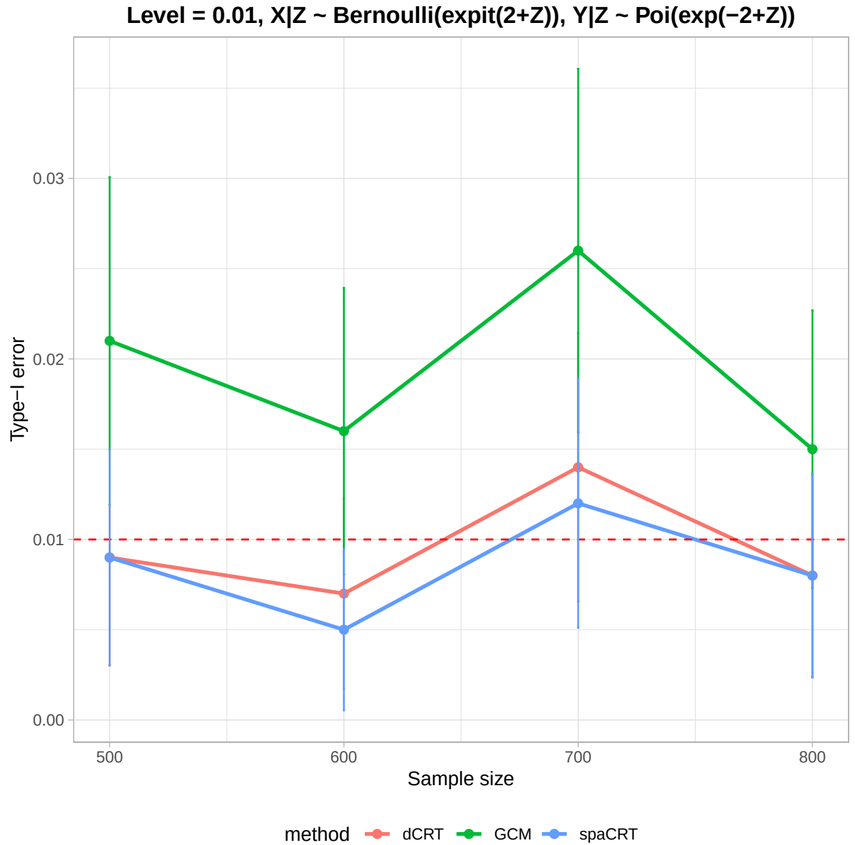

Level = 0.001, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

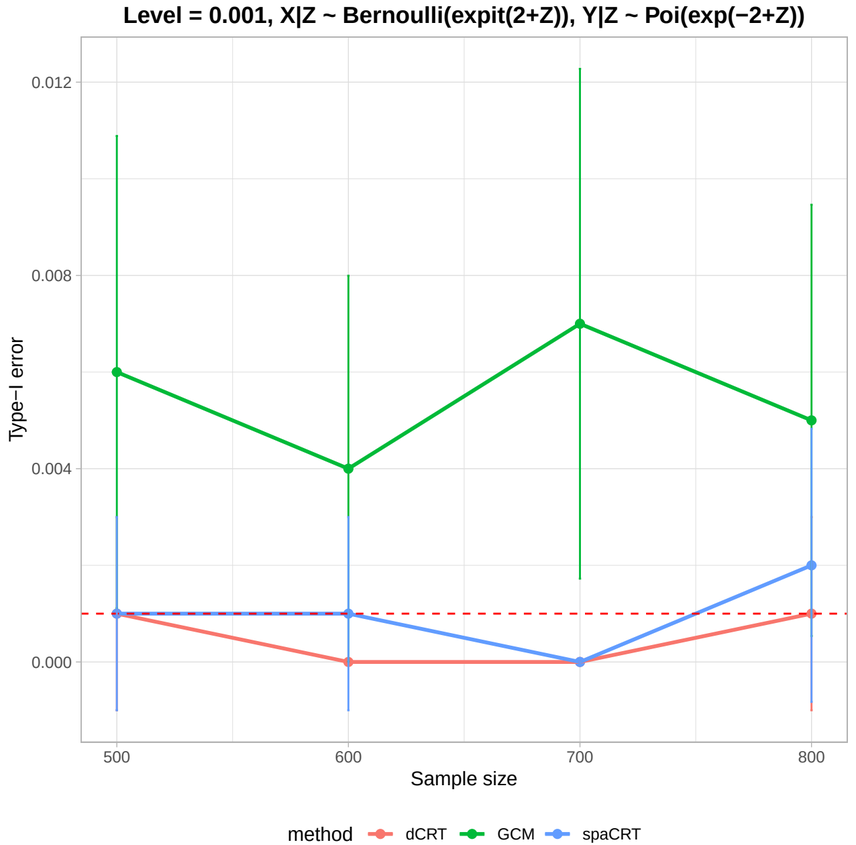

Level = 1e−04, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

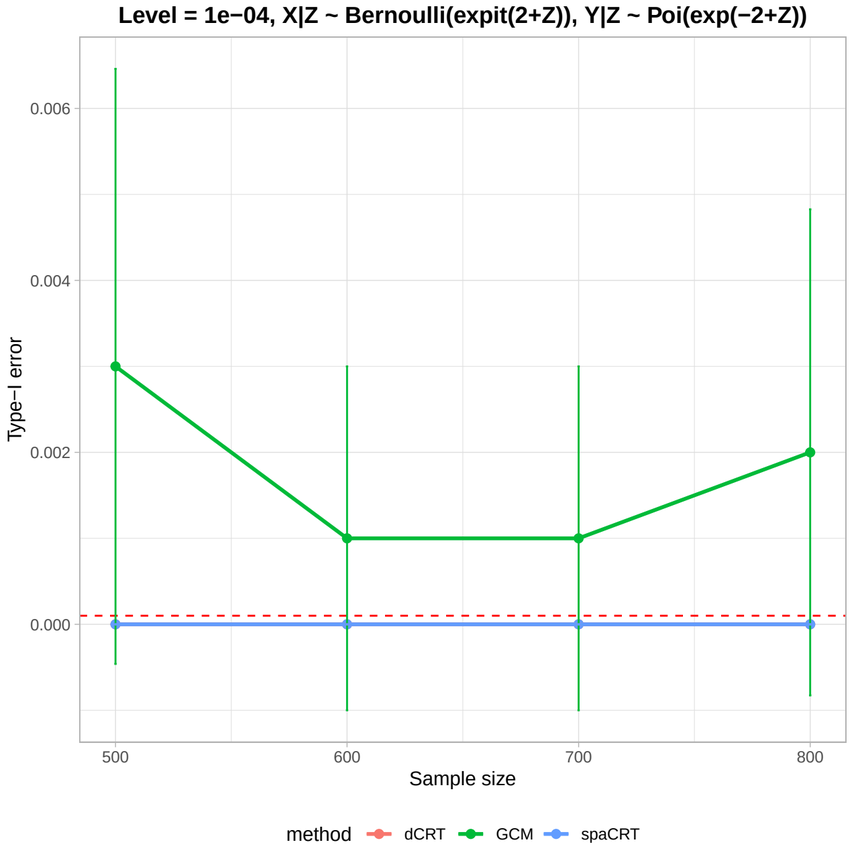

Level = 0.01, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.02
0.01
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

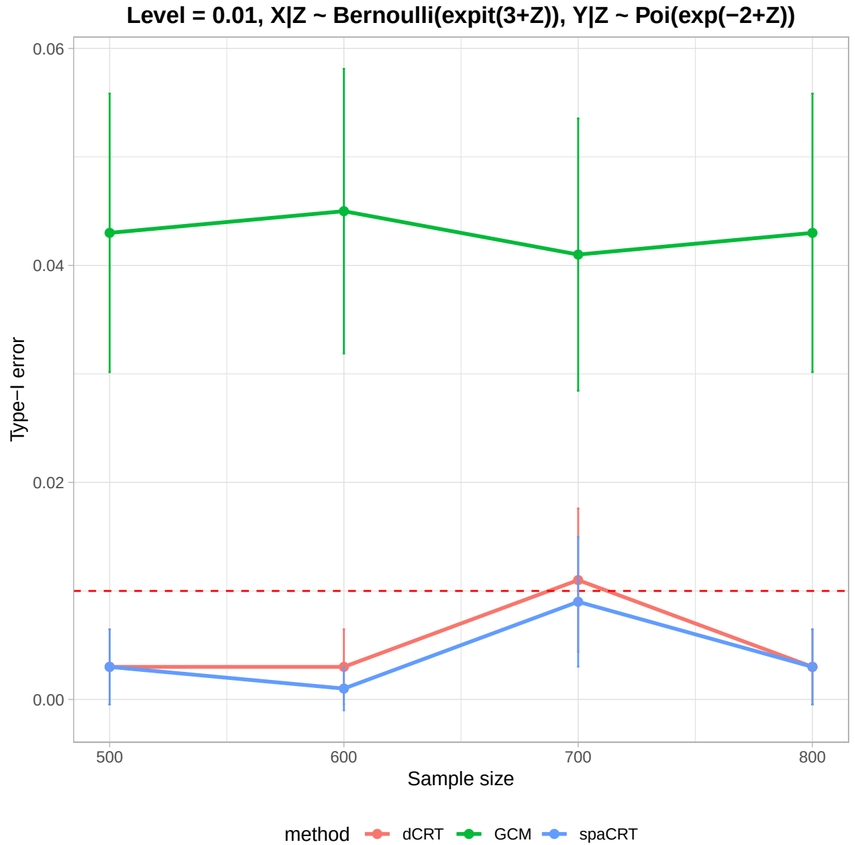

Level = 0.001, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.008
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

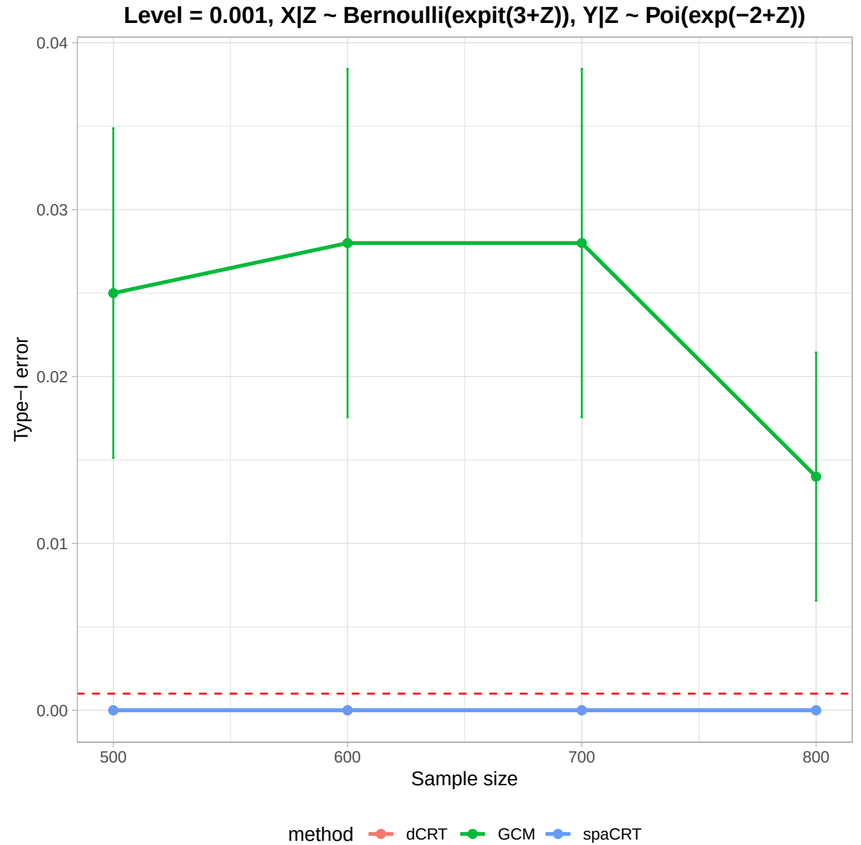

Level = 1e−04, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

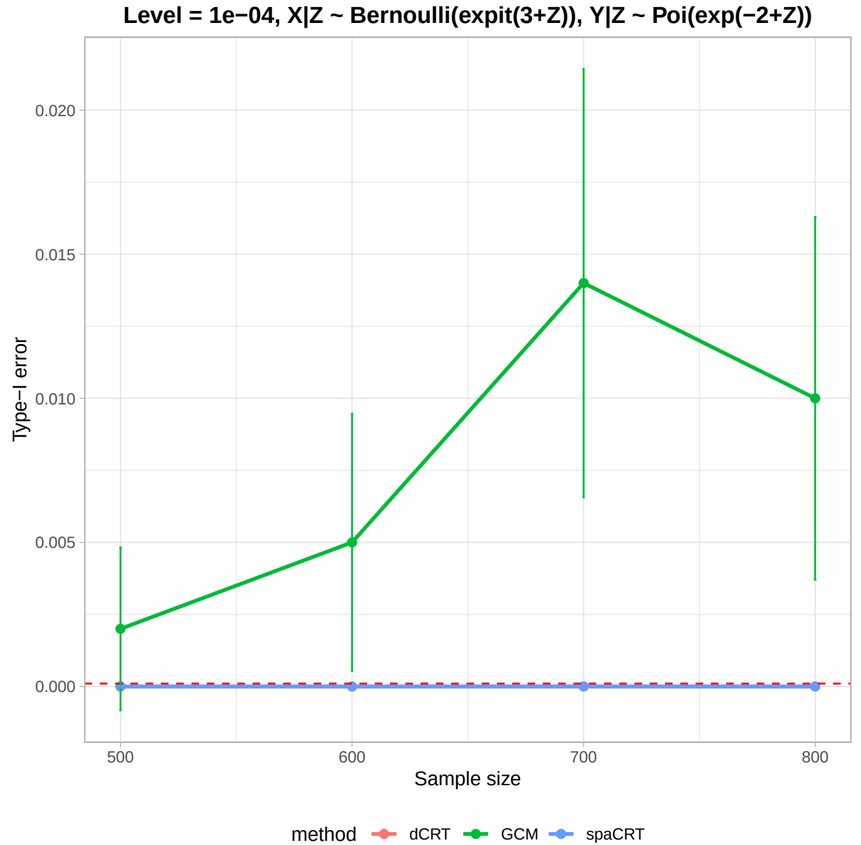

Level = 0.01, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.03
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

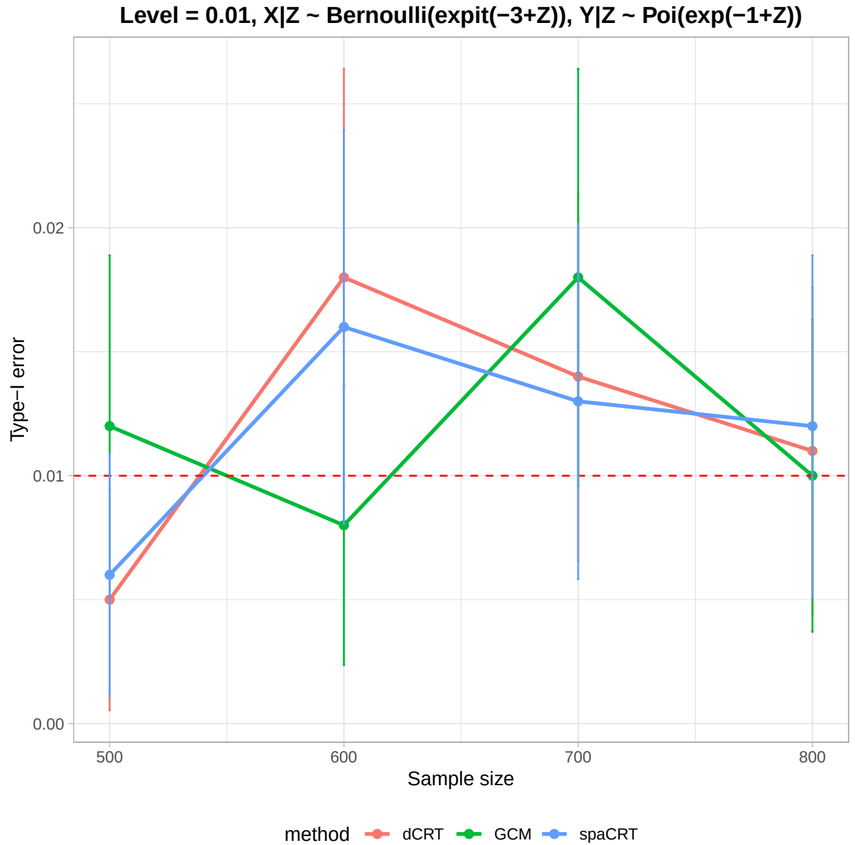

Level = 0.001, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.012
0.008
0.004
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

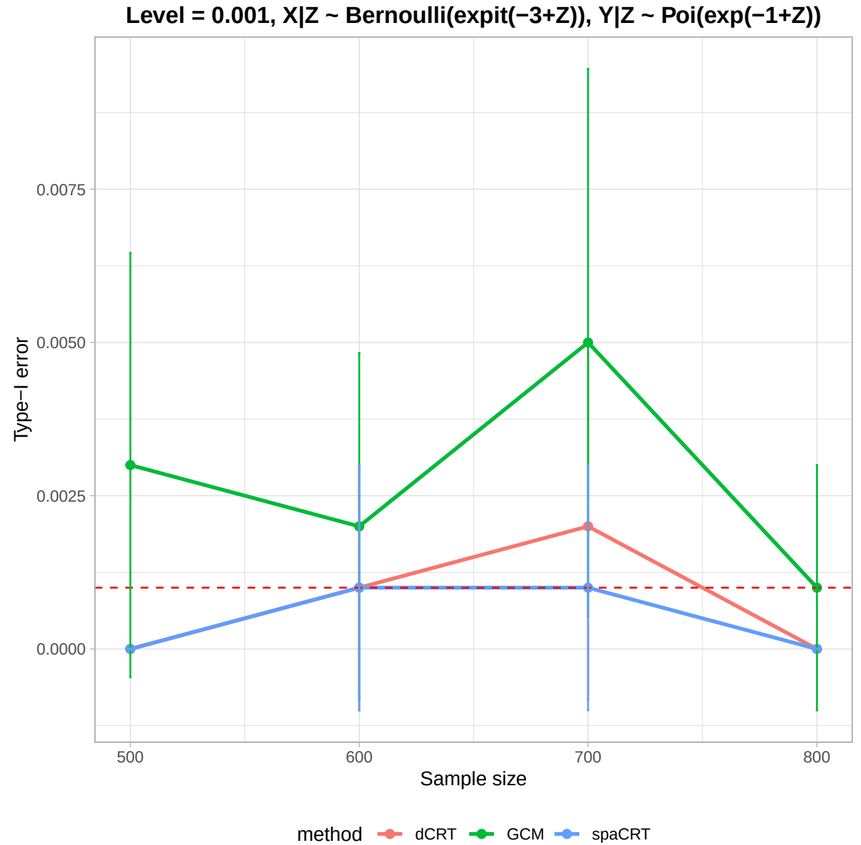

Level = 1e−04, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

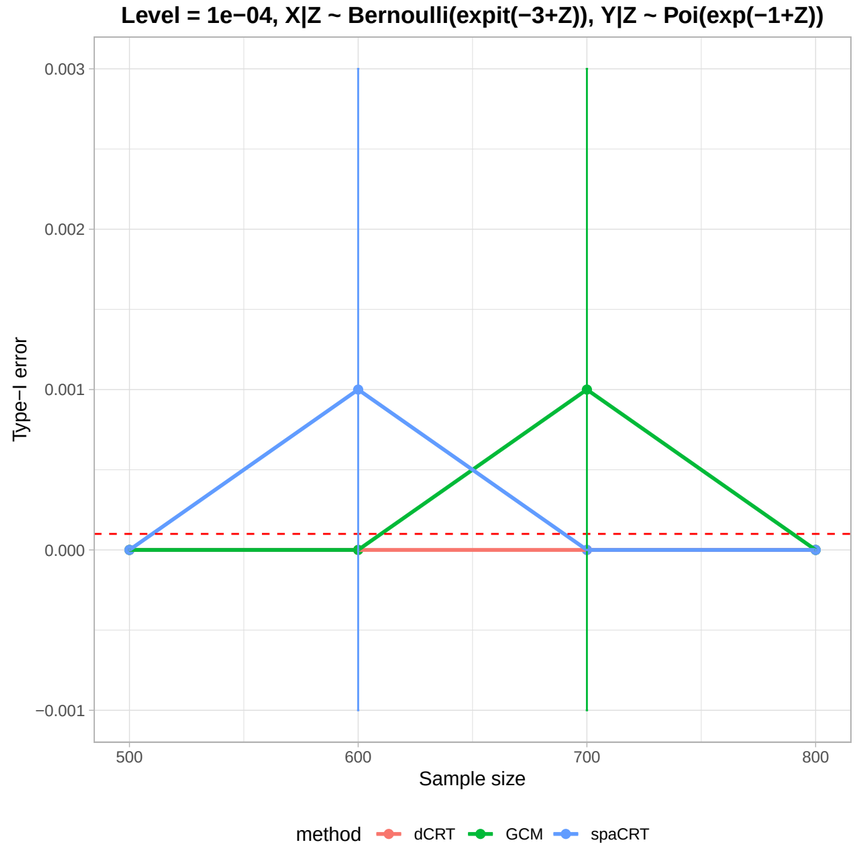

Level = 0.01, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.06
0.04
0.02
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

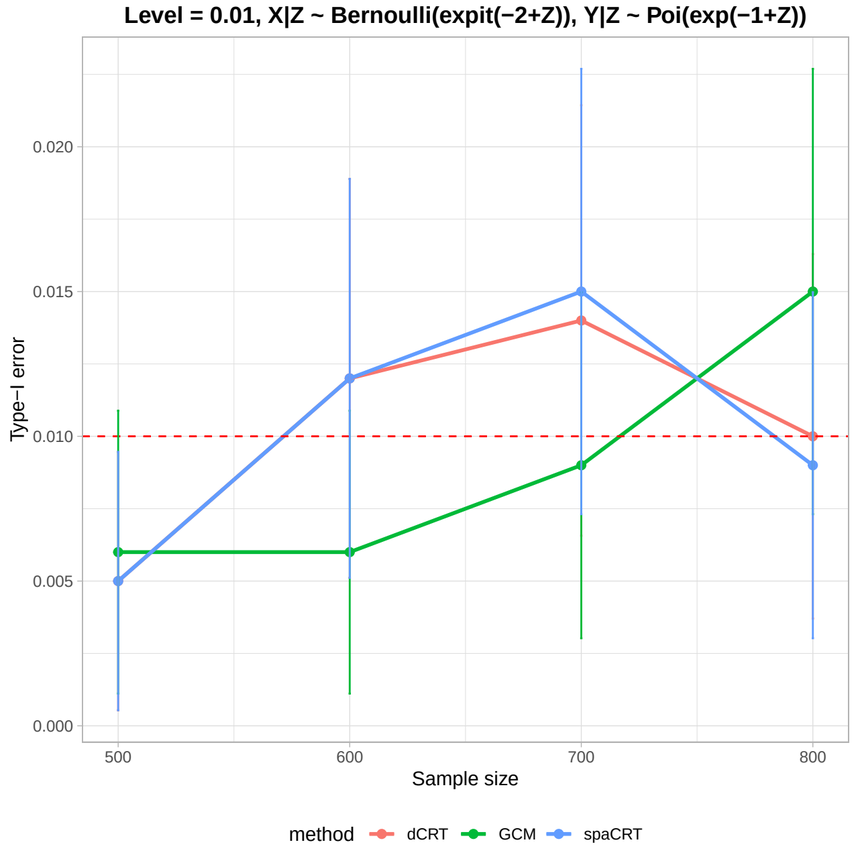

Level = 0.001, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.04
0.03
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

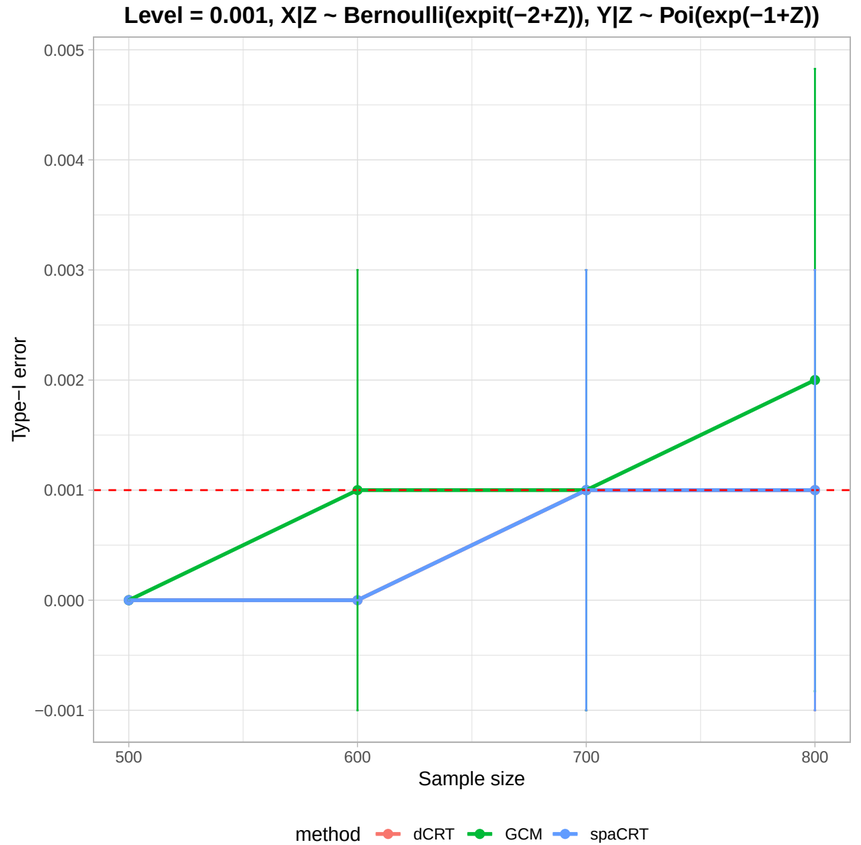

Level = 1e−04, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−2+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

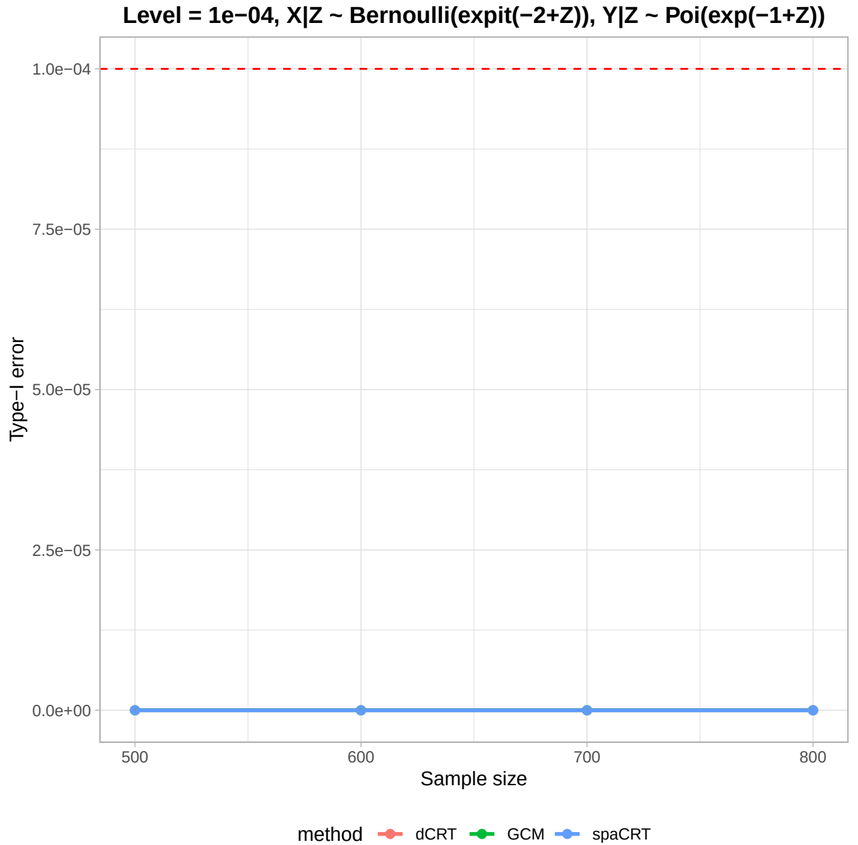

Level = 0.01, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

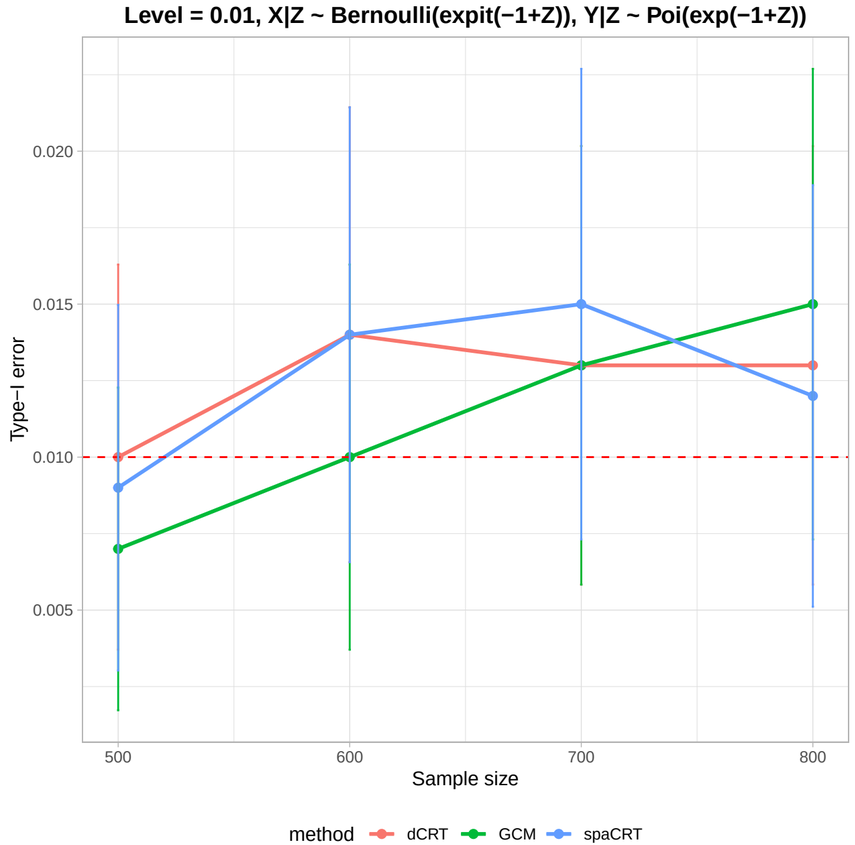

Level = 0.001, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.0075
0.0050
0.0025
0.0000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

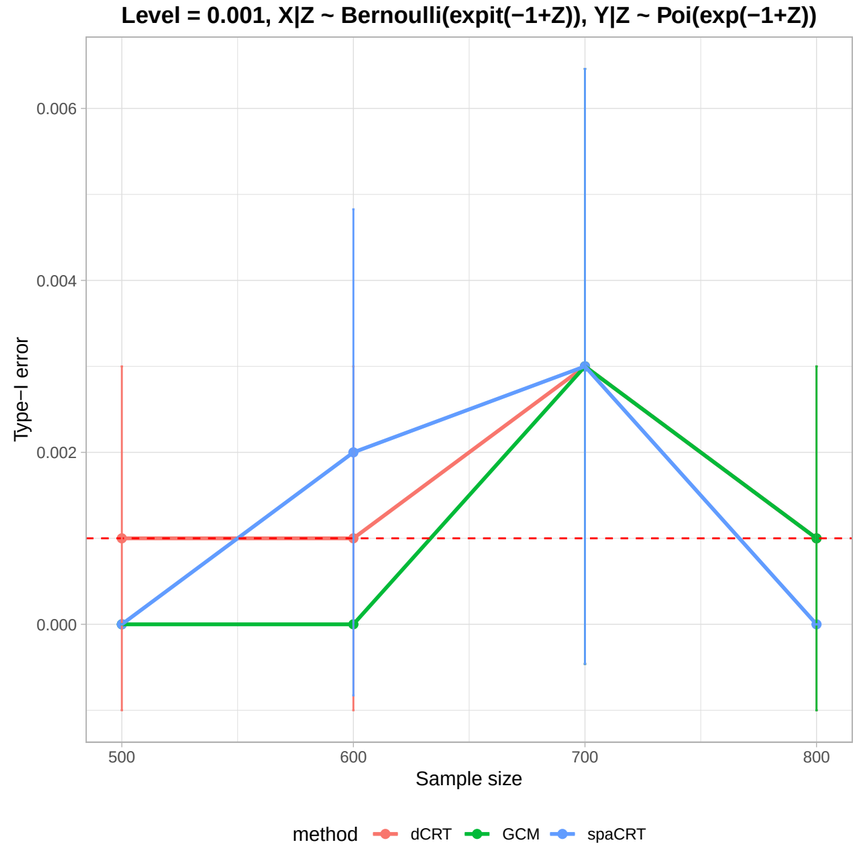

Level = 1e−04, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

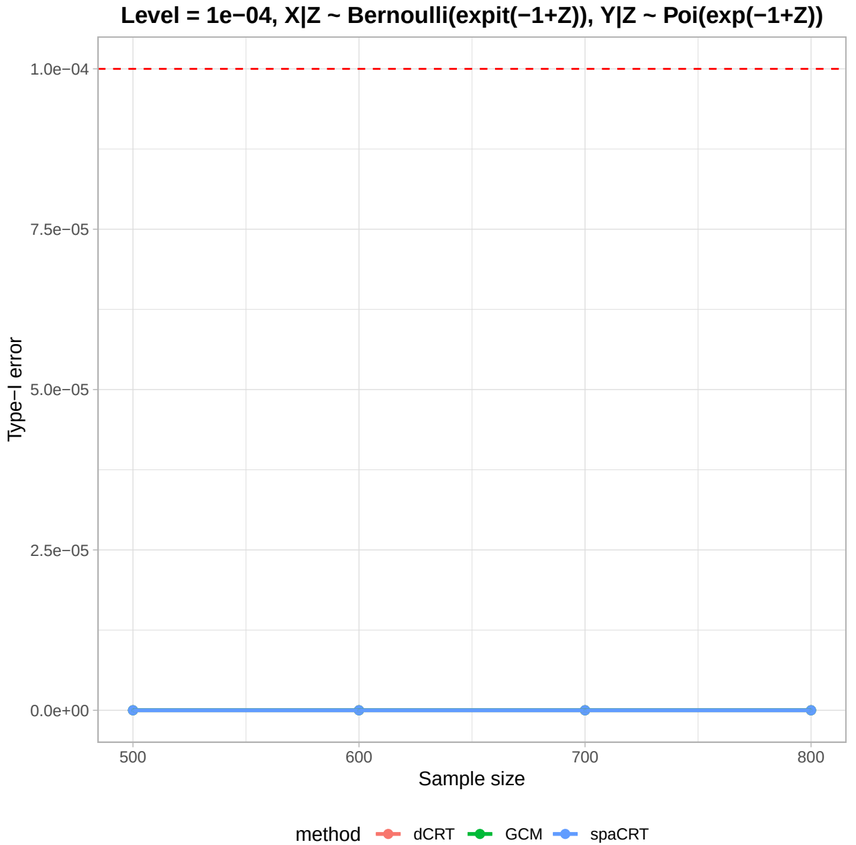

Level = 0.01, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

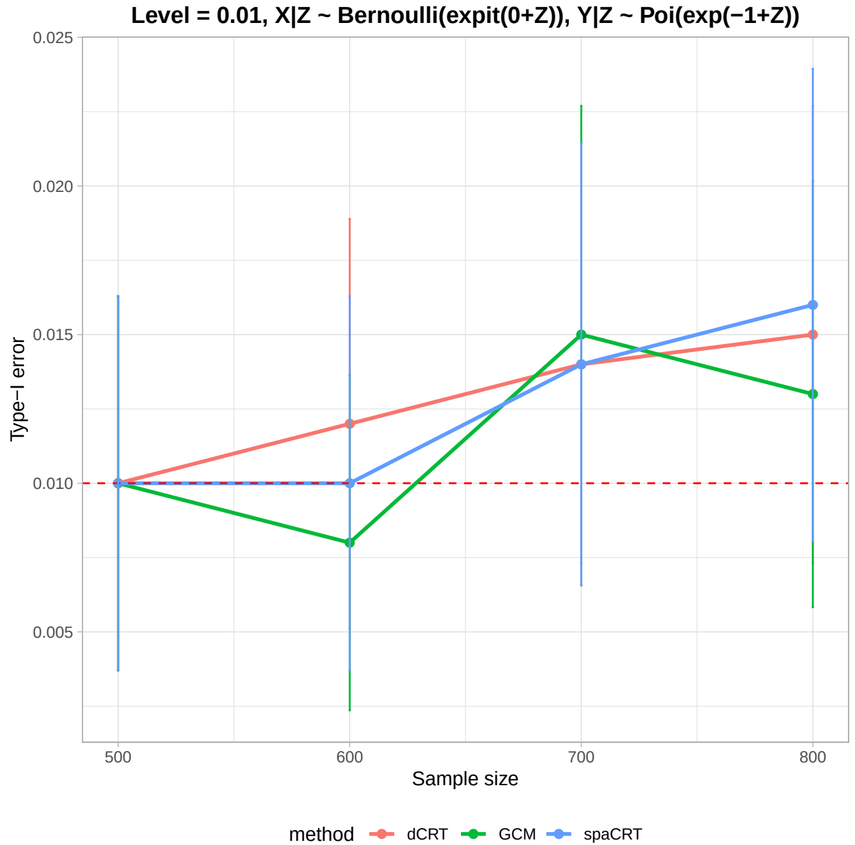

Level = 0.001, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

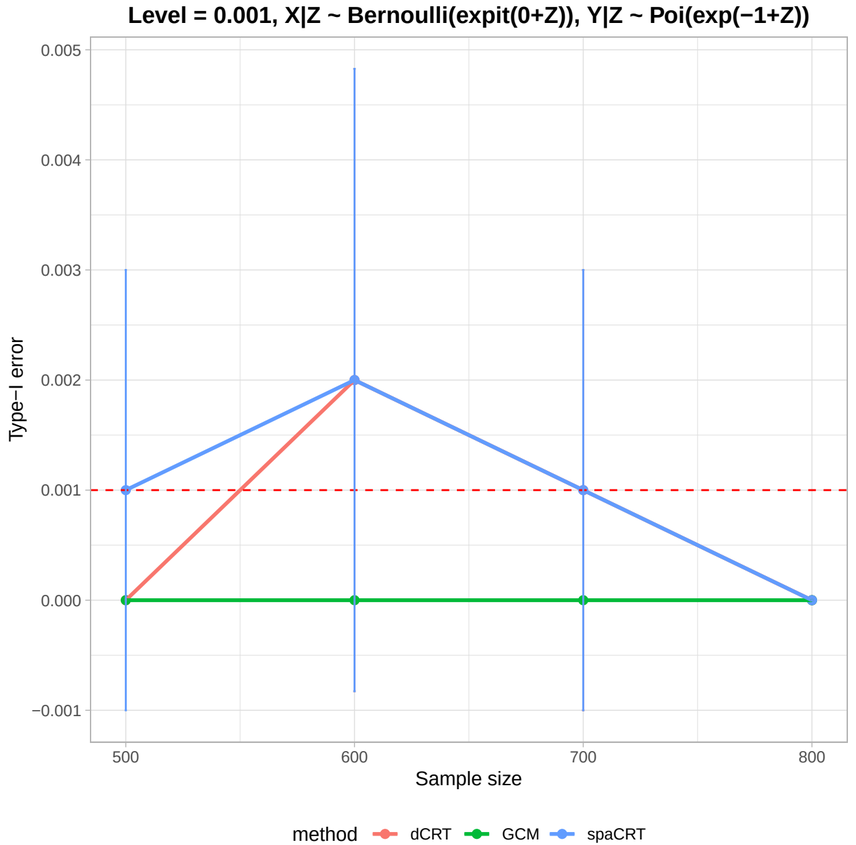

Level = 1e−04, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

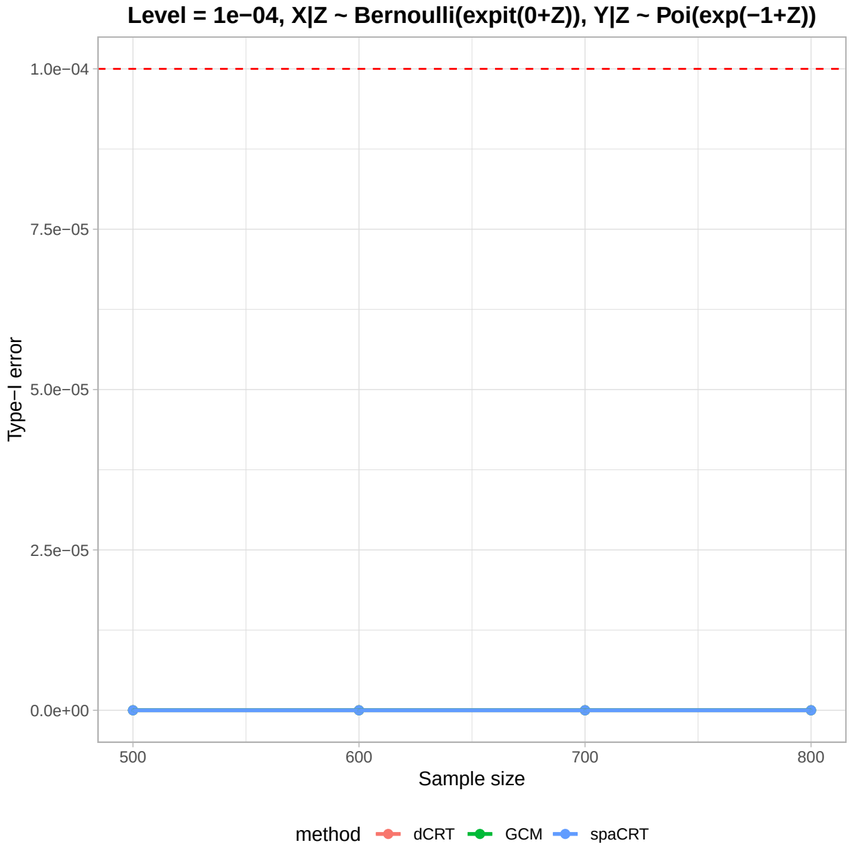

Level = 0.01, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

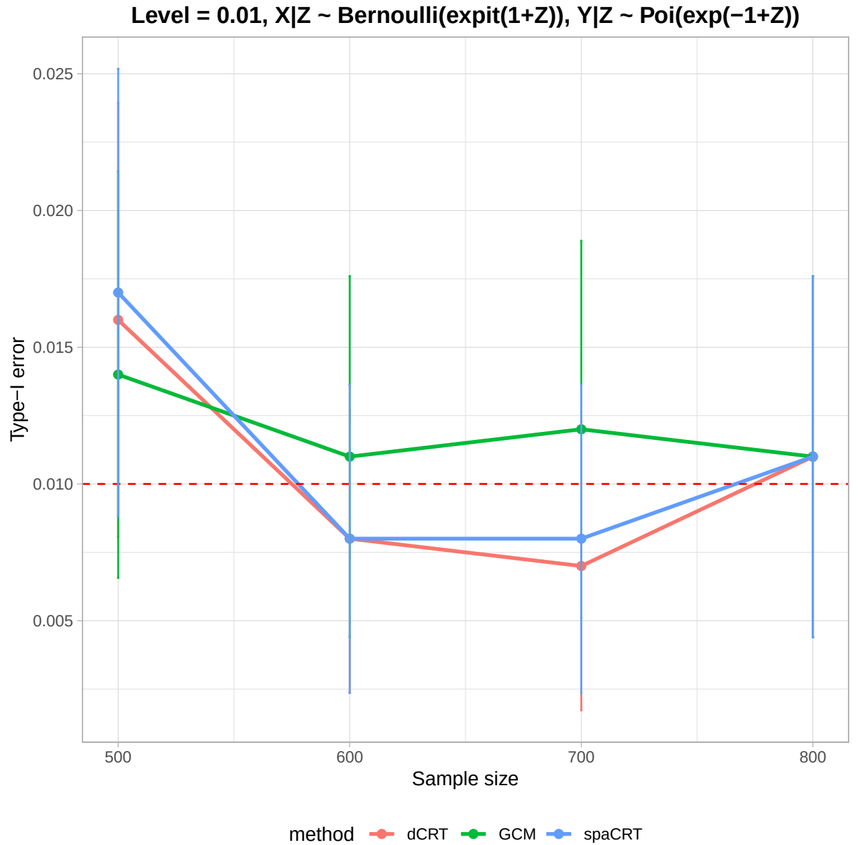

Level = 0.001, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

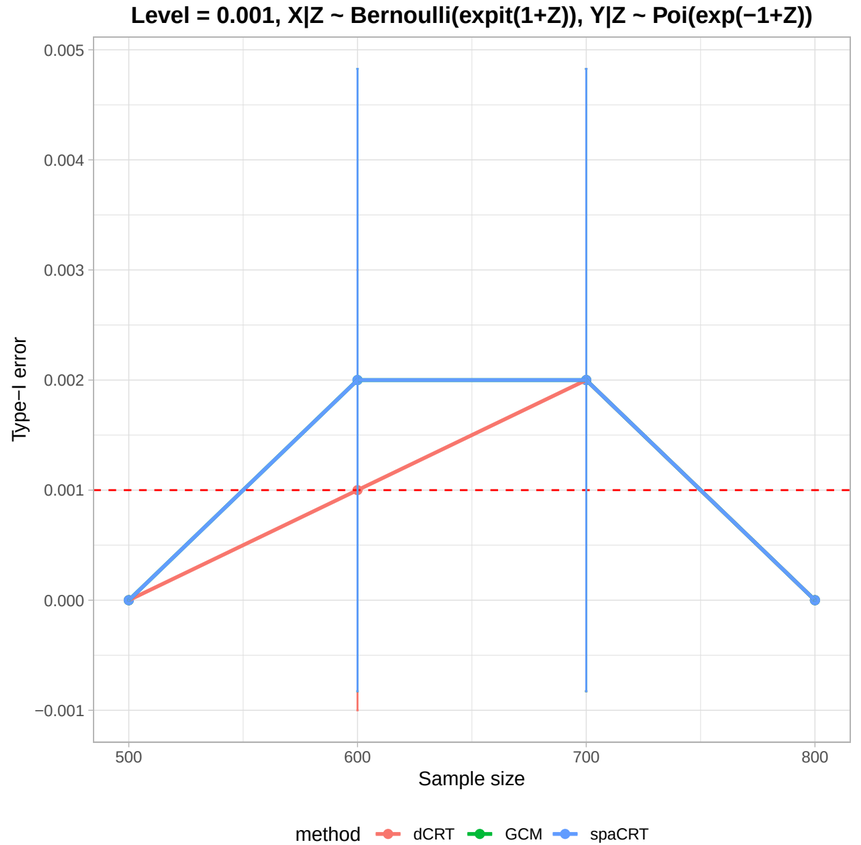

Level = 1e−04, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

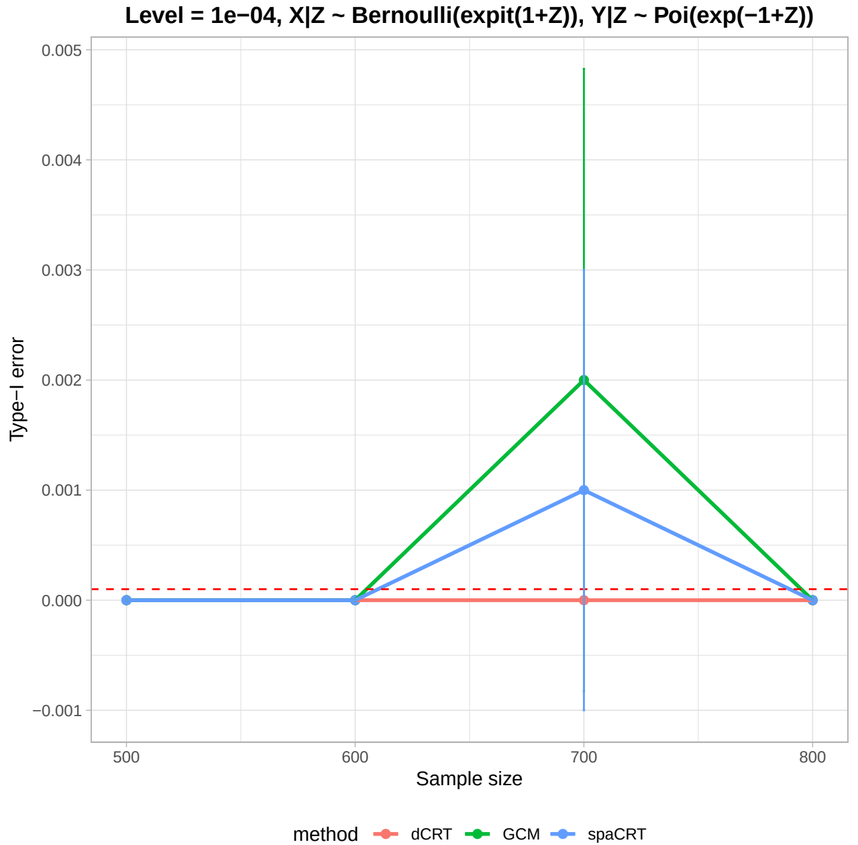

Level = 0.01, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.025
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

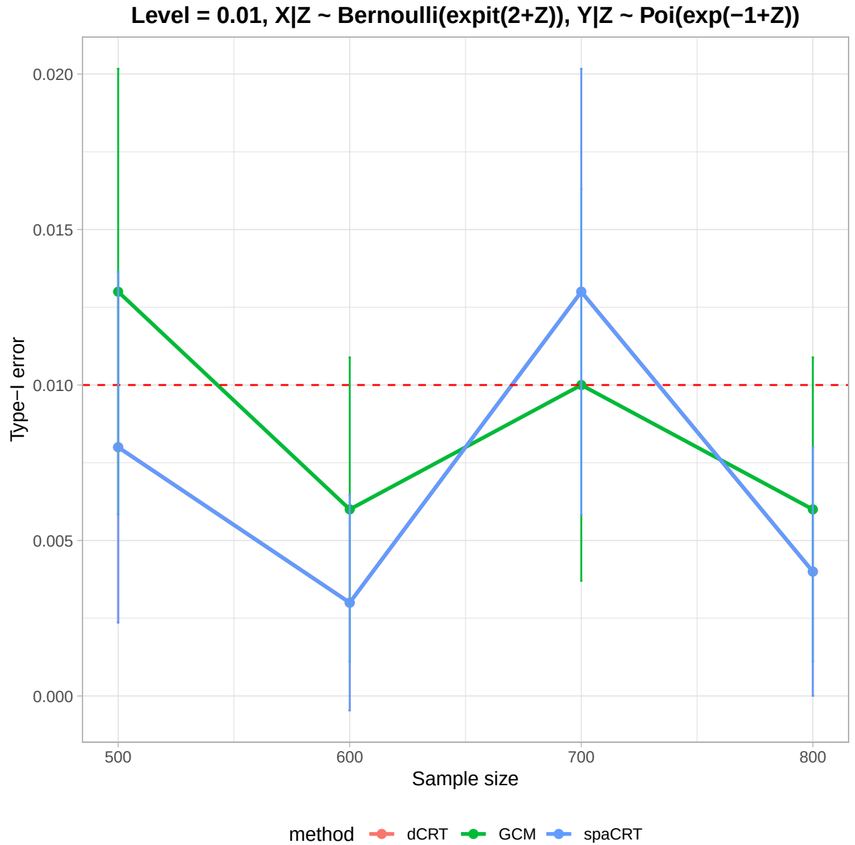

Level = 0.001, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

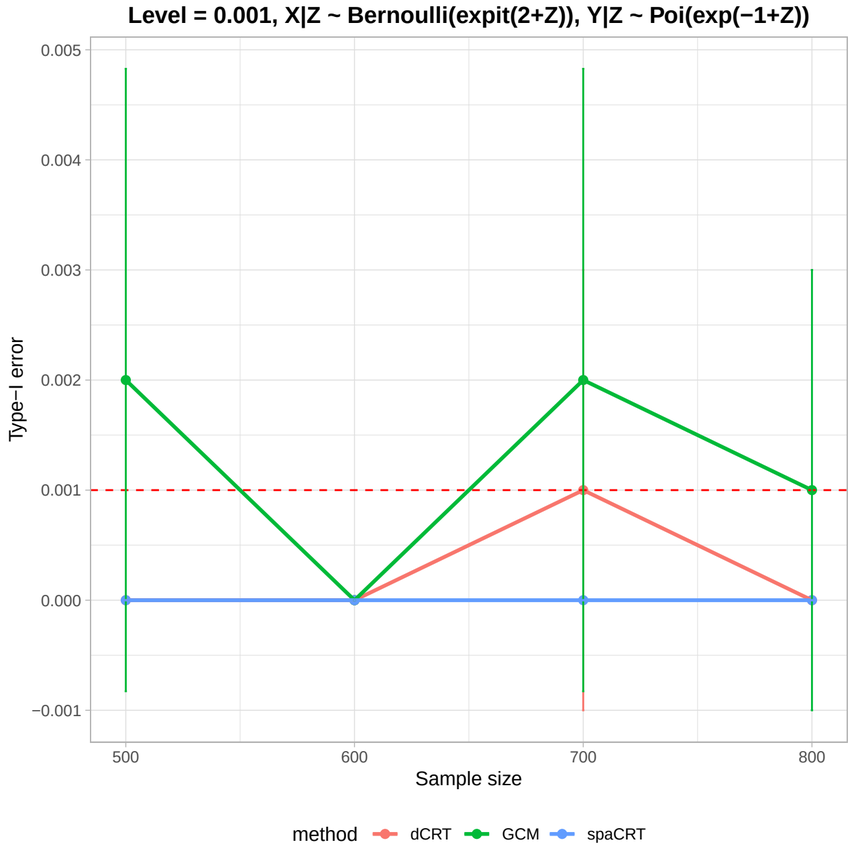

Level = 1e−04, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

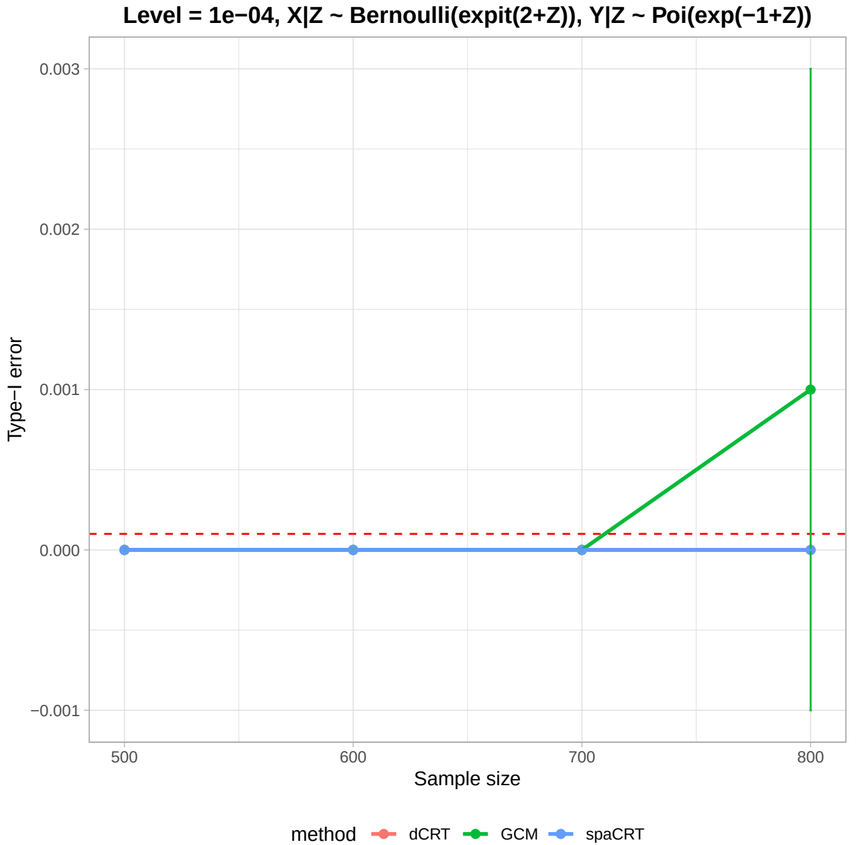

Level = 0.01, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.025
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

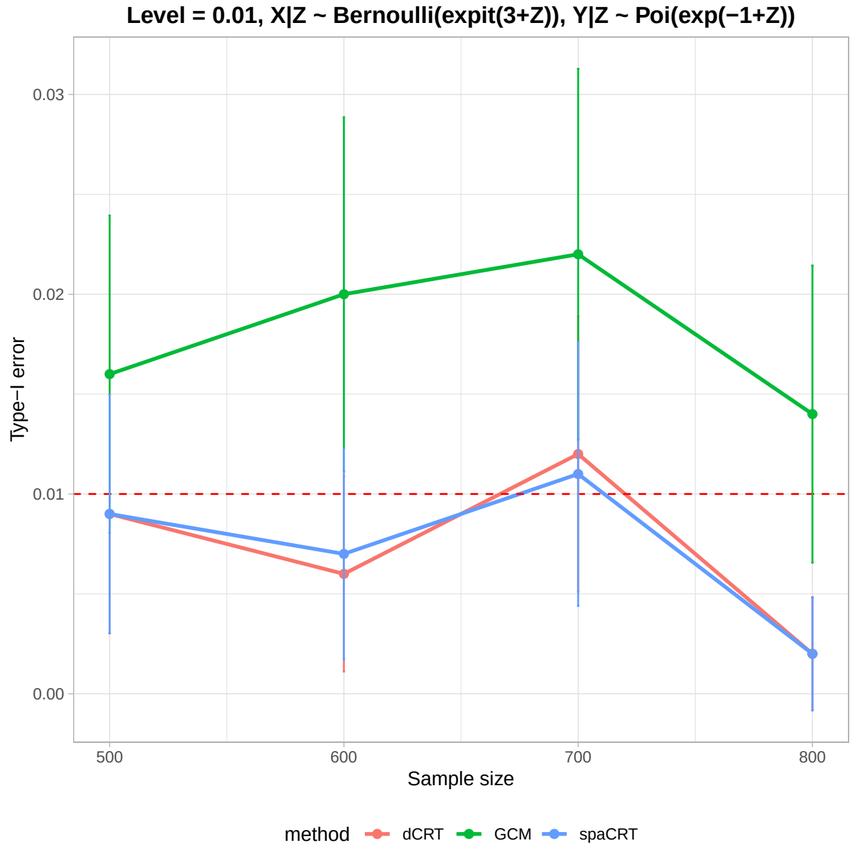

Level = 0.001, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

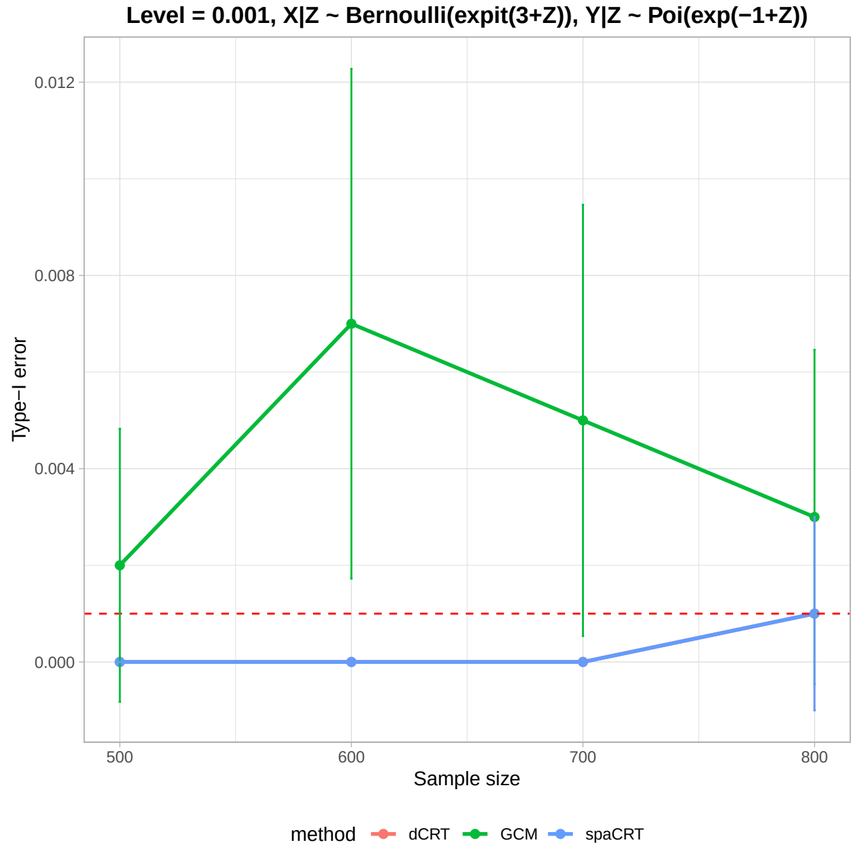

Level = 1e−04, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

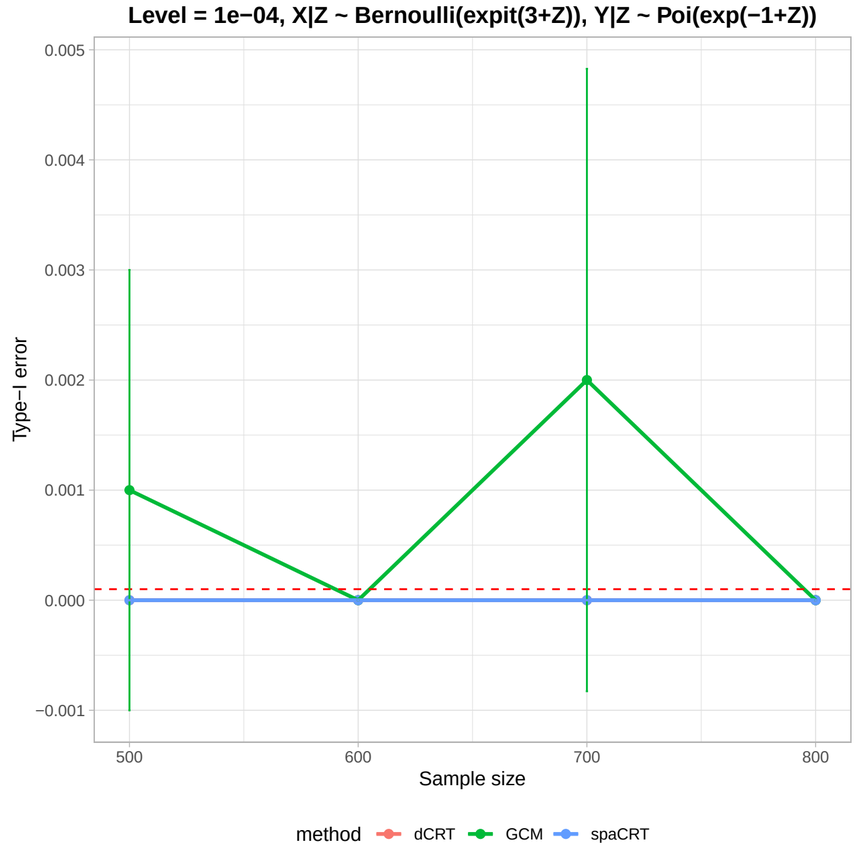

Level = 0.01, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

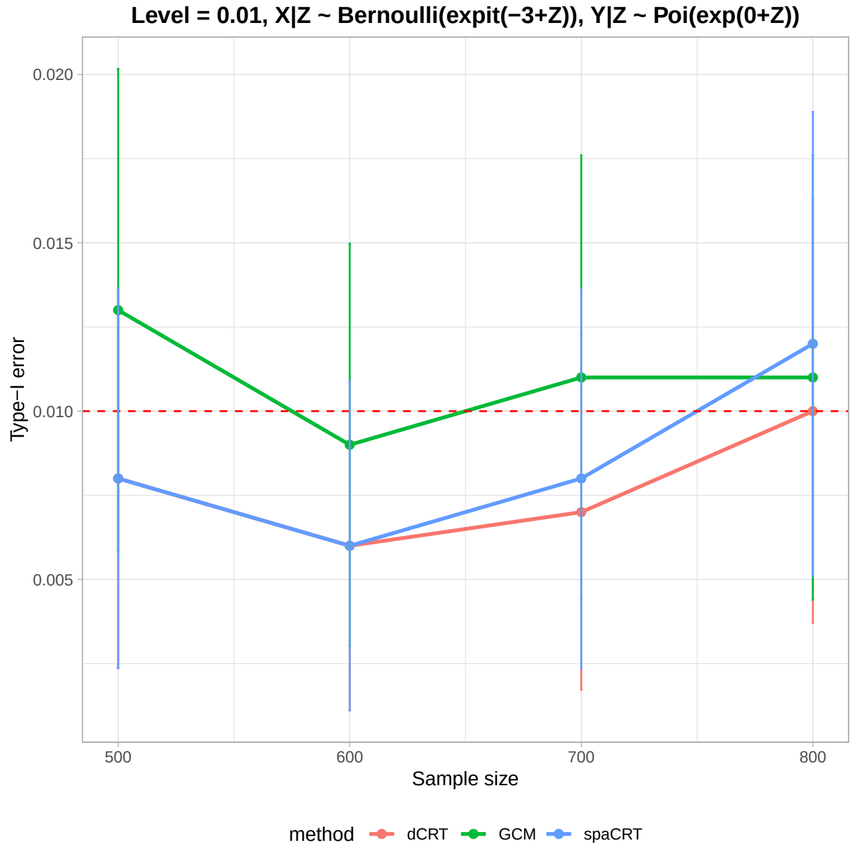

Level = 0.001, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

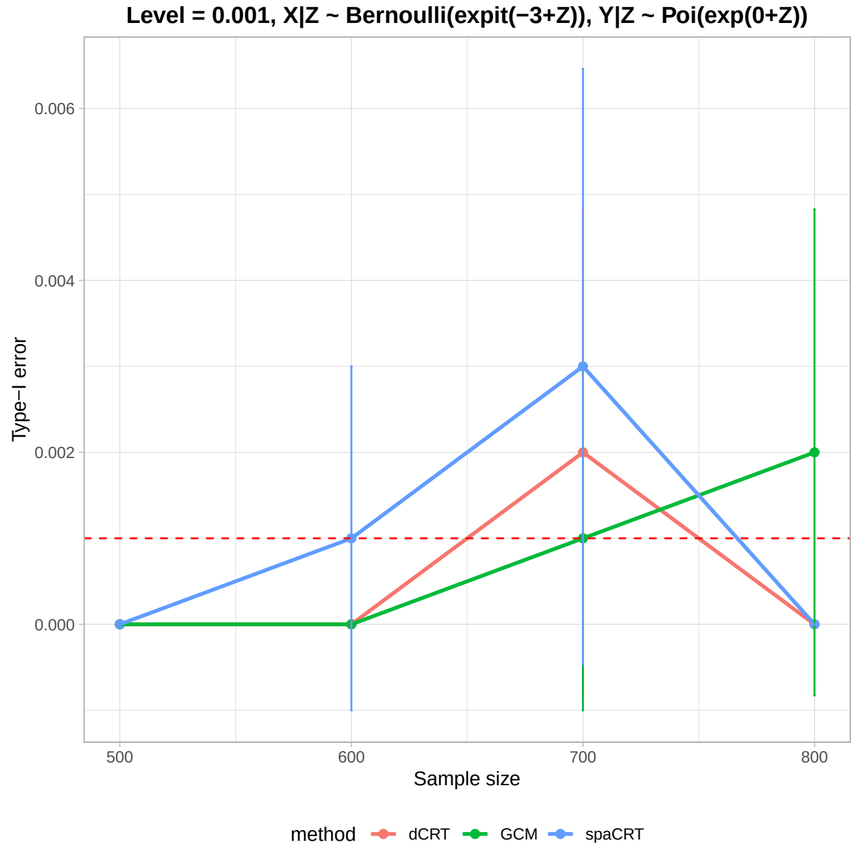

Level = 1e−04, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

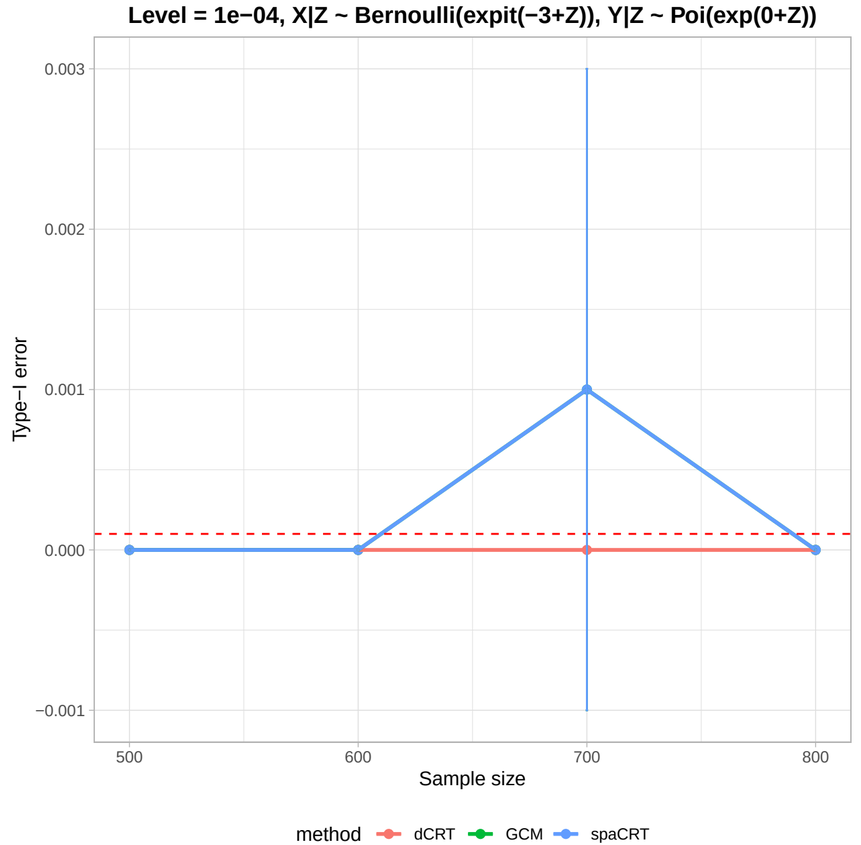

Level = 0.01, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.03
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

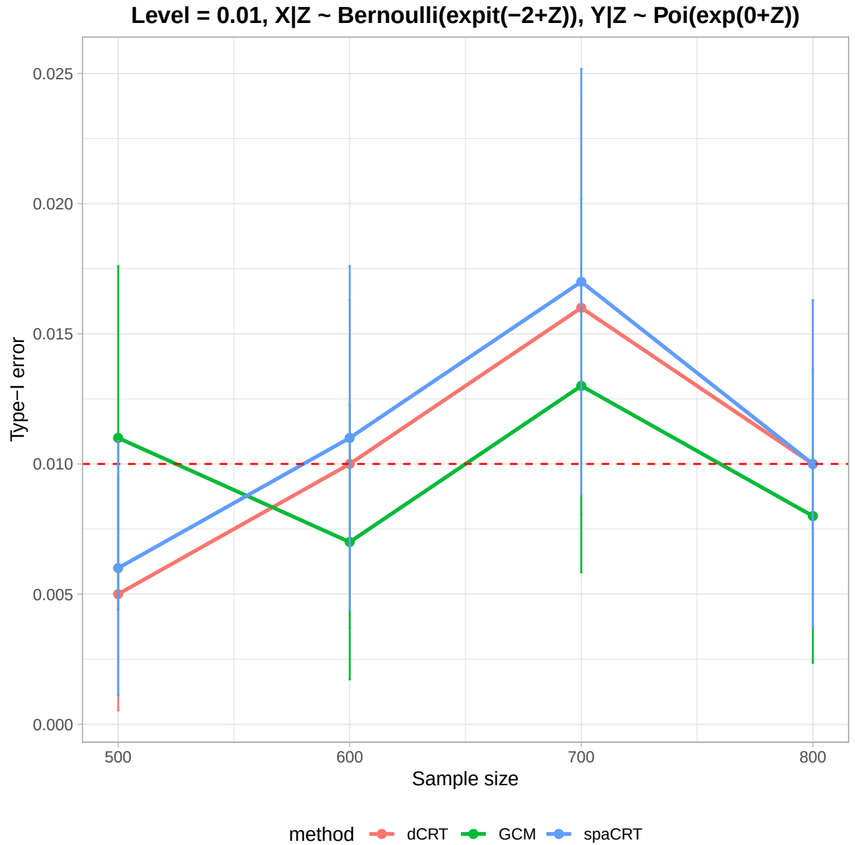

Level = 0.001, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.012
0.008
0.004
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

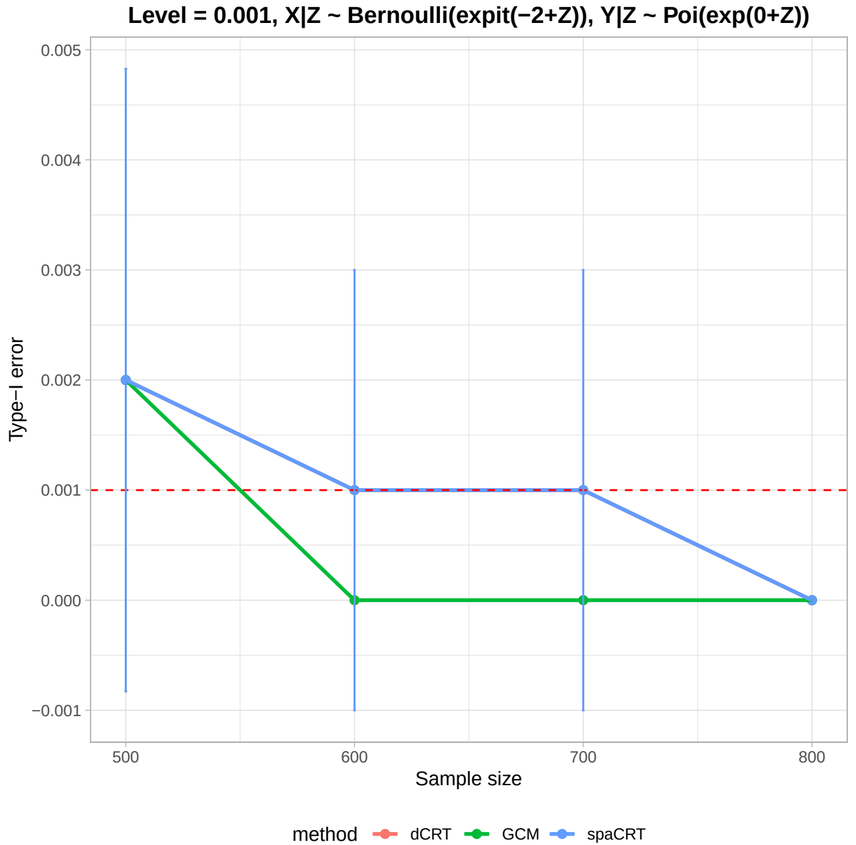

Level = 1e−04, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(−1+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

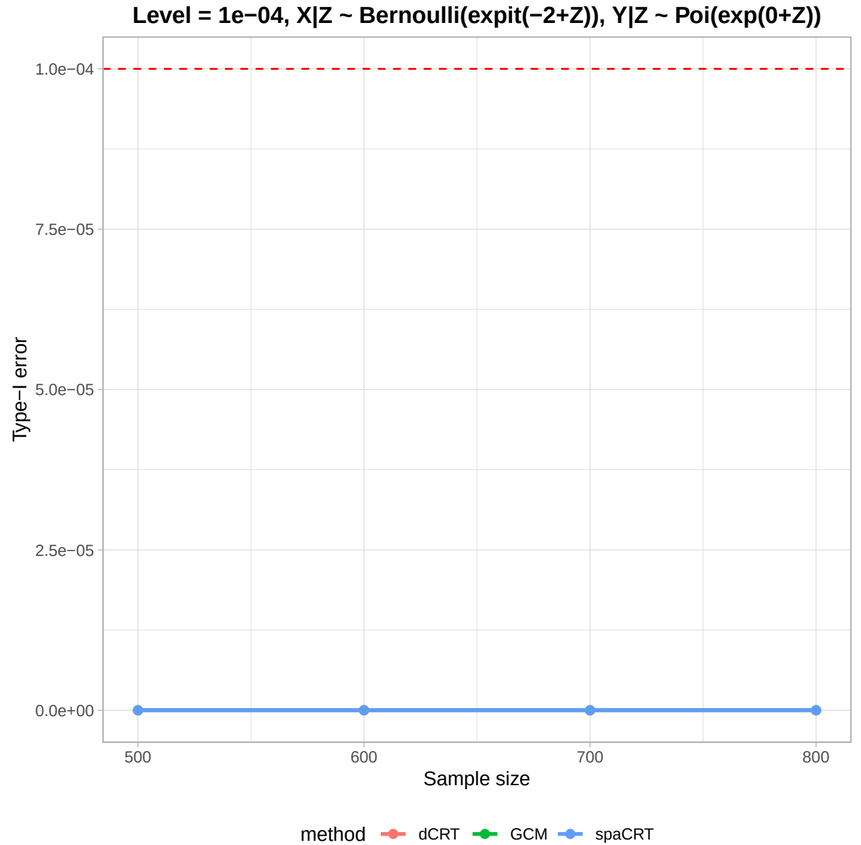

Level = 0.01, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

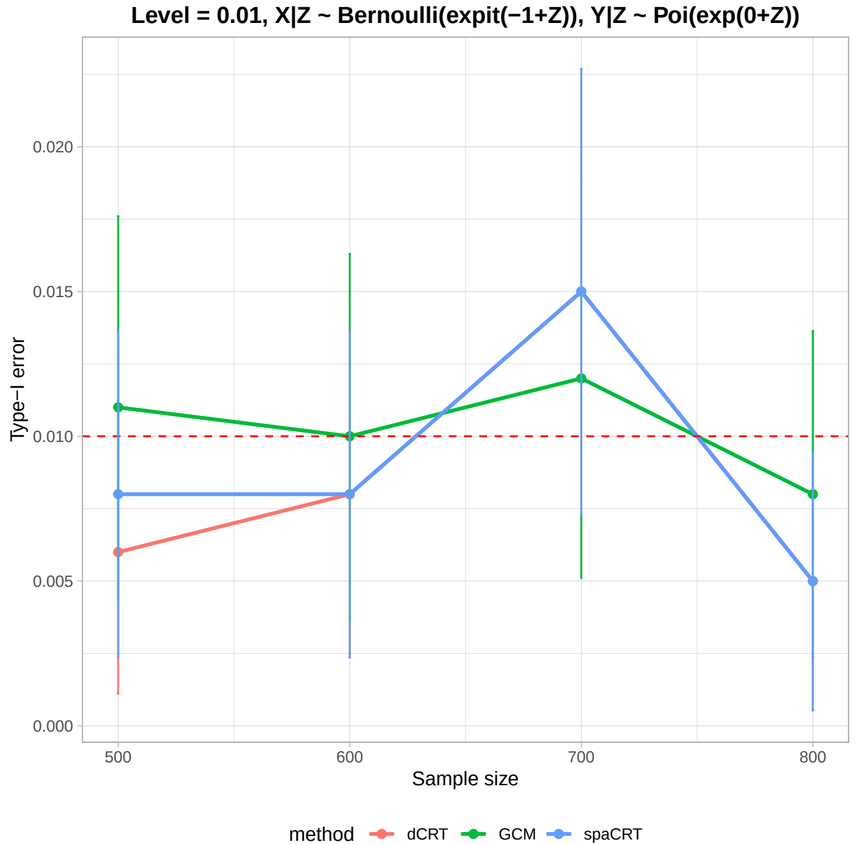

Level = 0.001, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

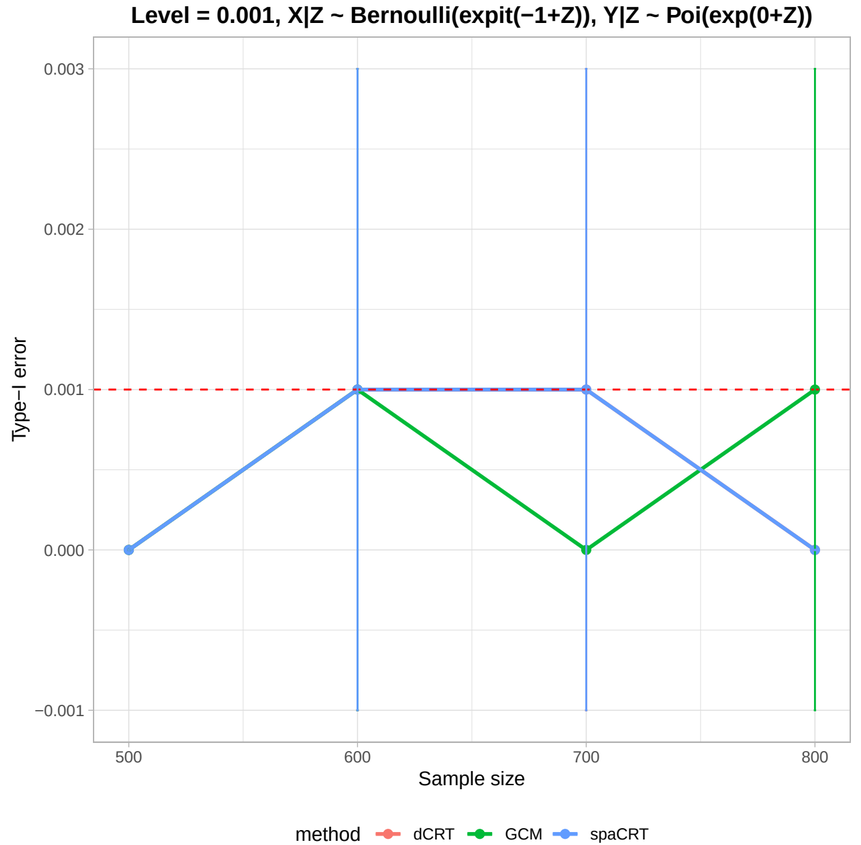

Level = 1e−04, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

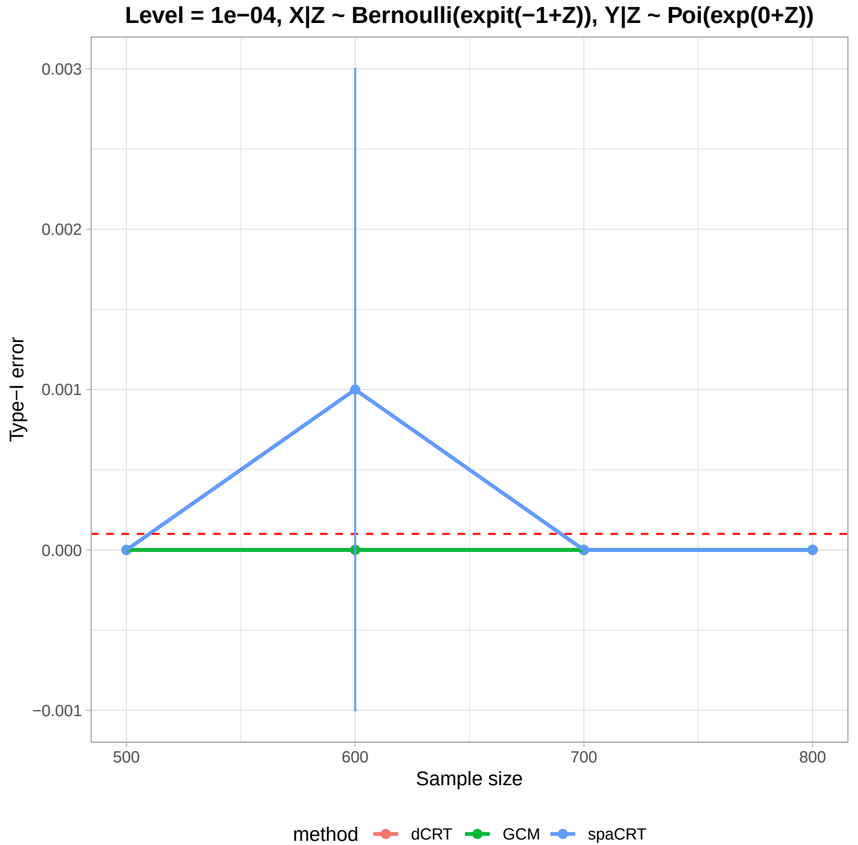

Level = 0.01, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.025
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

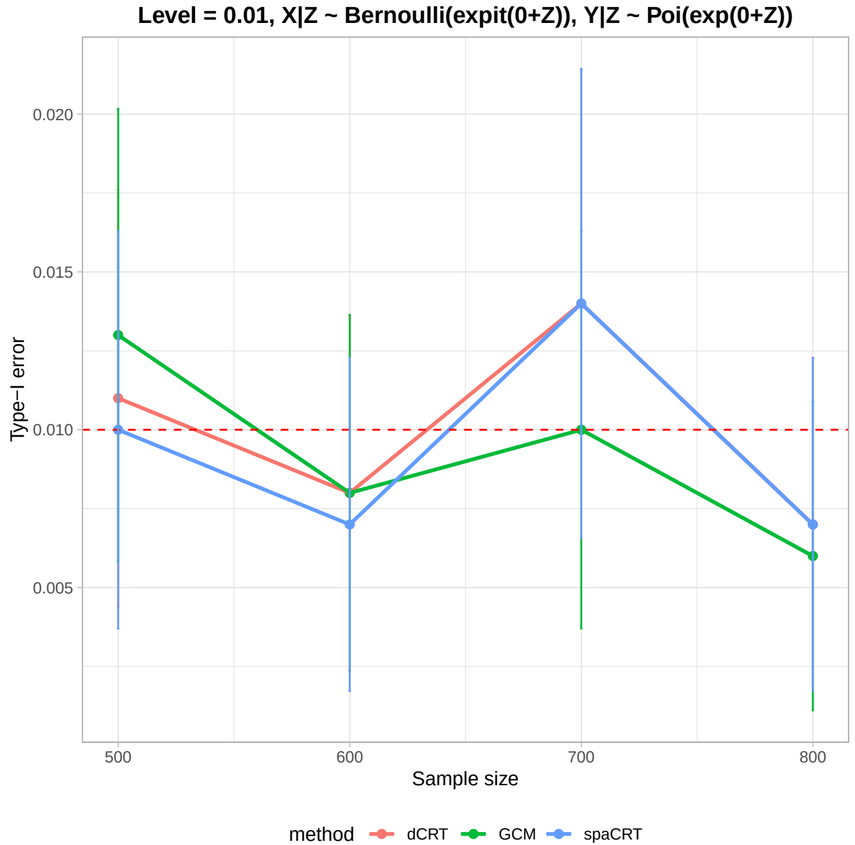

Level = 0.001, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

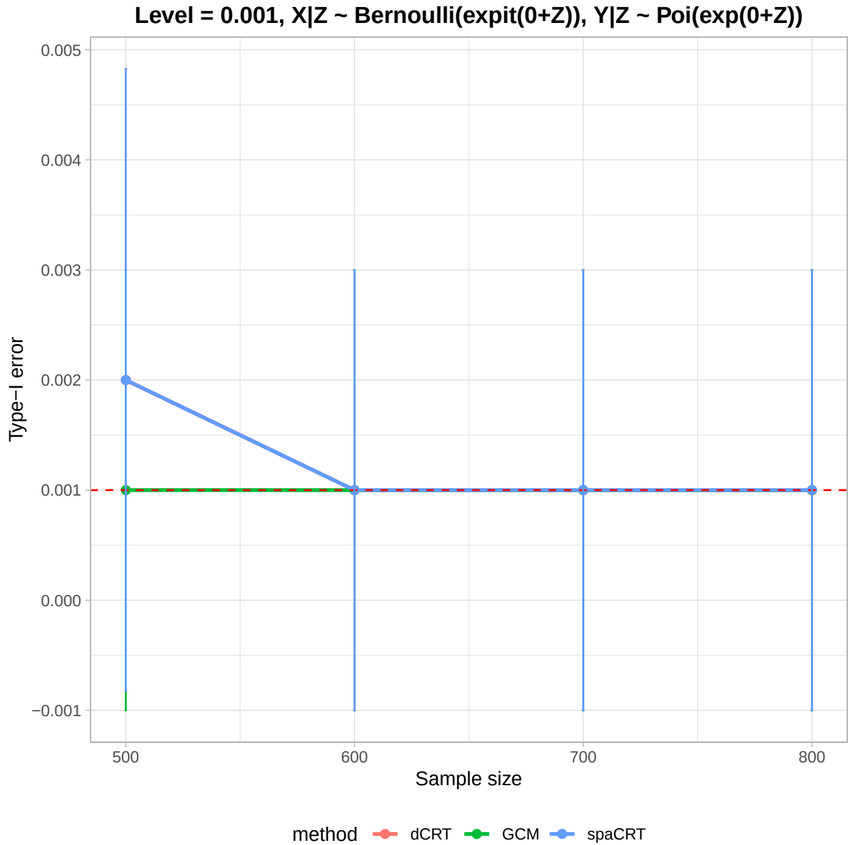

Level = 1e−04, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

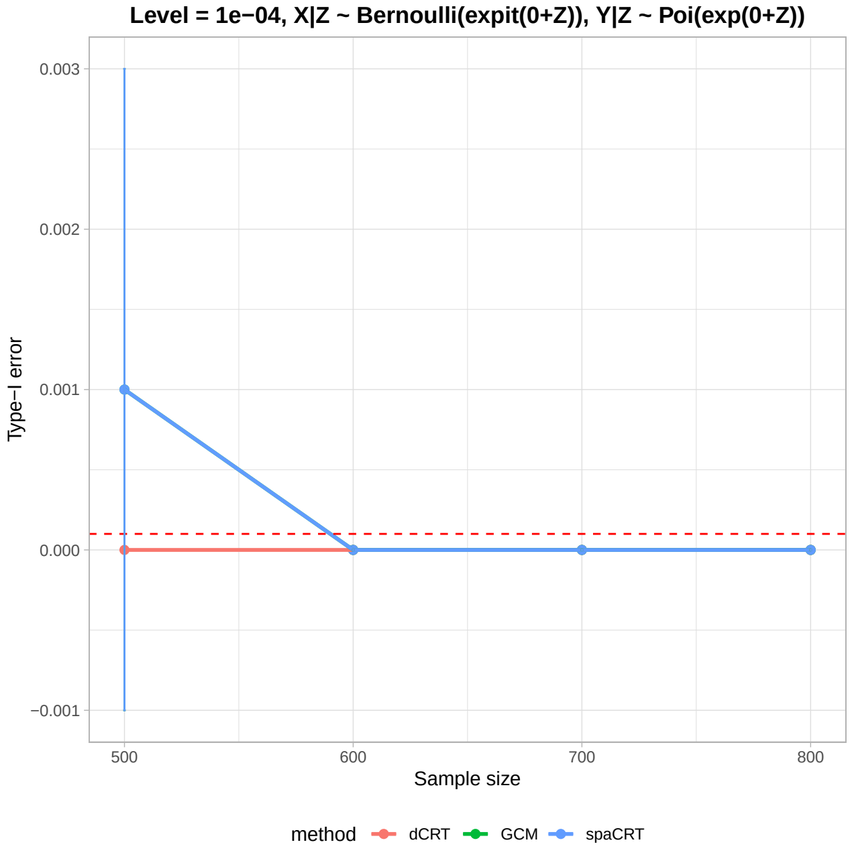

Level = 0.01, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

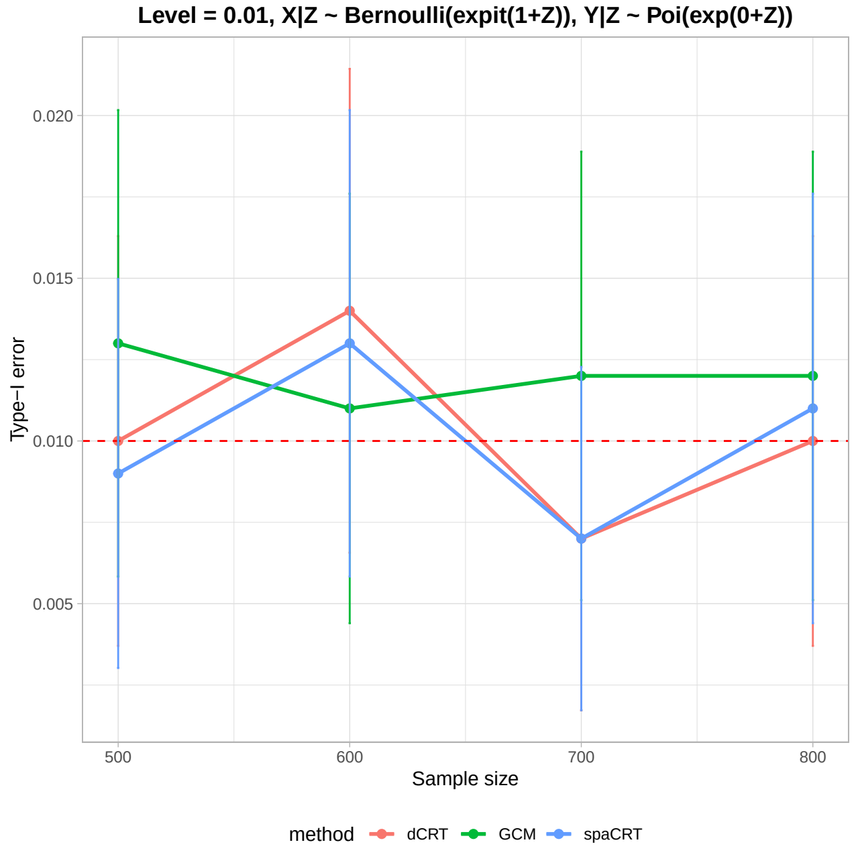

Level = 0.001, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

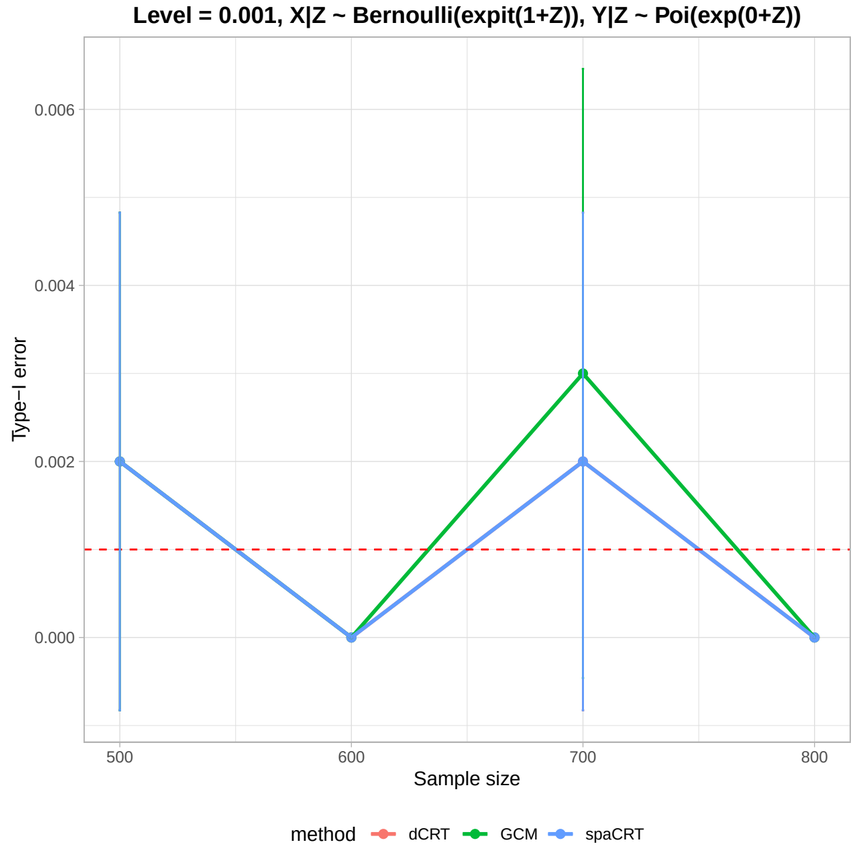

Level = 1e−04, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

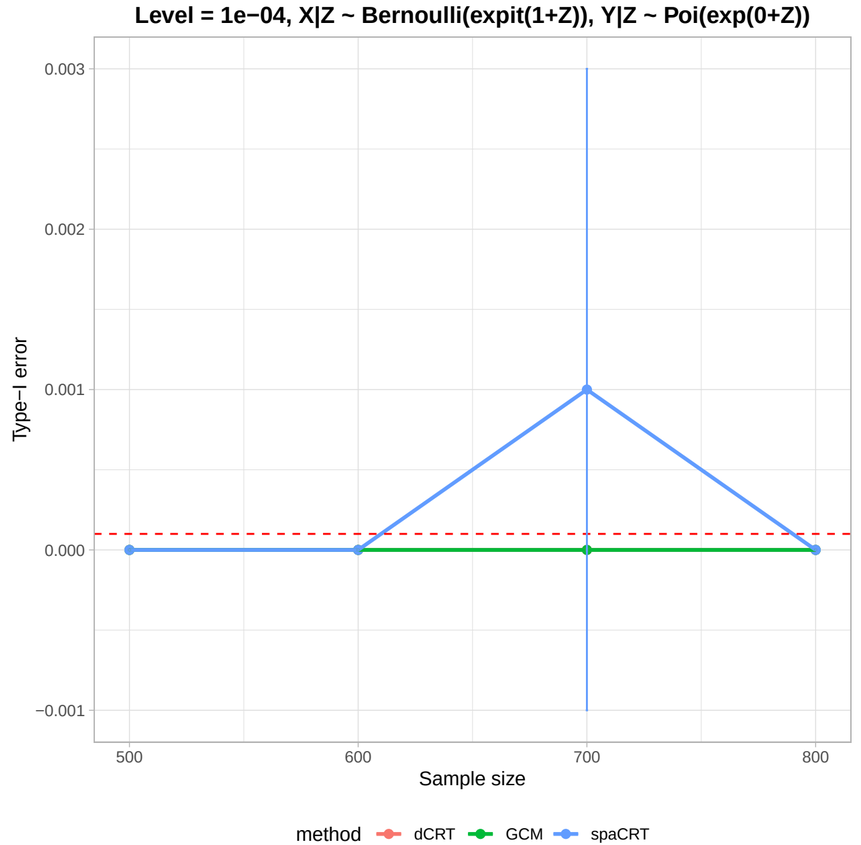

Level = 0.01, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

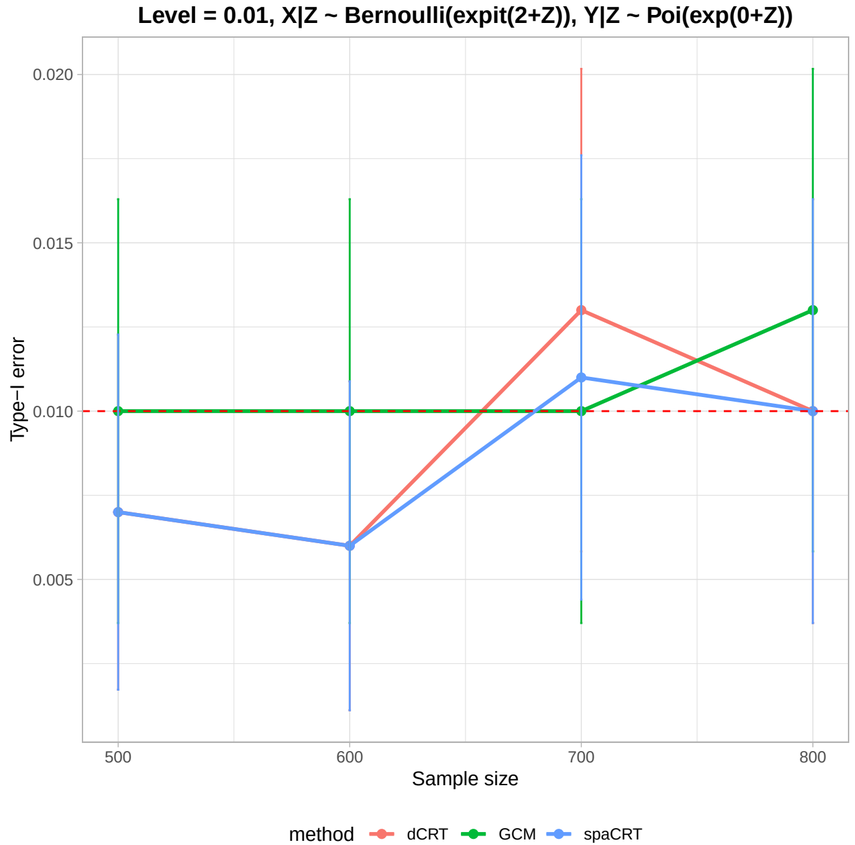

Level = 0.001, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

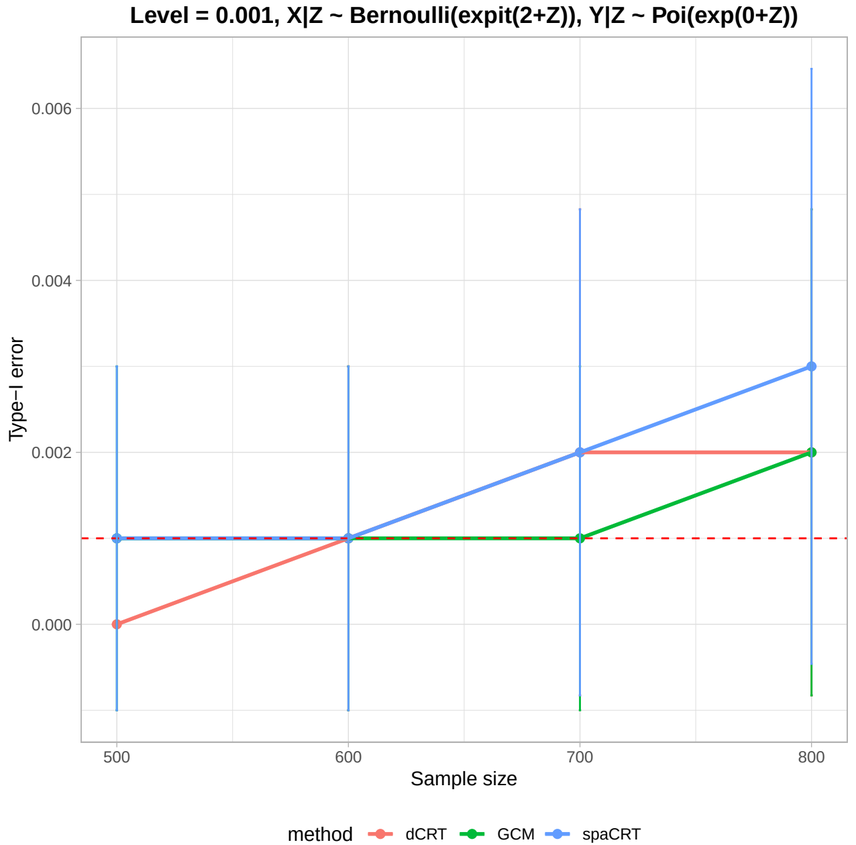

Level = 1e−04, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

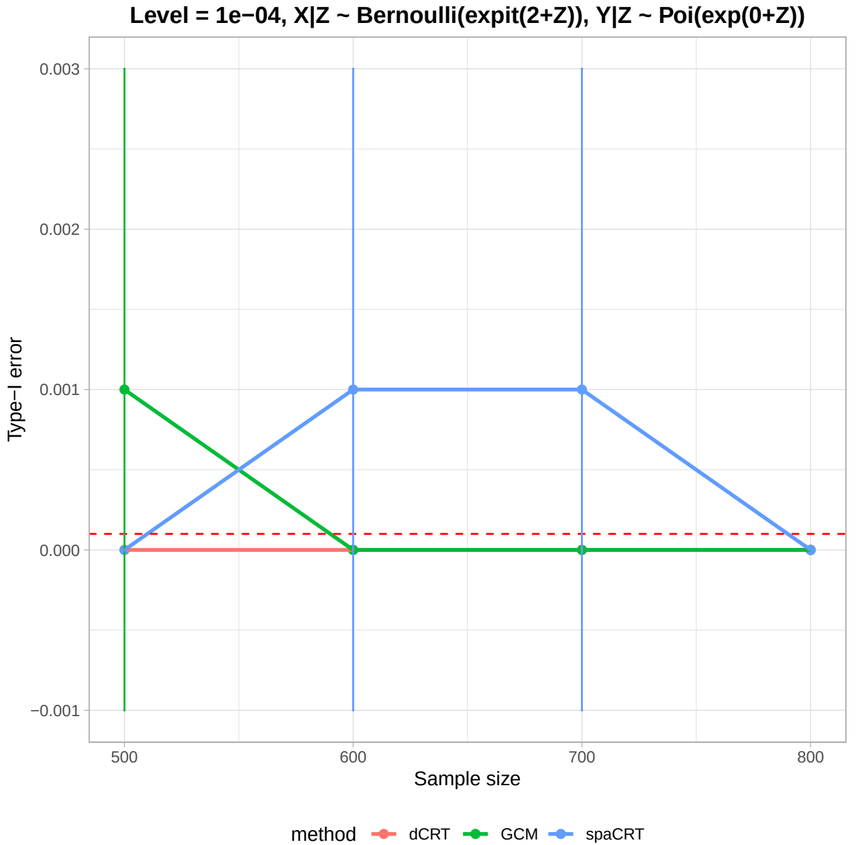

Level = 0.01, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

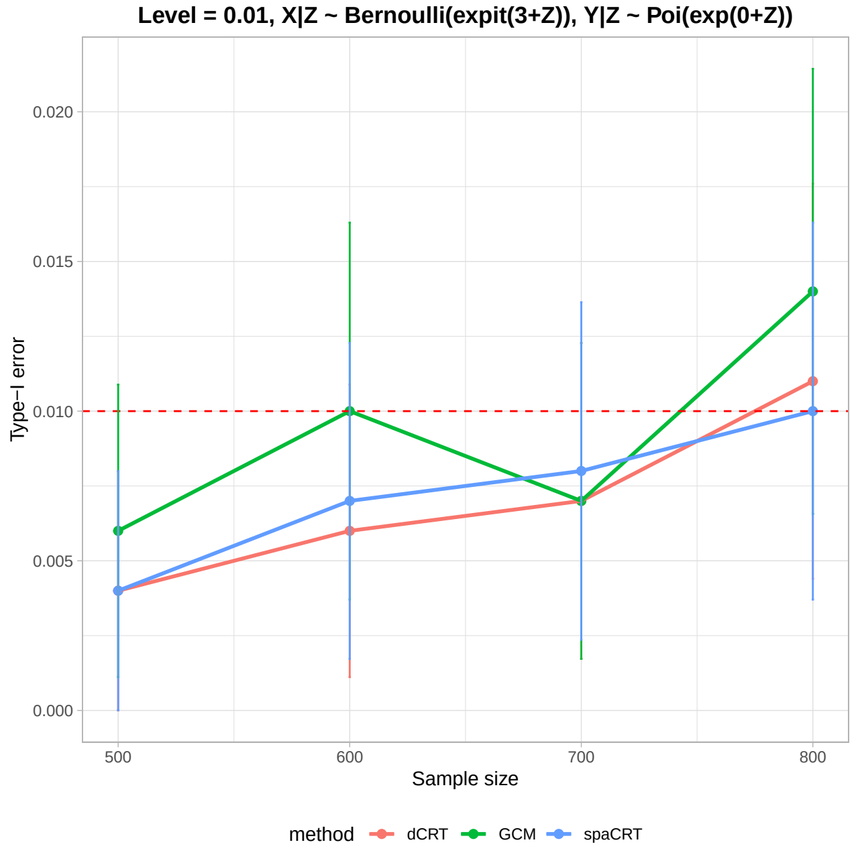

Level = 0.001, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

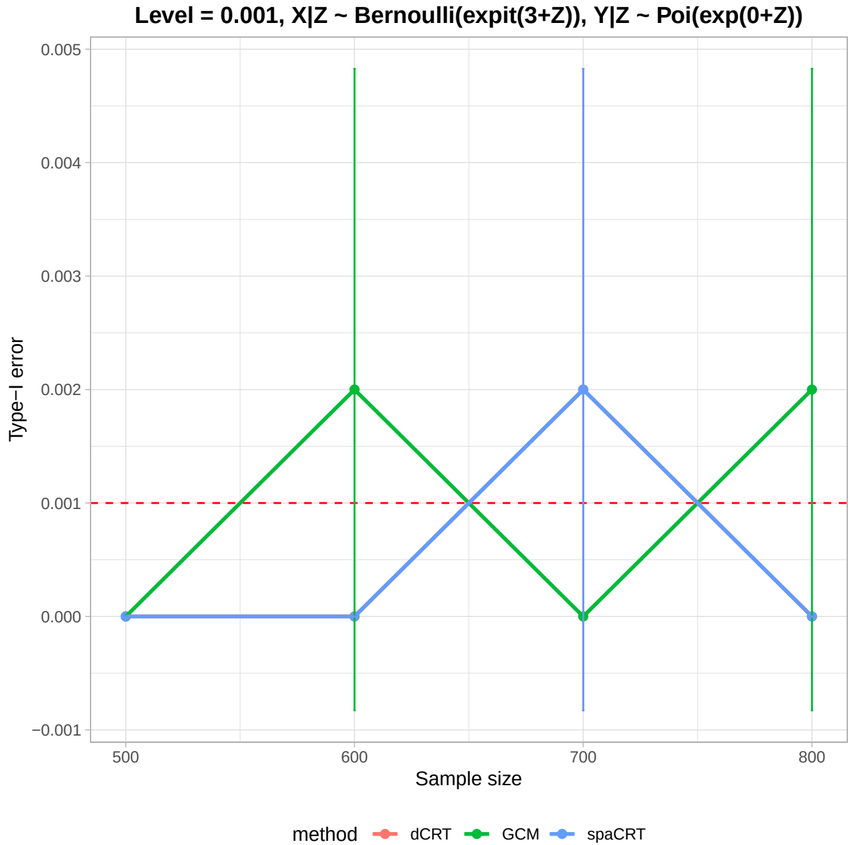

Level = 1e−04, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

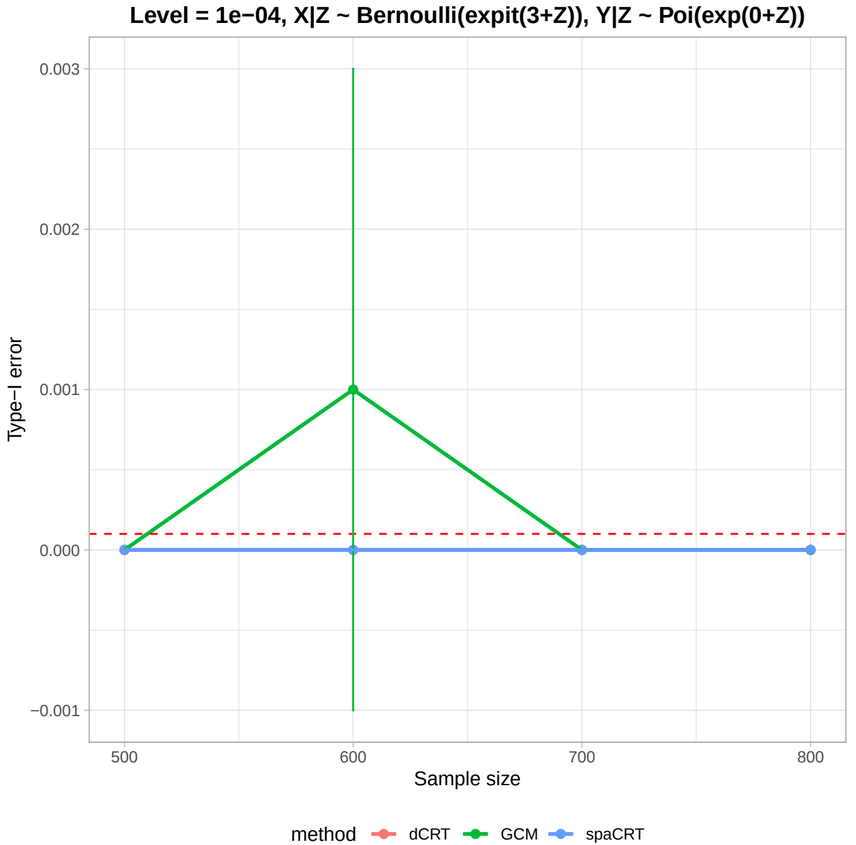

Level = 0.01, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

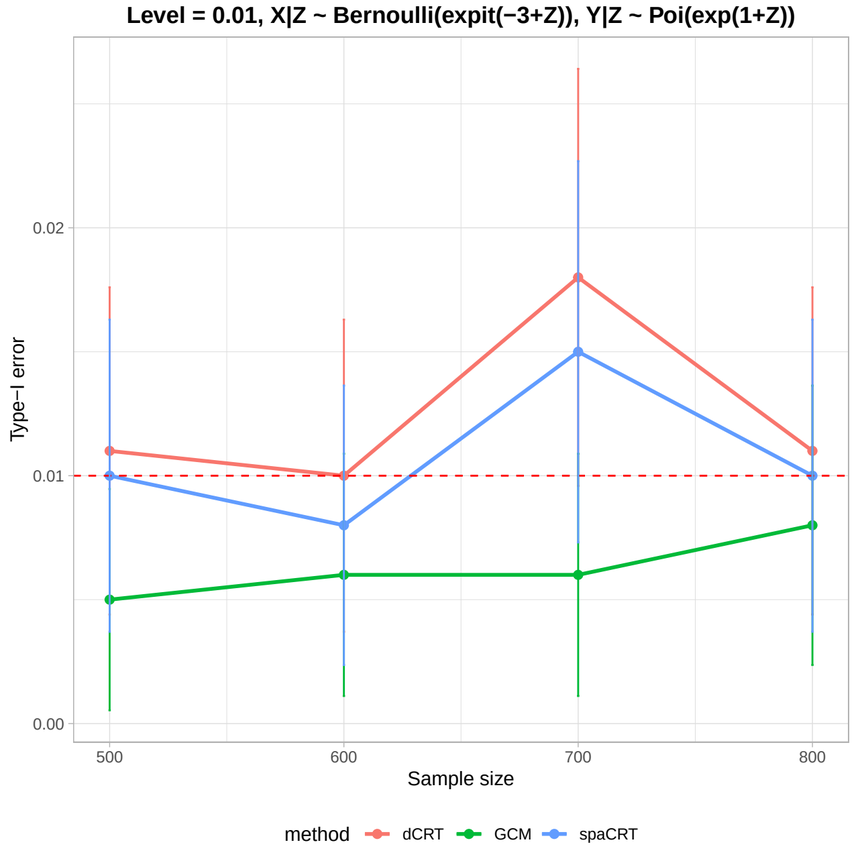

Level = 0.001, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

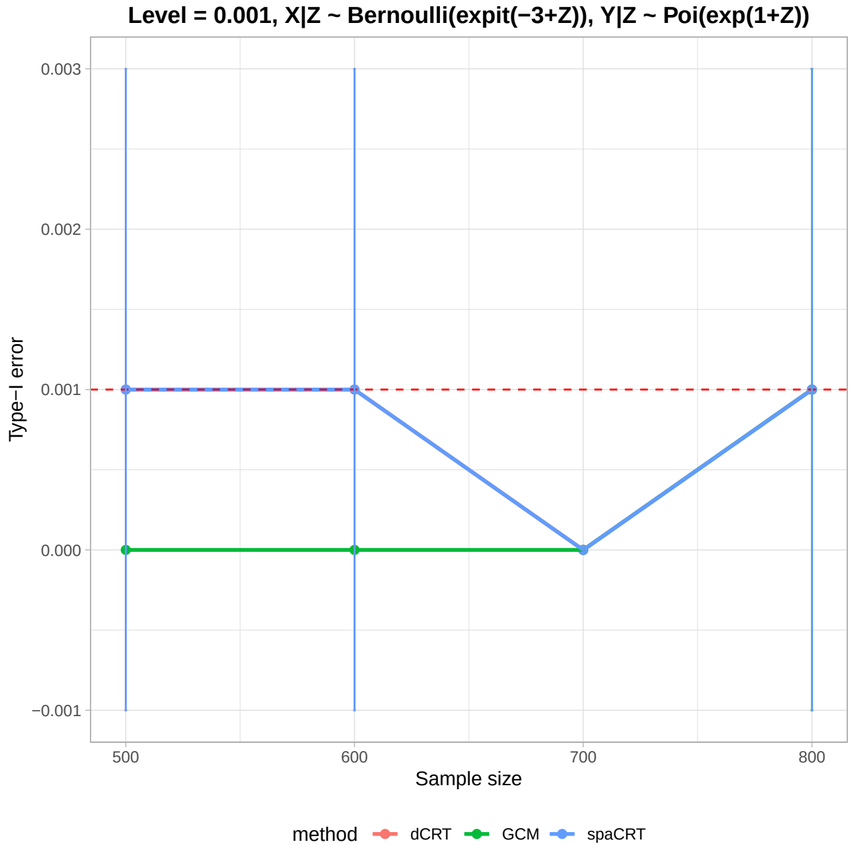

Level = 1e−04, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

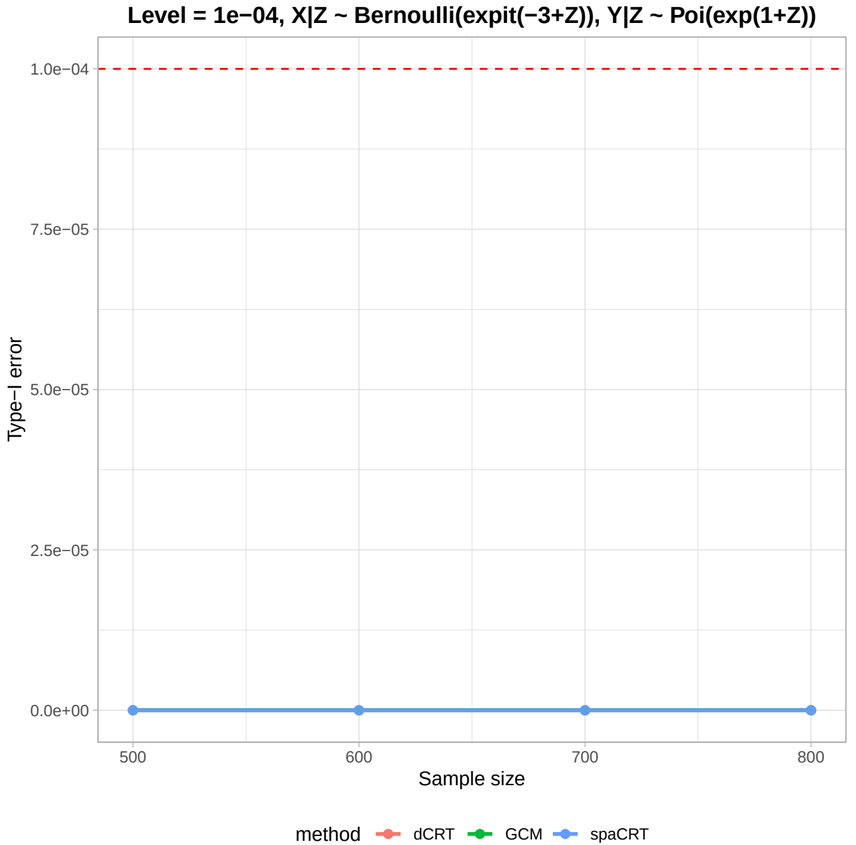

Level = 0.01, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

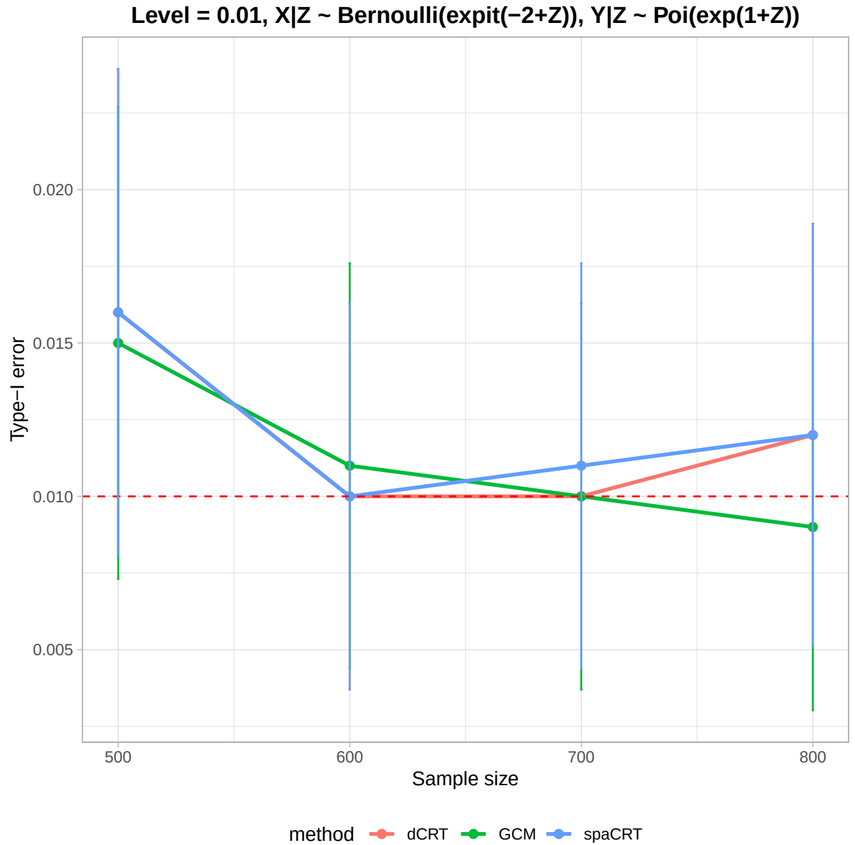

Level = 0.001, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

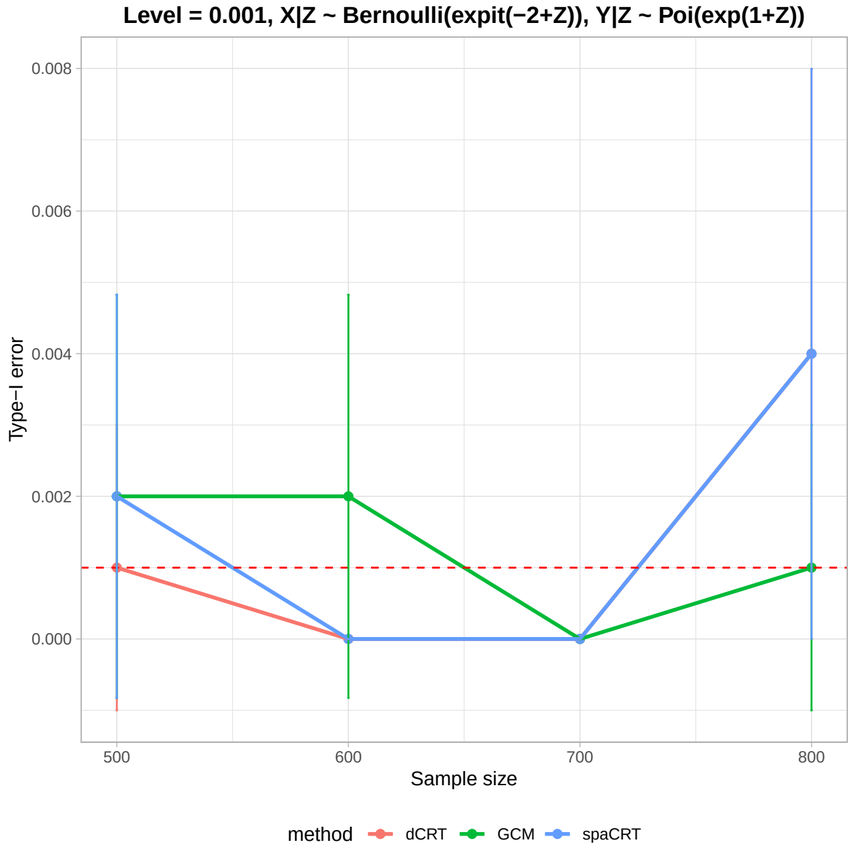

Level = 1e−04, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(0+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

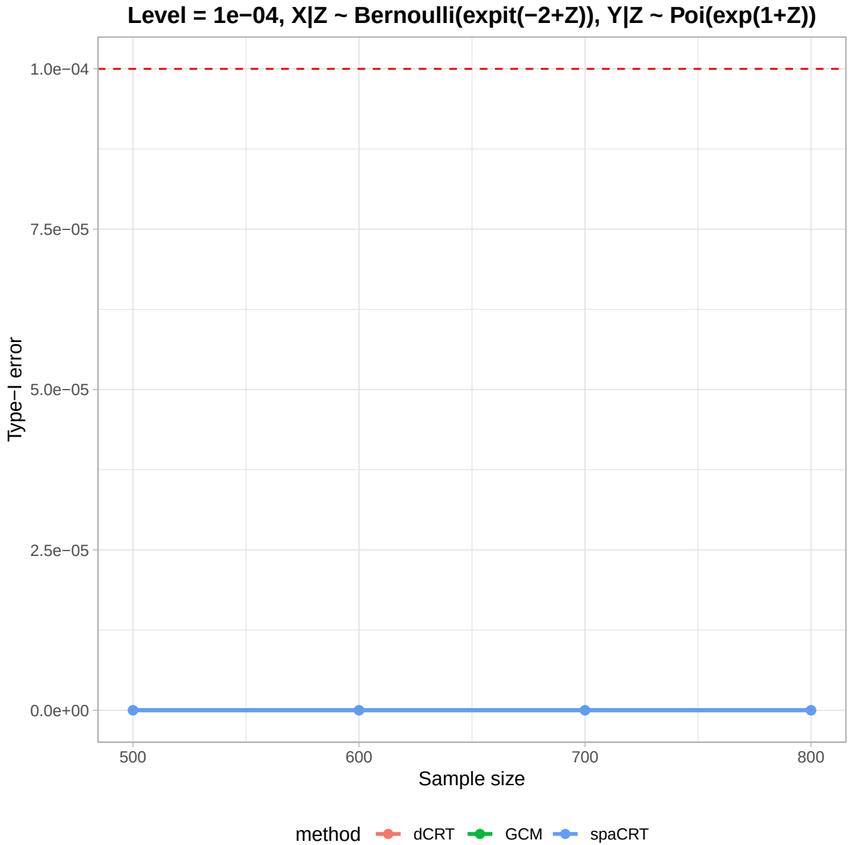

Level = 0.01, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

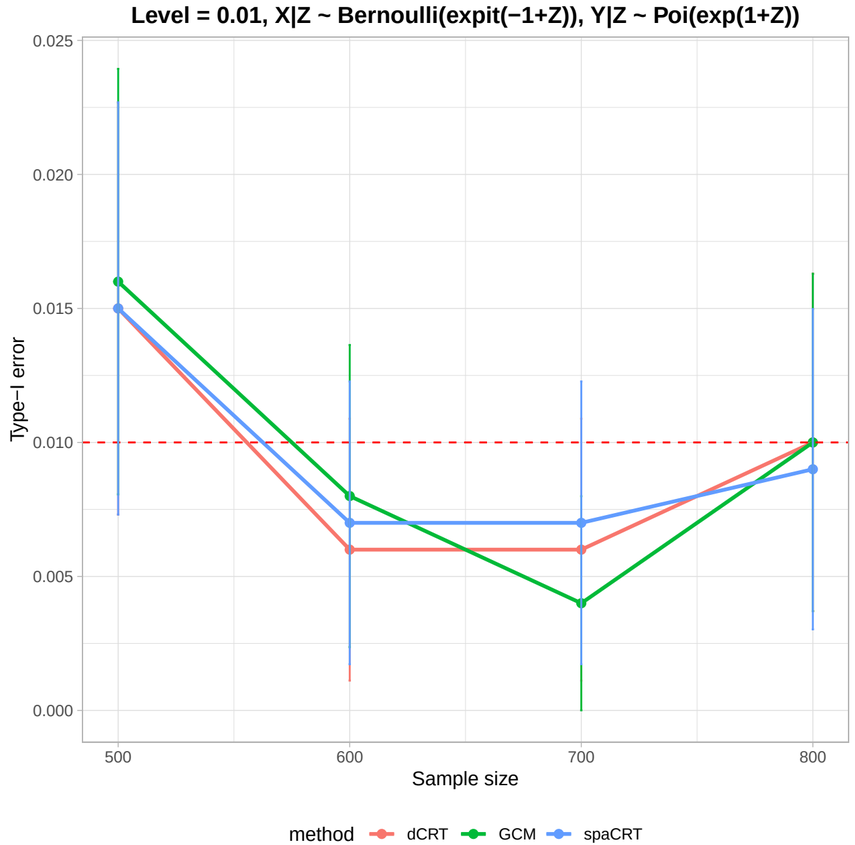

Level = 0.001, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

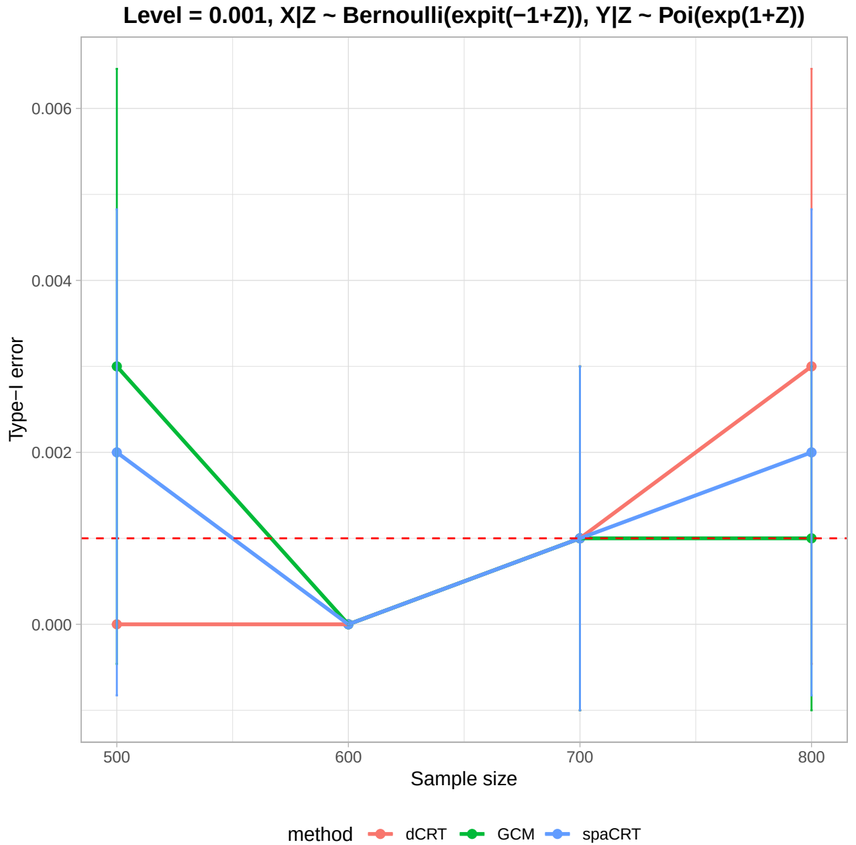

Level = 1e−04, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

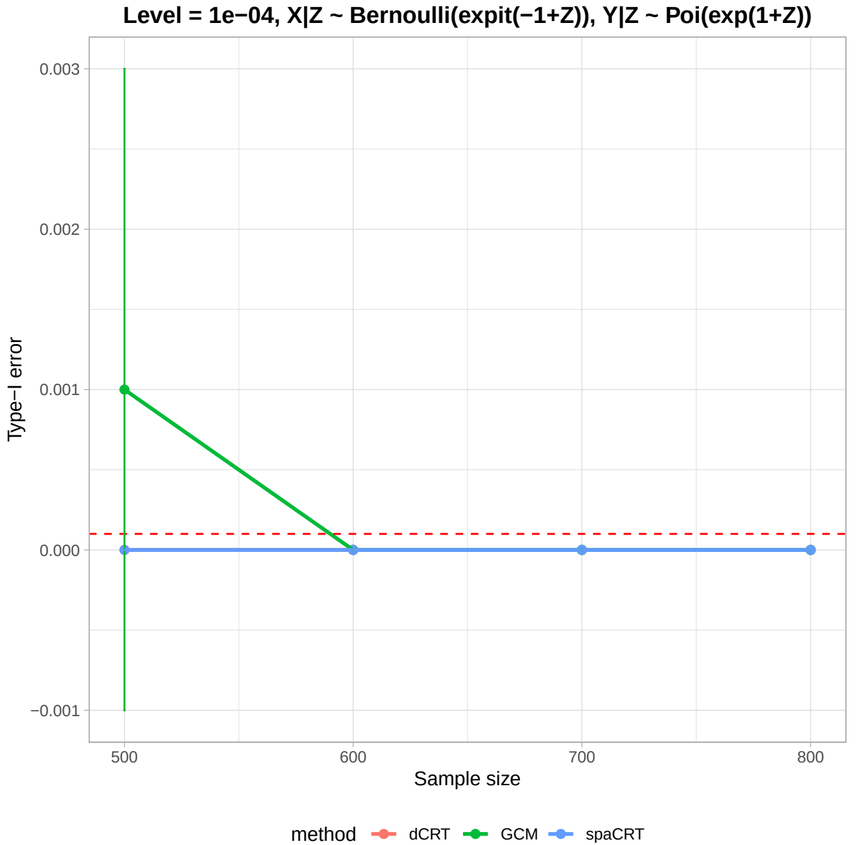

Level = 0.01, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

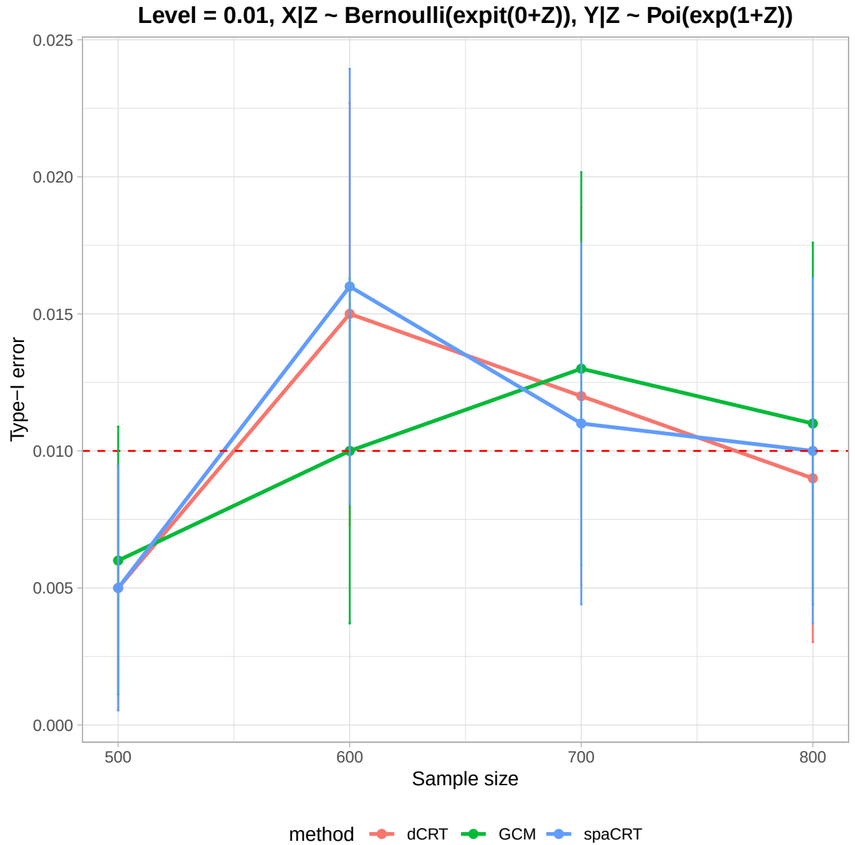

Level = 0.001, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.008
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

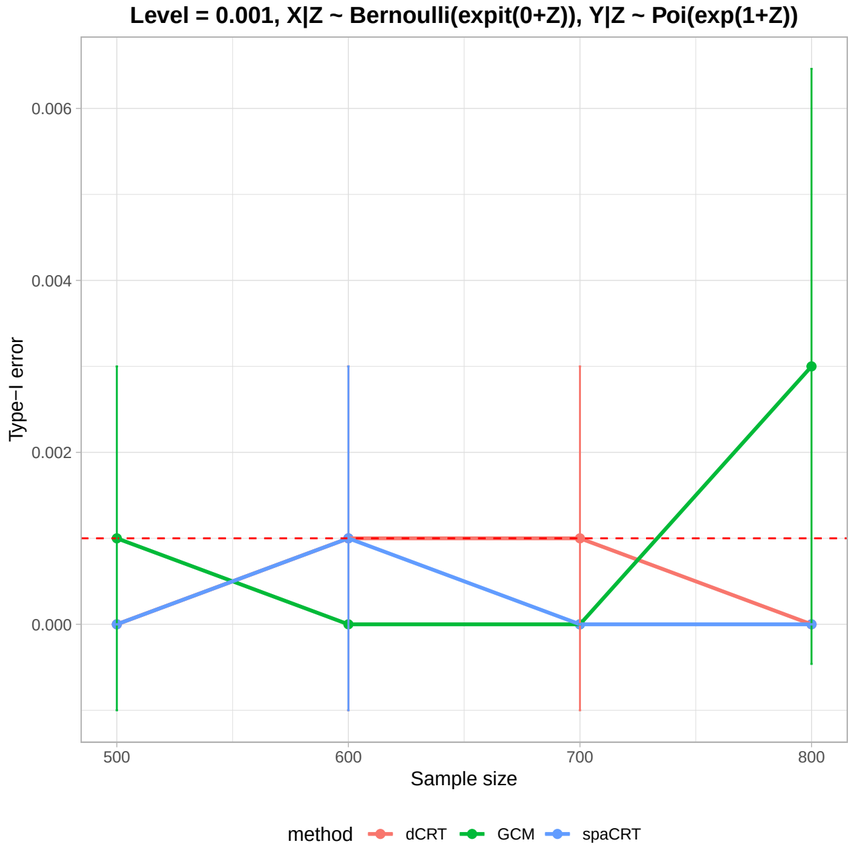

Level = 1e−04, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

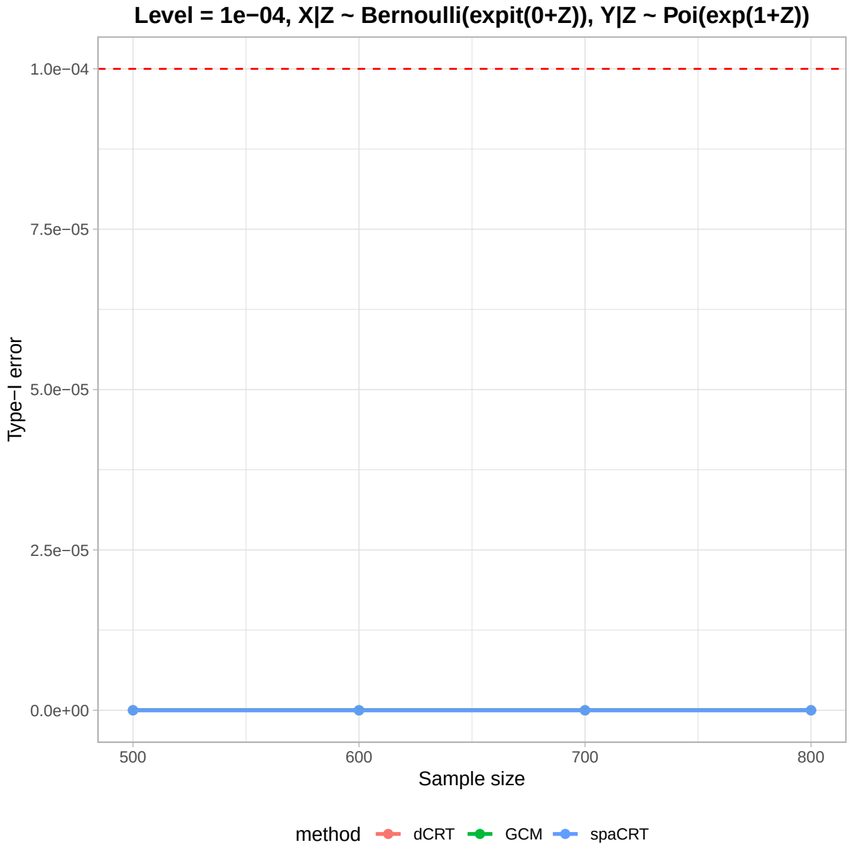

Level = 0.01, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.025
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

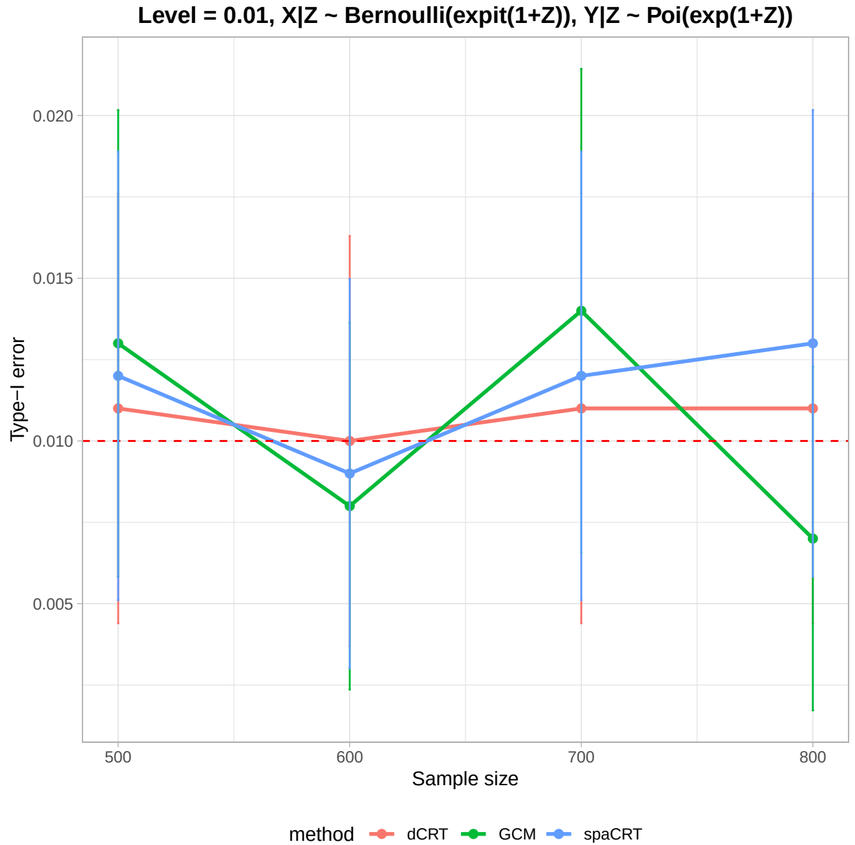

Level = 0.001, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

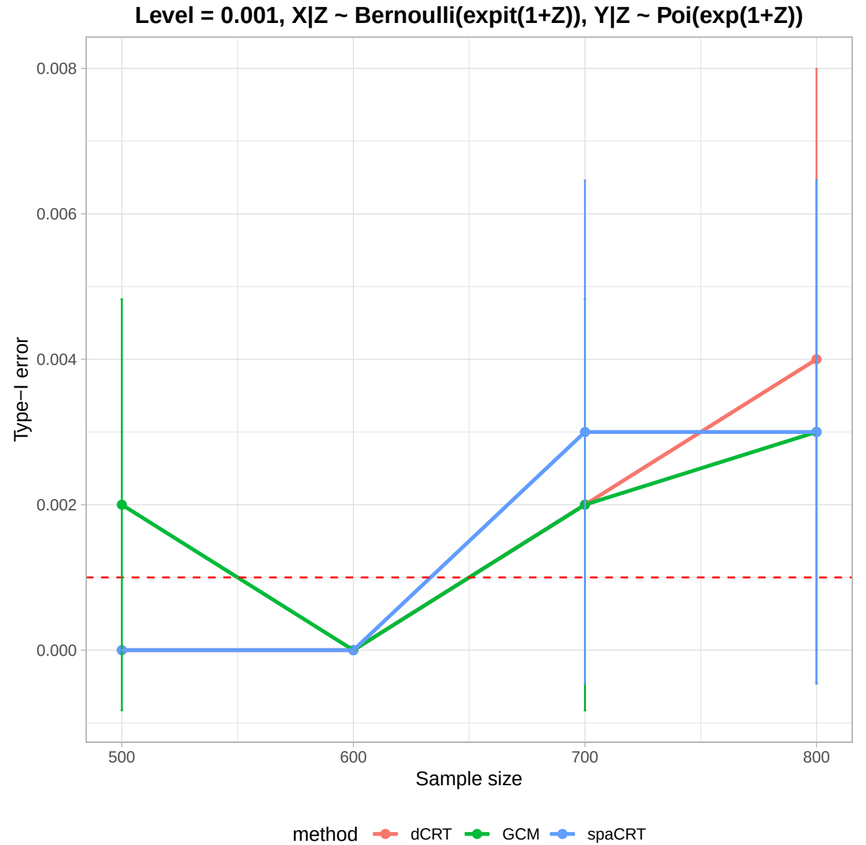

Level = 1e−04, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

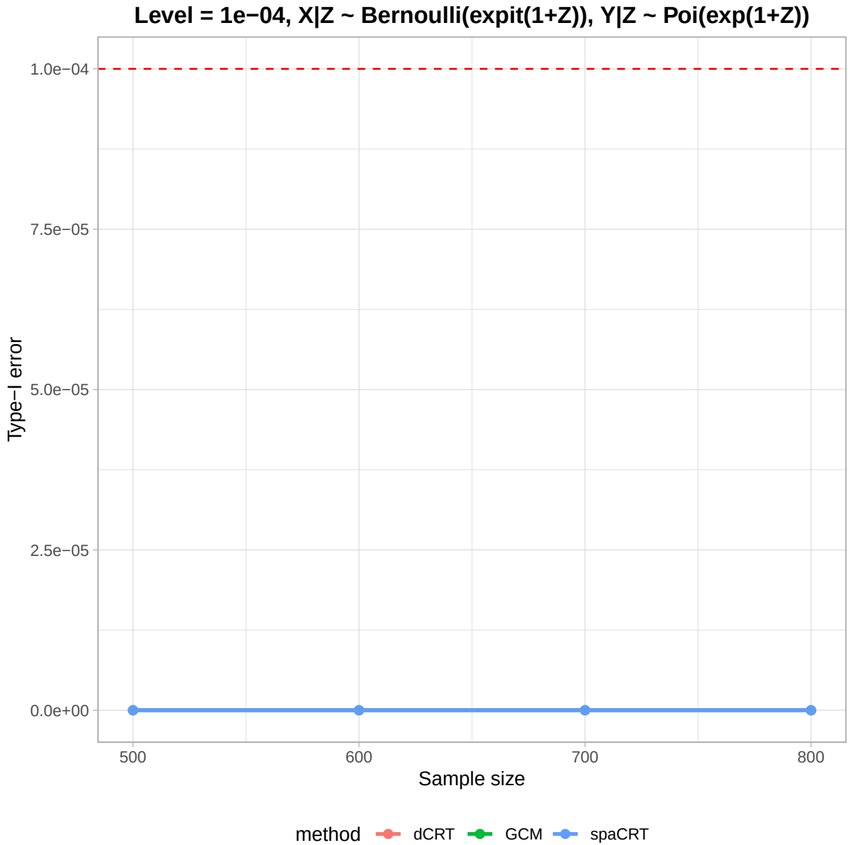

Level = 0.01, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.025
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

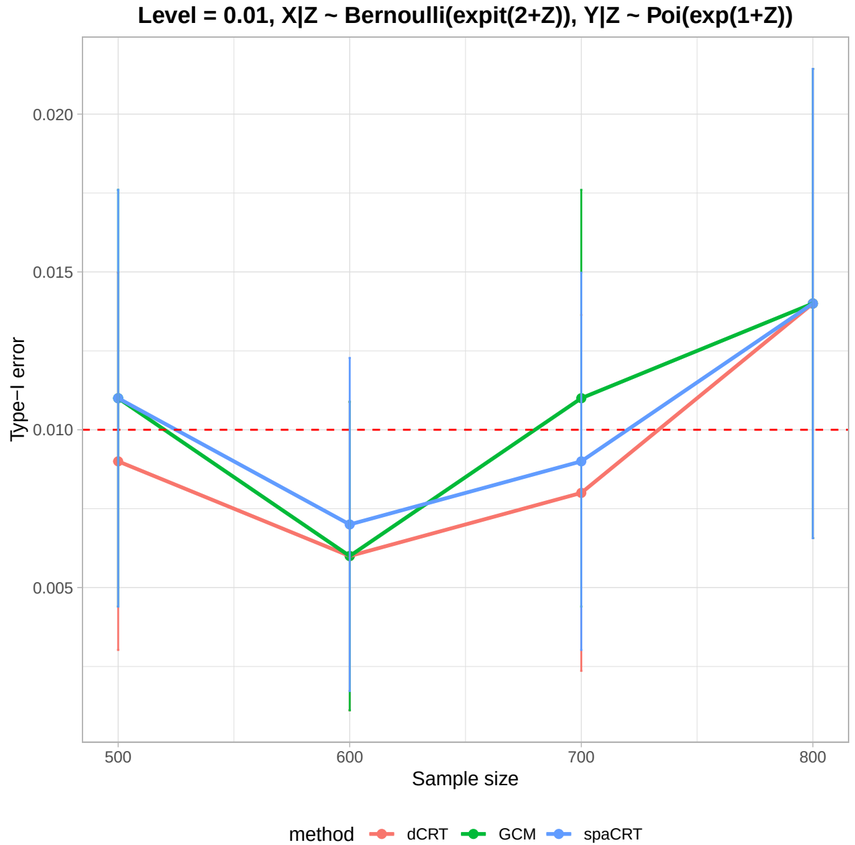

Level = 0.001, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

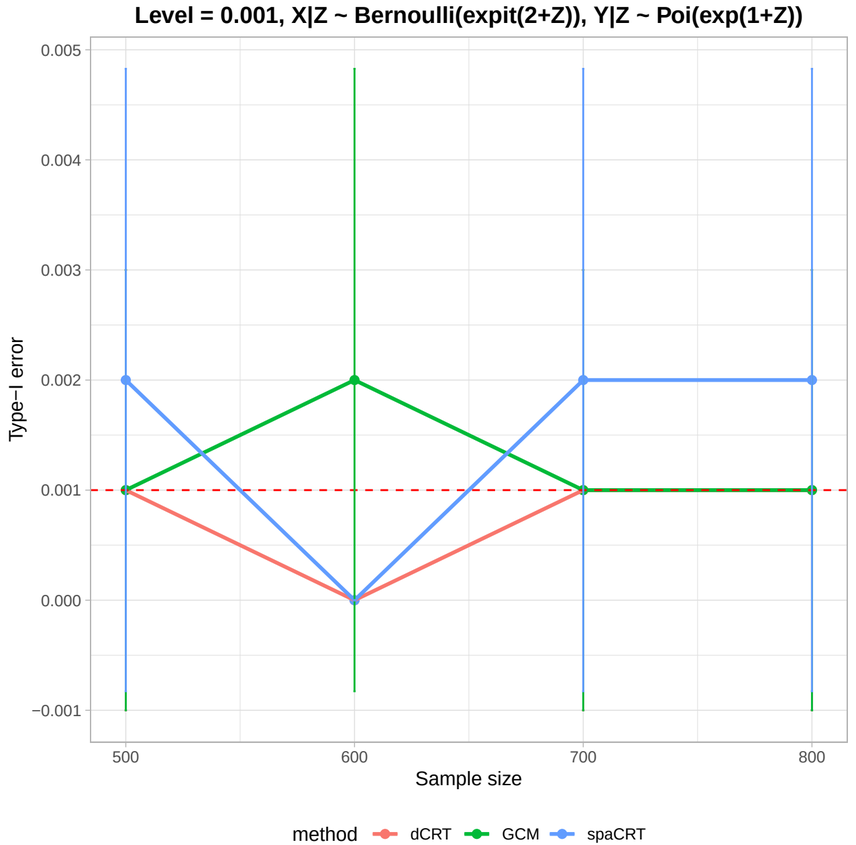

Level = 1e−04, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

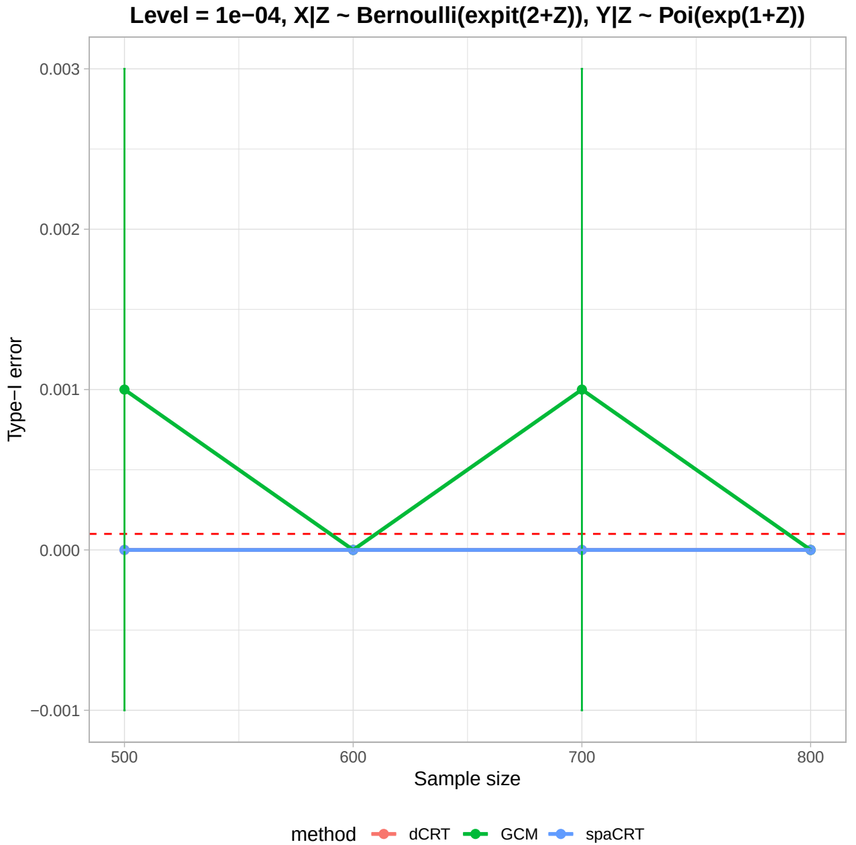

Level = 0.01, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

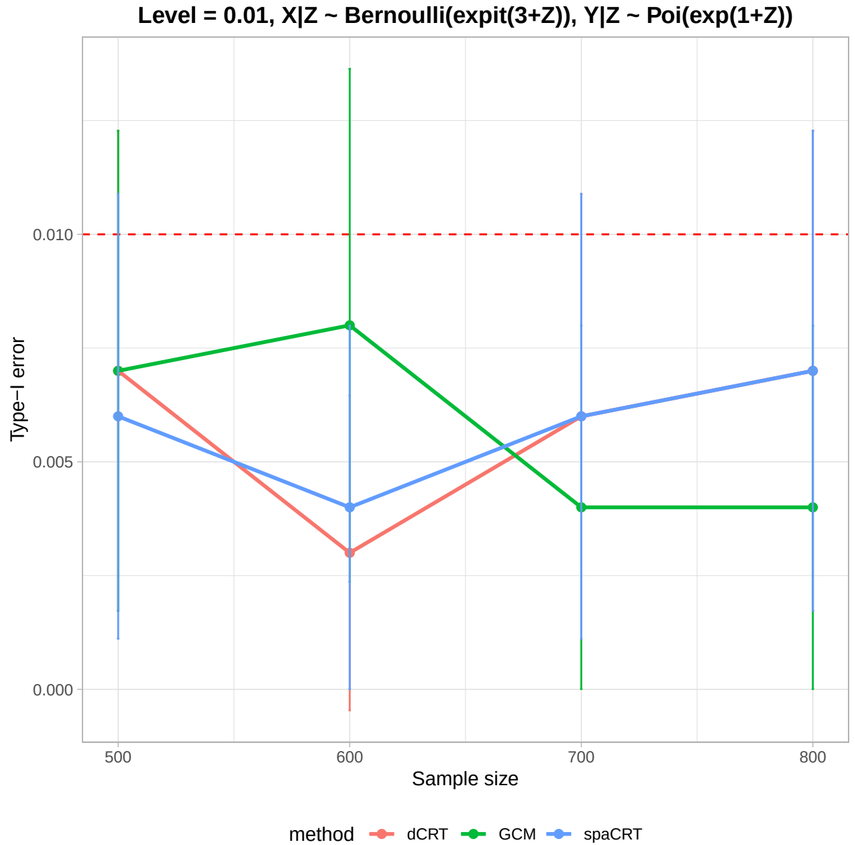

Level = 0.001, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.008
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

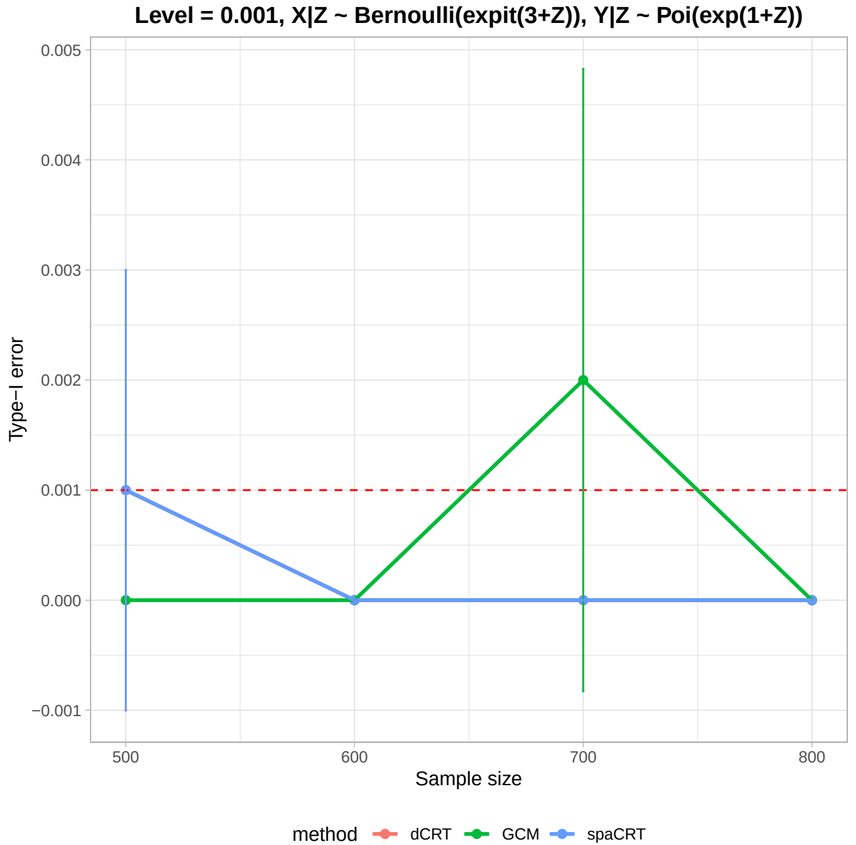

Level = 1e−04, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

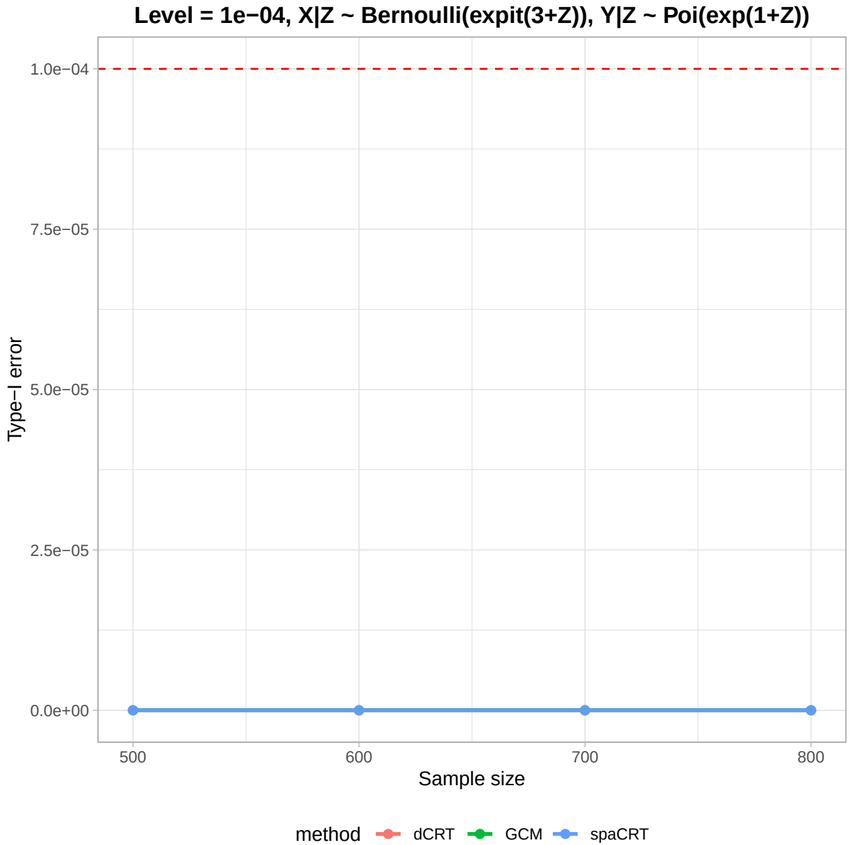

Level = 0.01, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

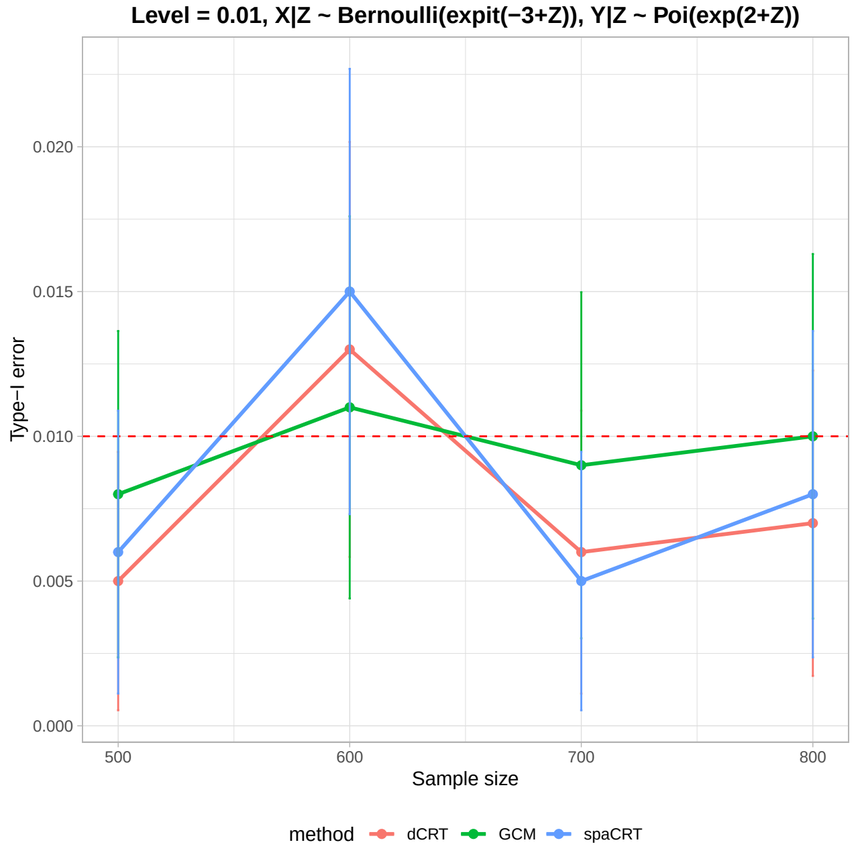

Level = 0.001, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

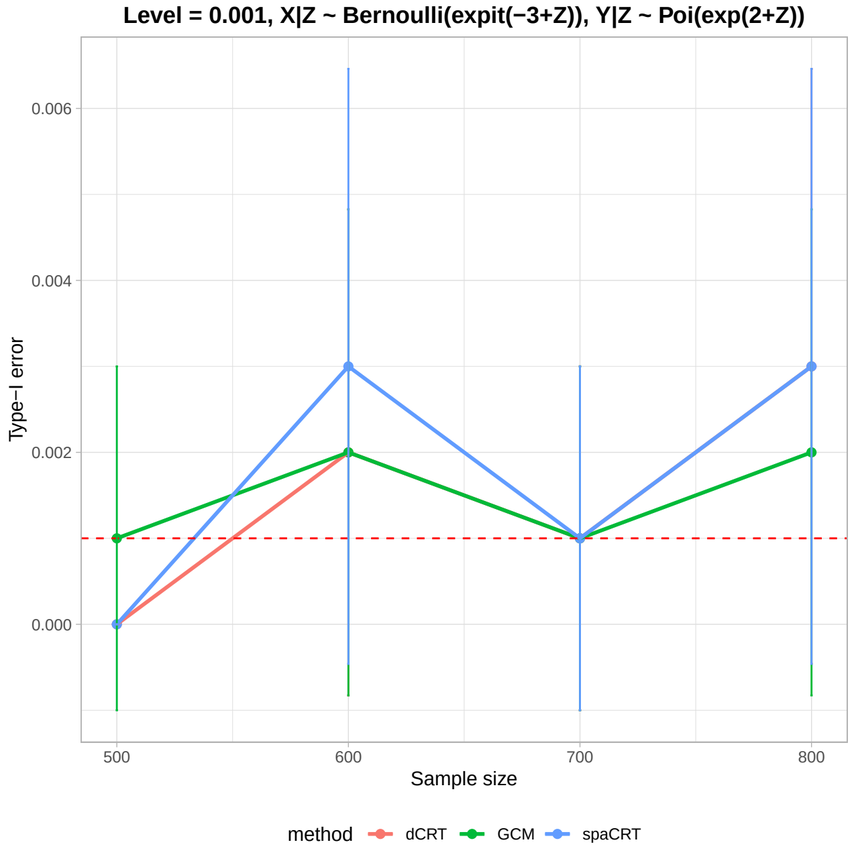

Level = 1e−04, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

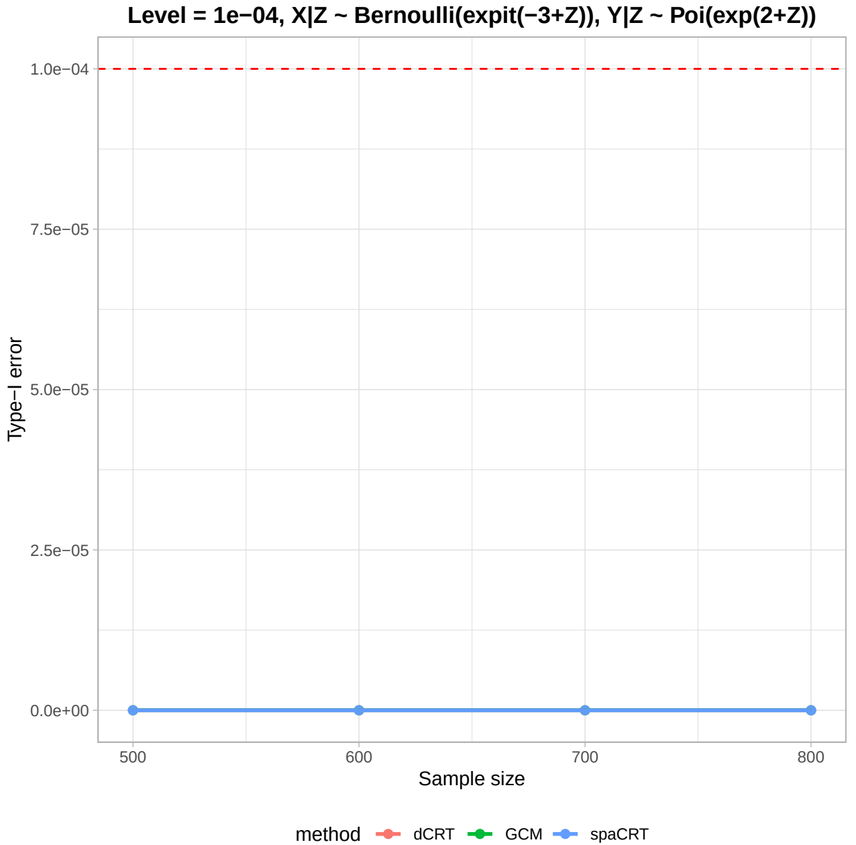

Level = 0.01, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

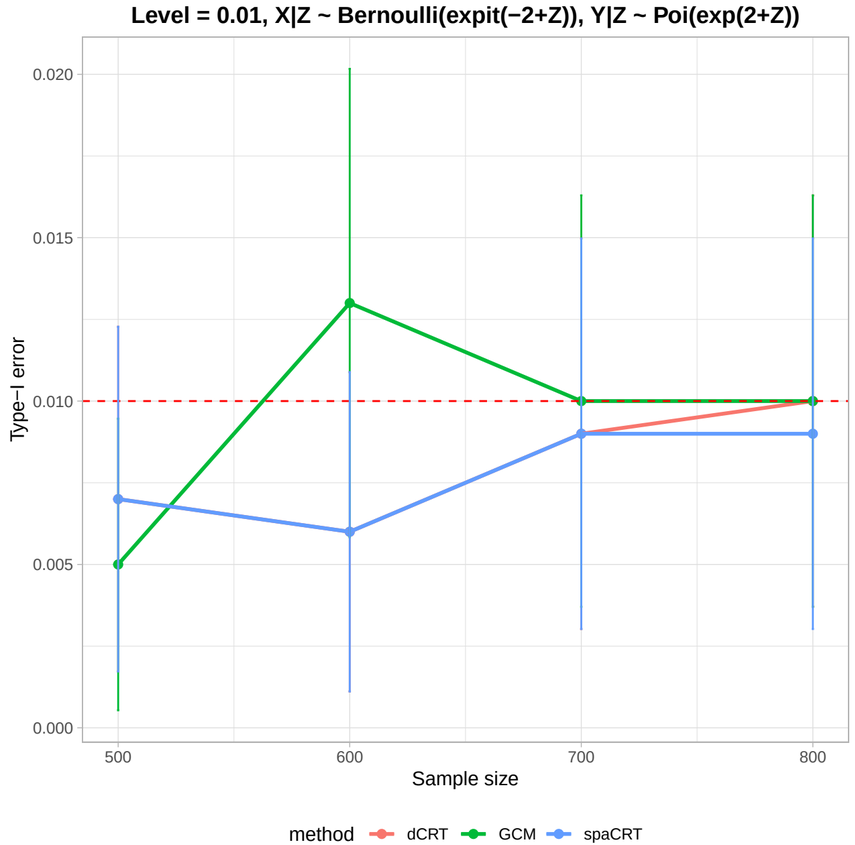

Level = 0.001, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

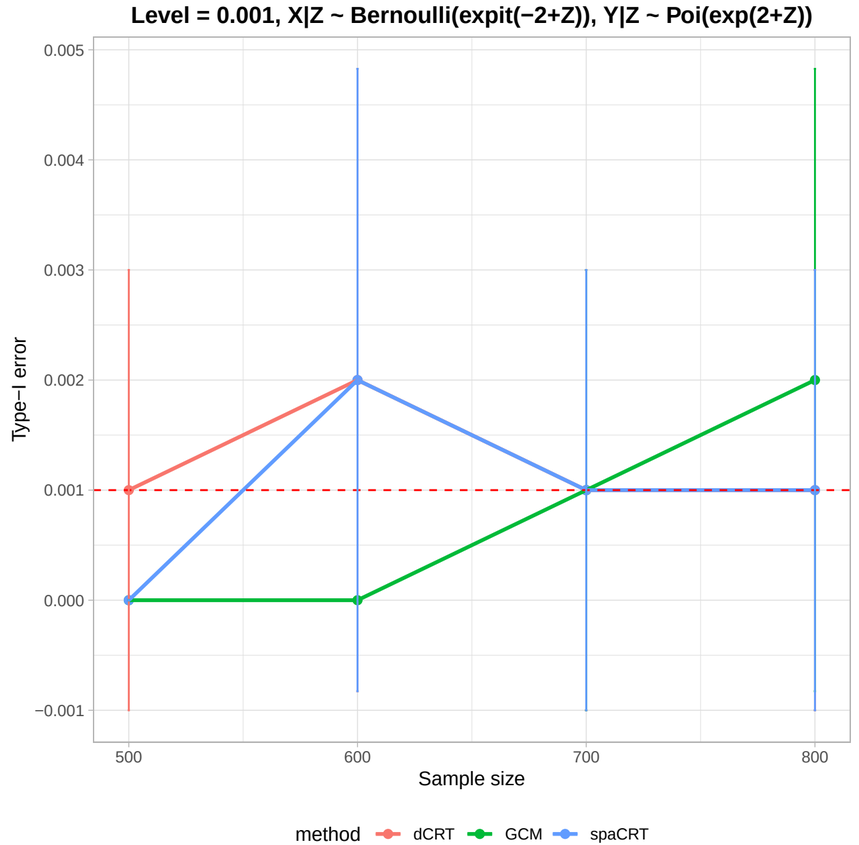

Level = 1e−04, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(1+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

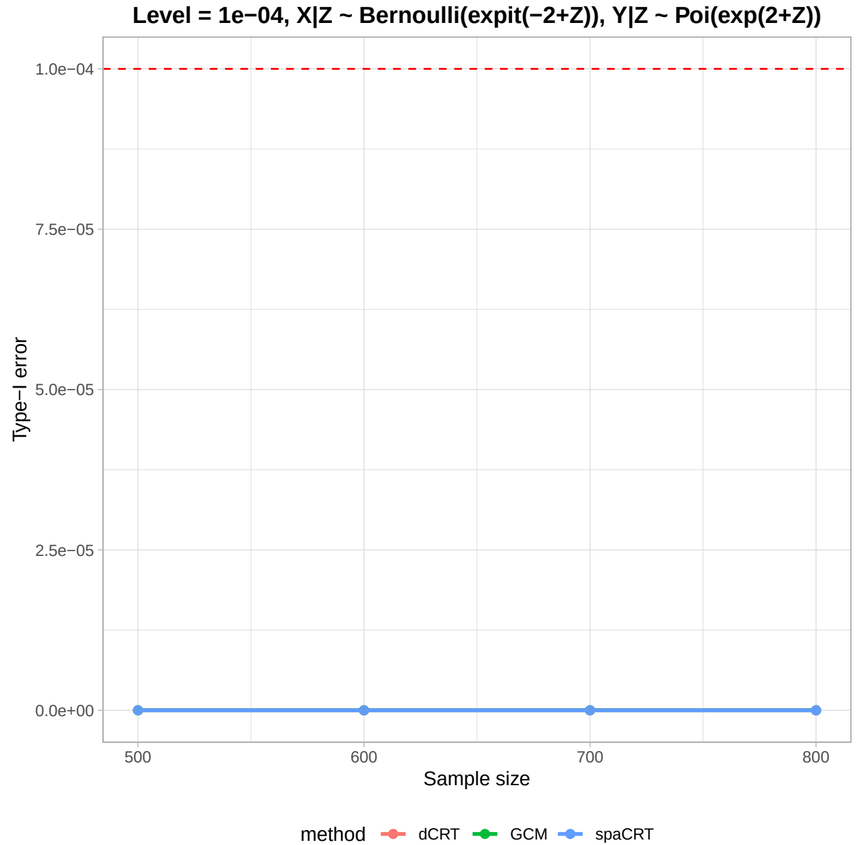

Level = 0.01, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

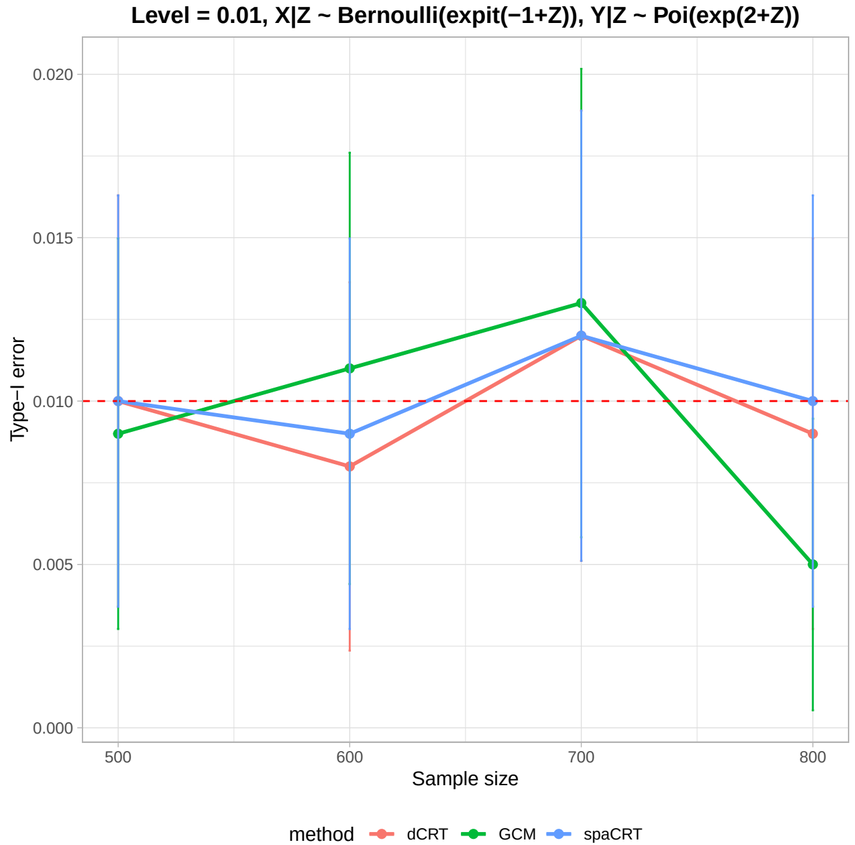

Level = 0.001, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

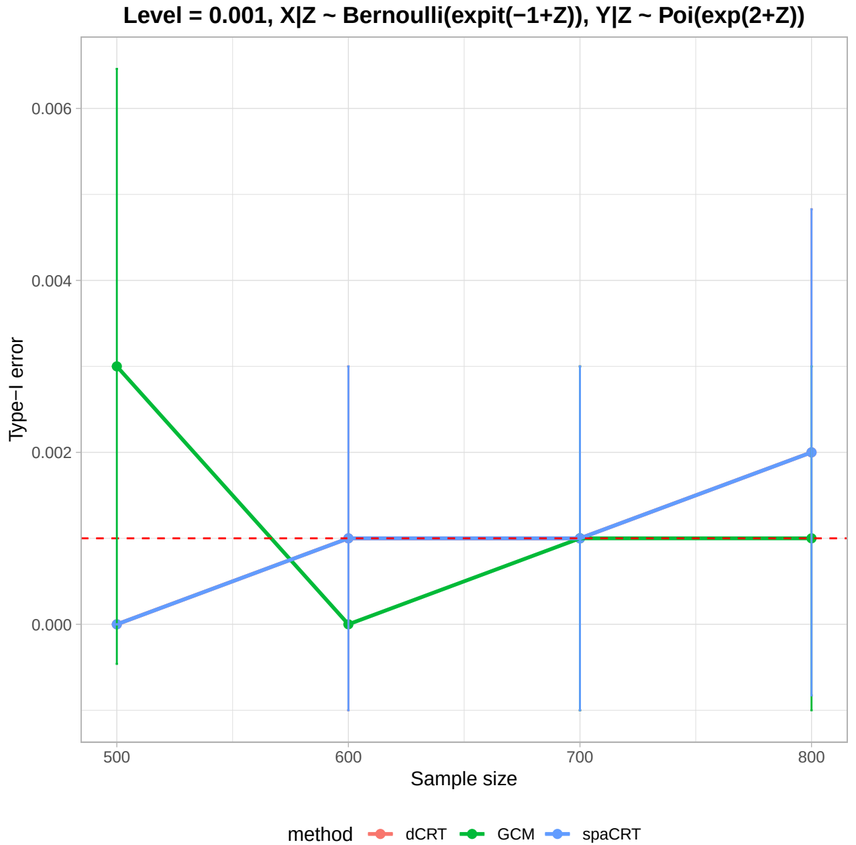

Level = 1e−04, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

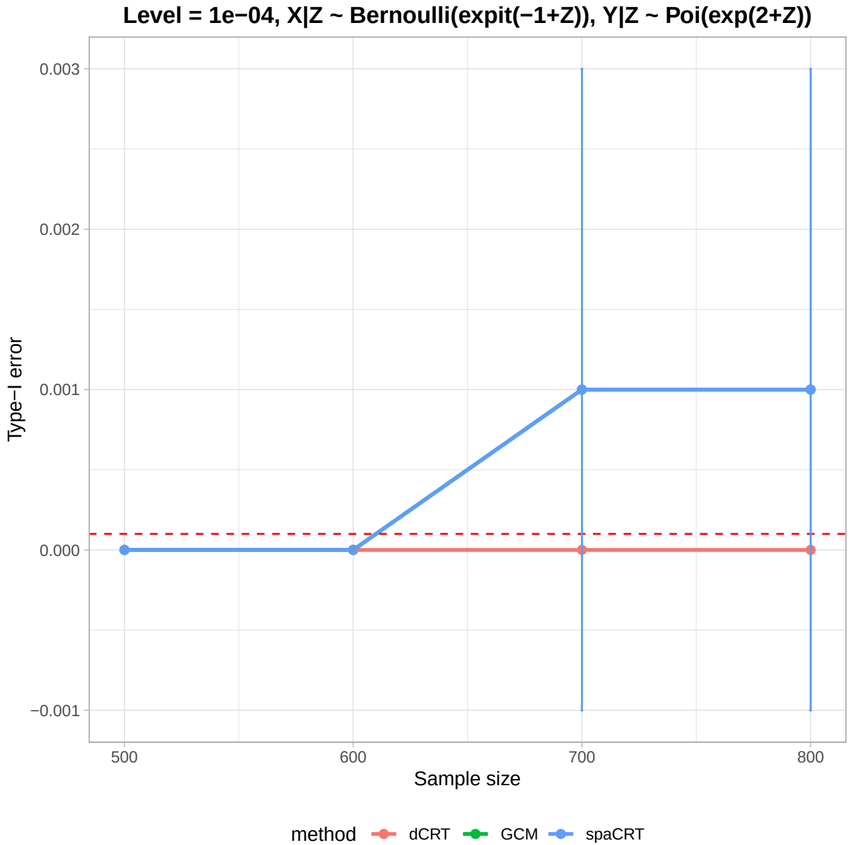

Level = 0.01, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

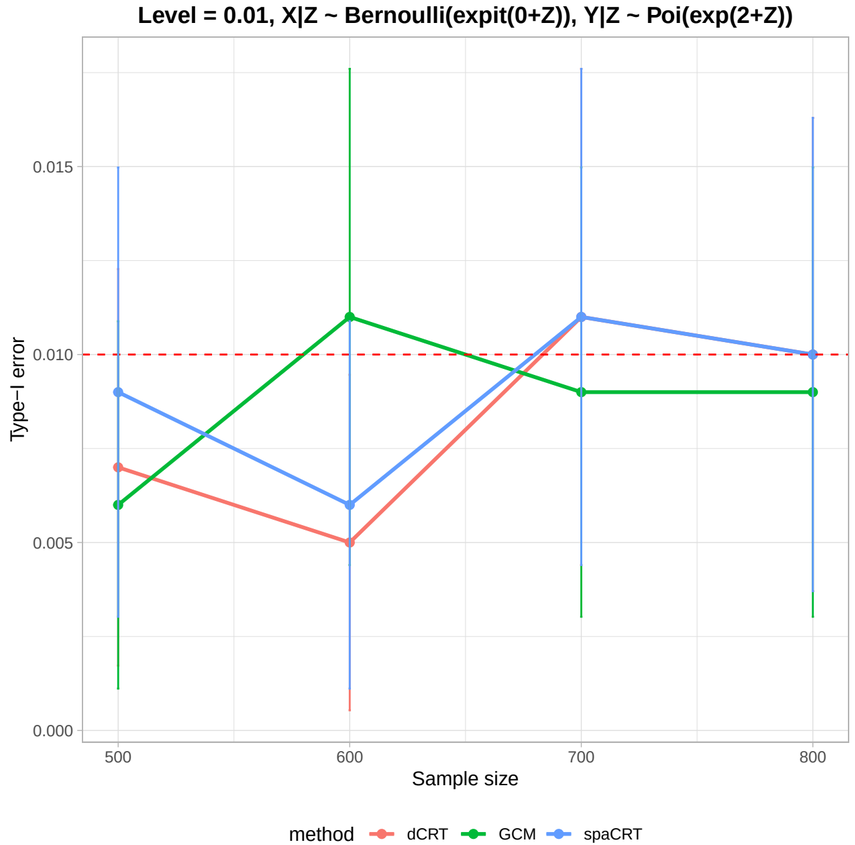

Level = 0.001, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

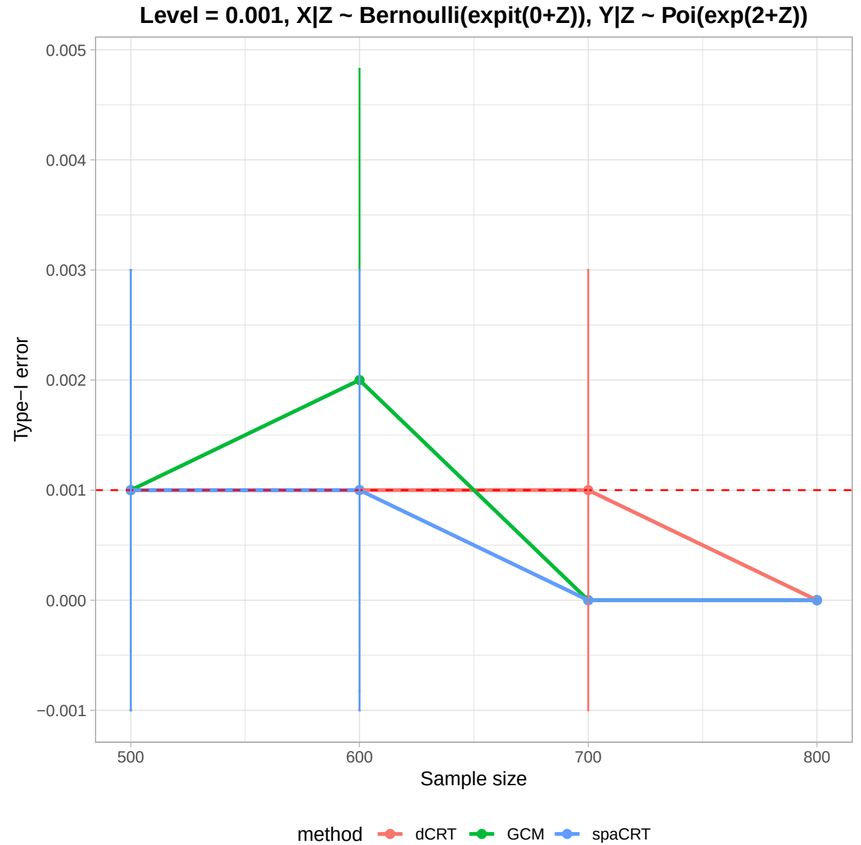

Level = 1e−04, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

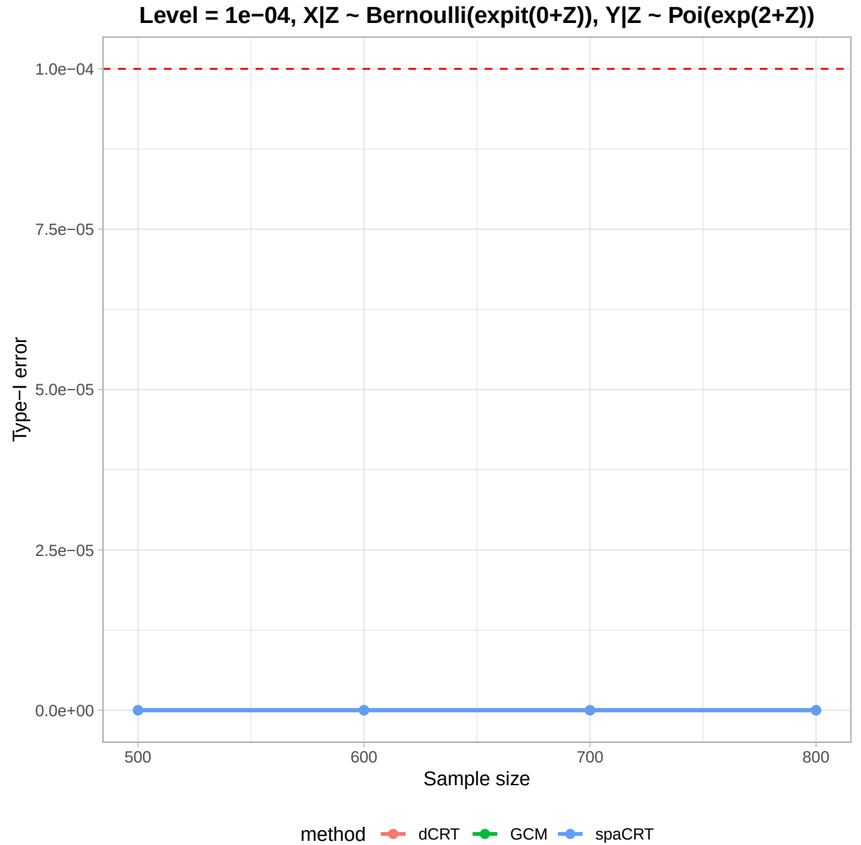

Level = 0.01, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

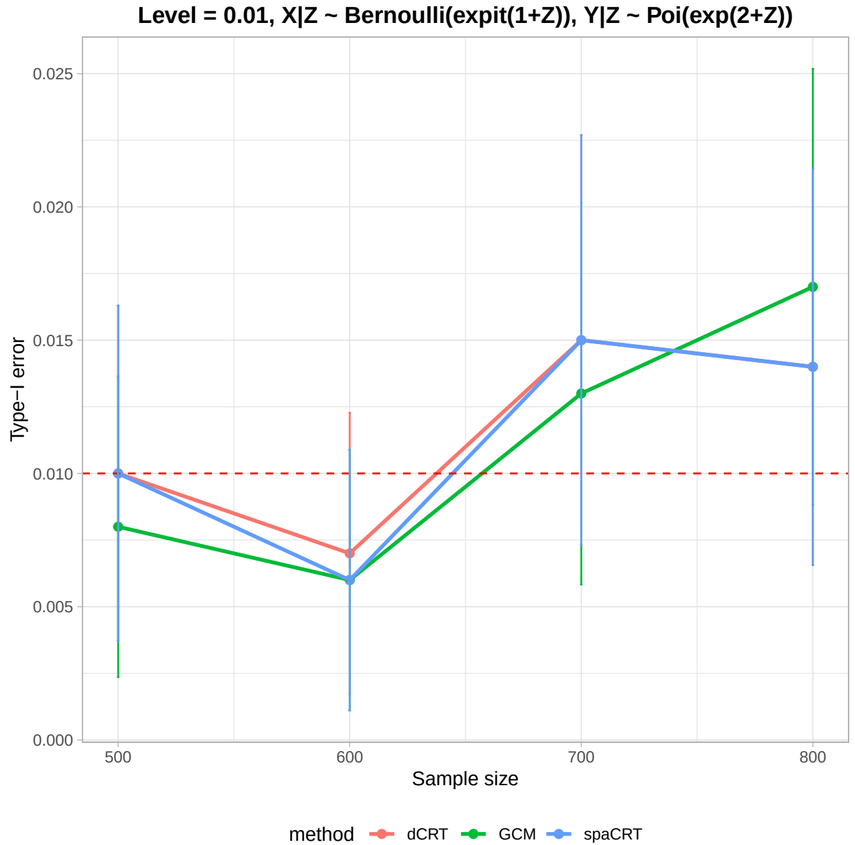

Level = 0.001, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

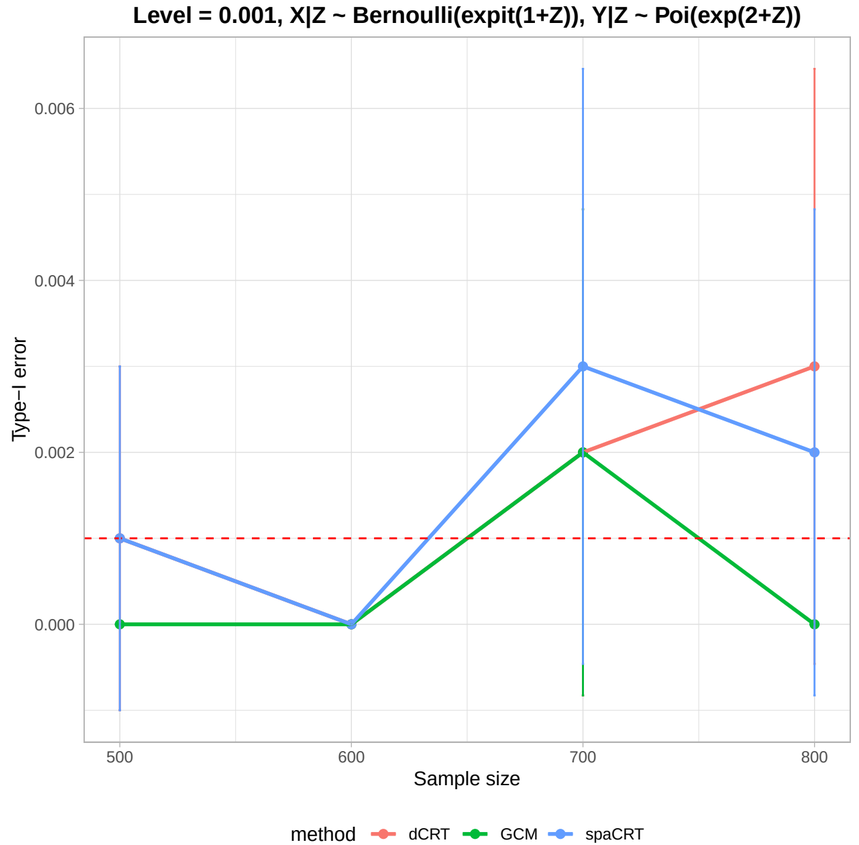

Level = 1e−04, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

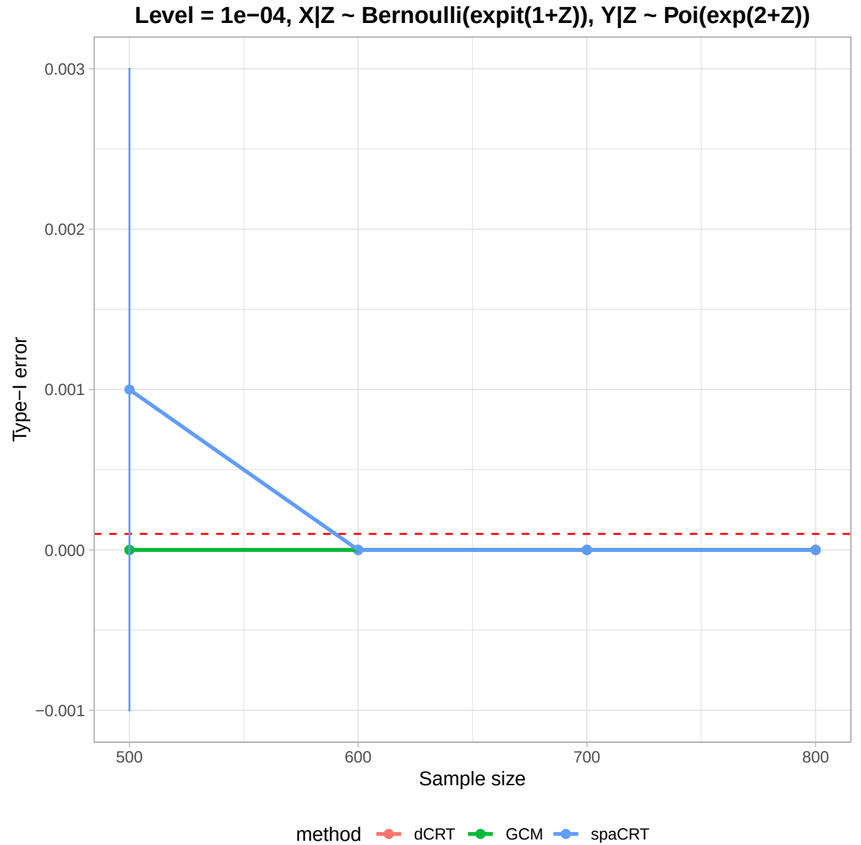

Level = 0.01, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

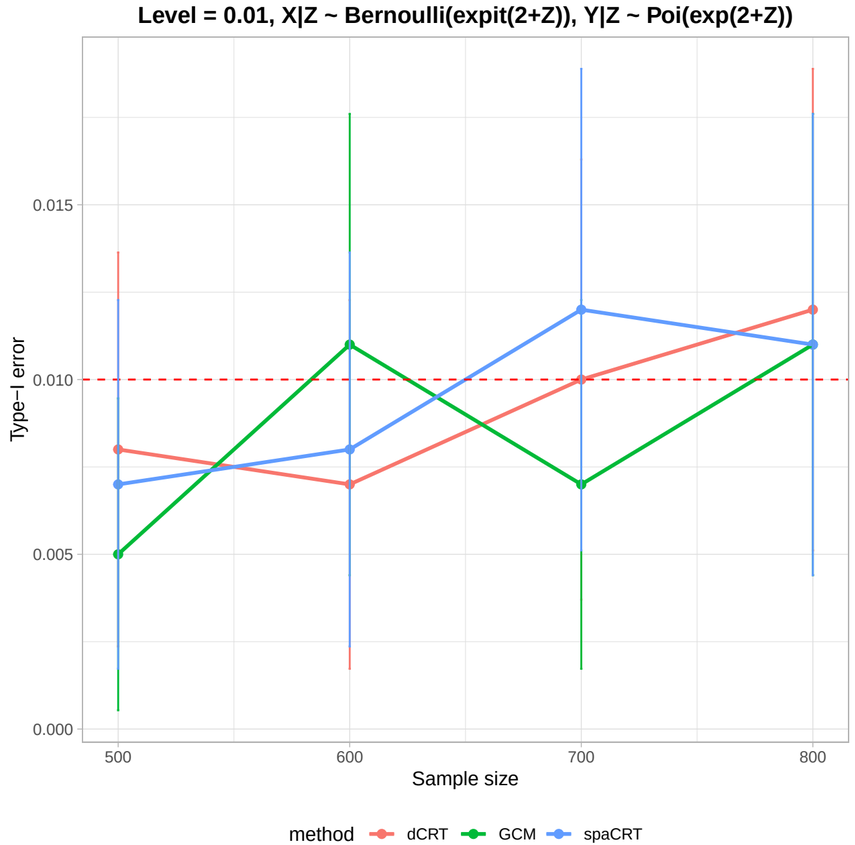

Level = 0.001, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

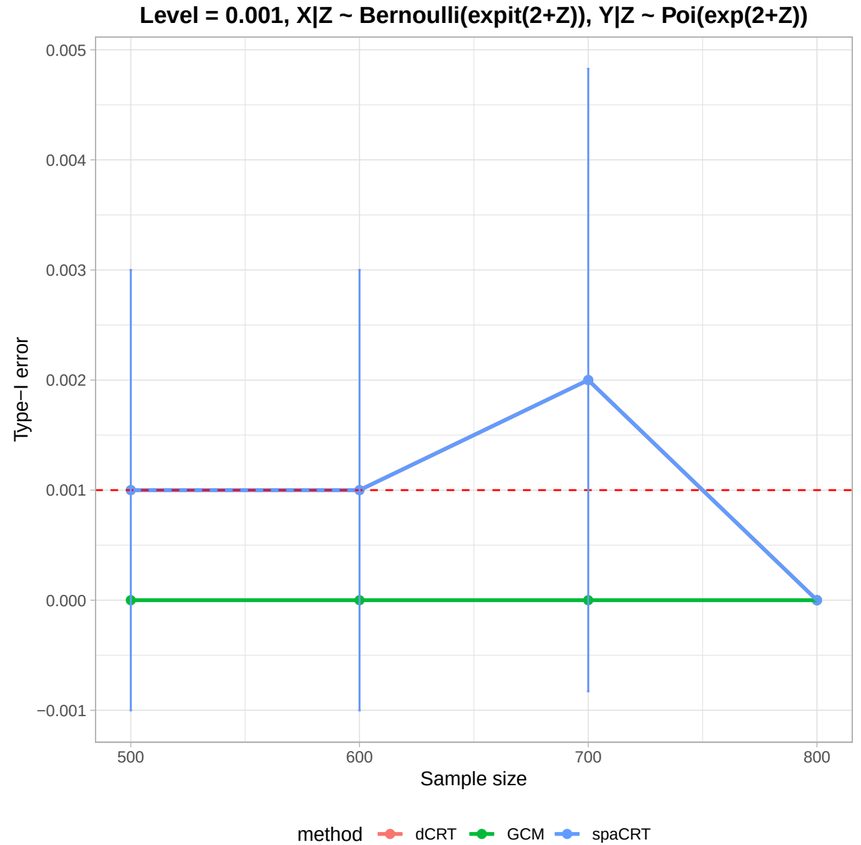

Level = 1e−04, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

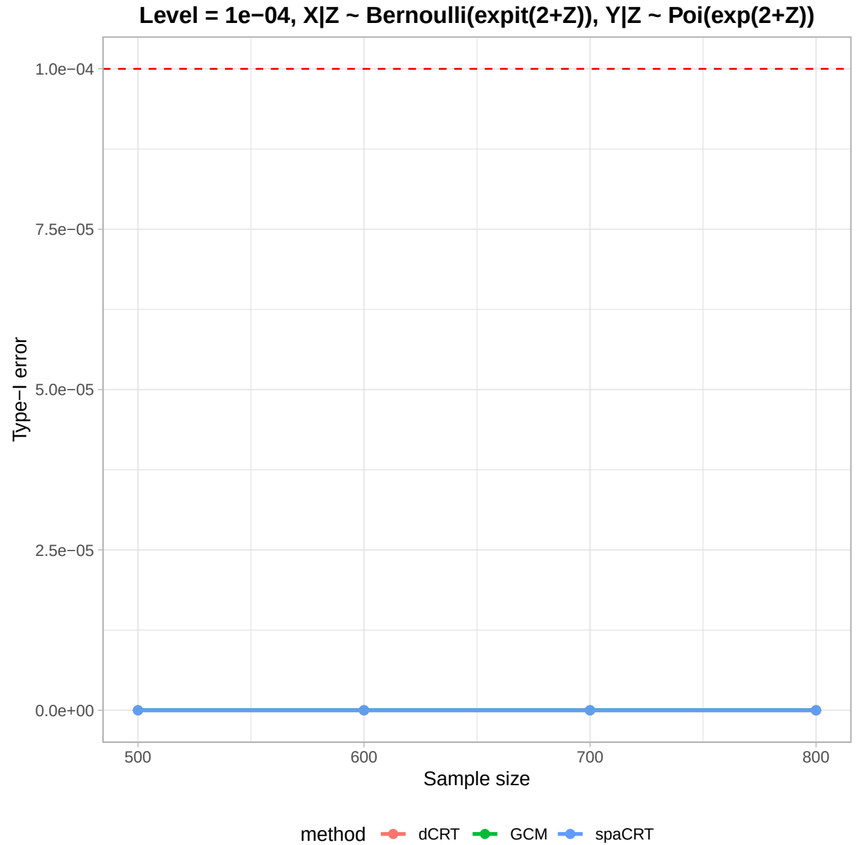

Level = 0.01, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.025
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

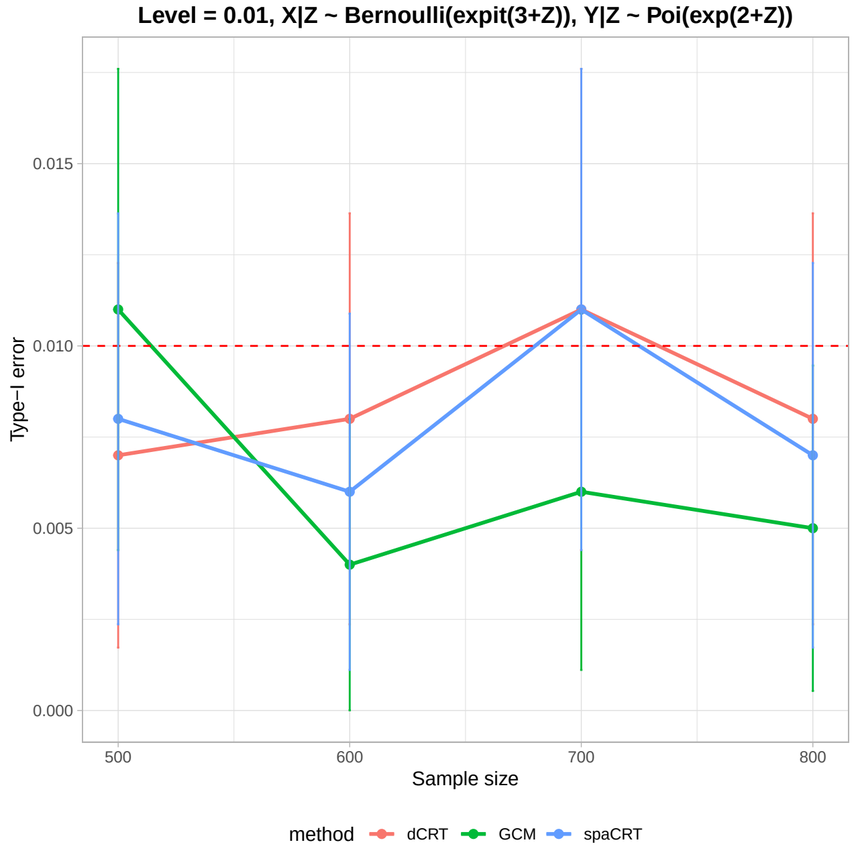

Level = 0.001, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

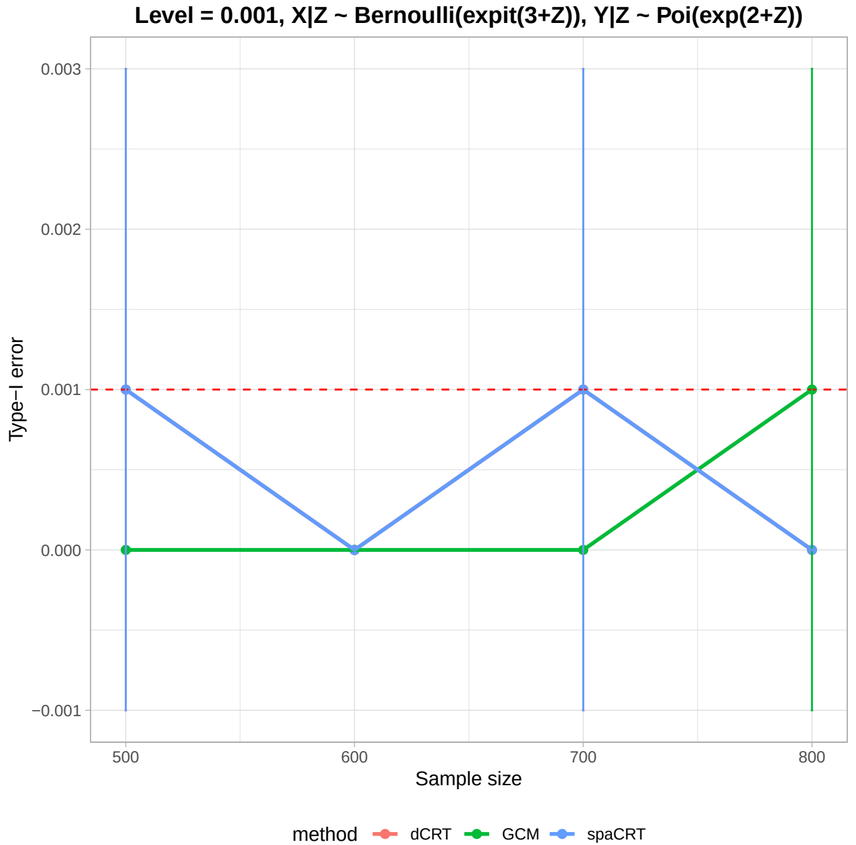

Level = 1e−04, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

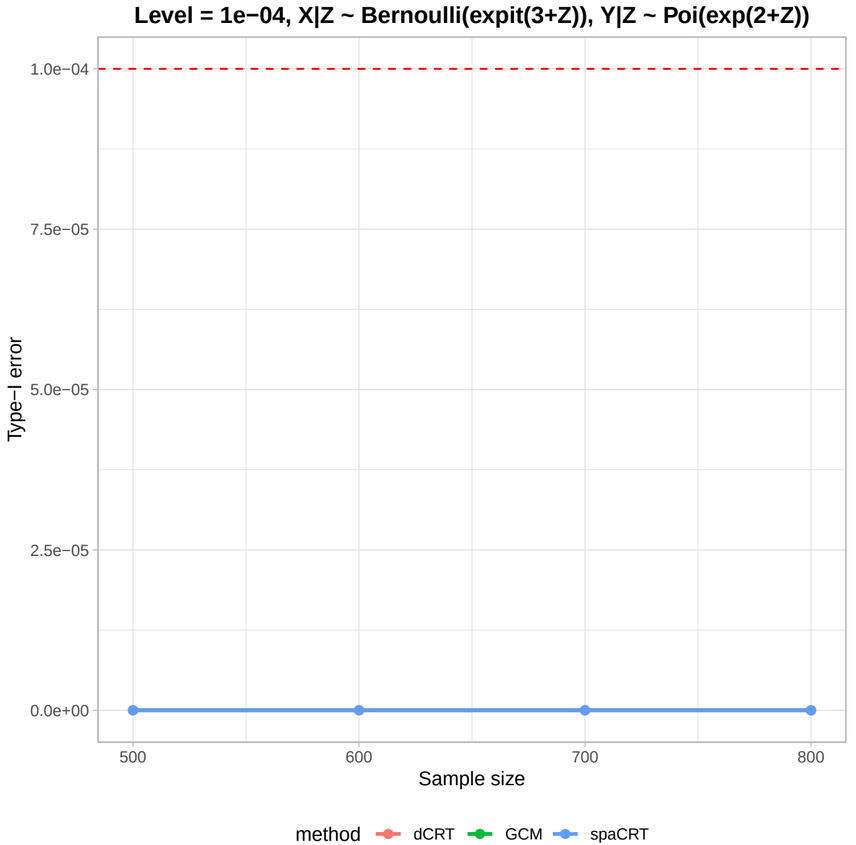

Level = 0.01, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

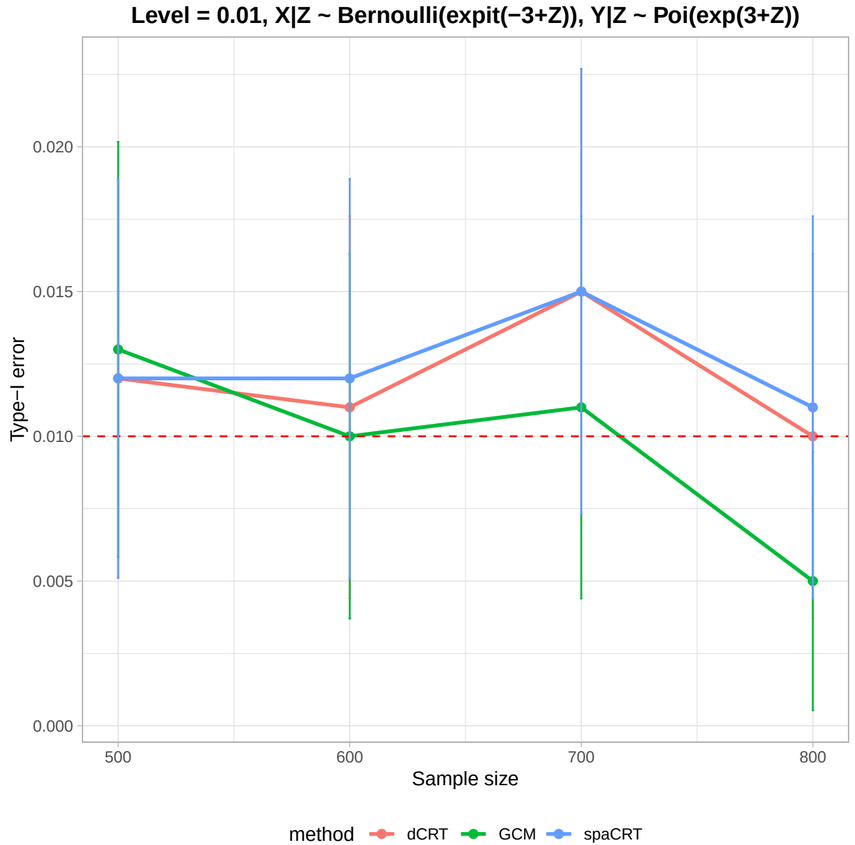

Level = 0.001, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

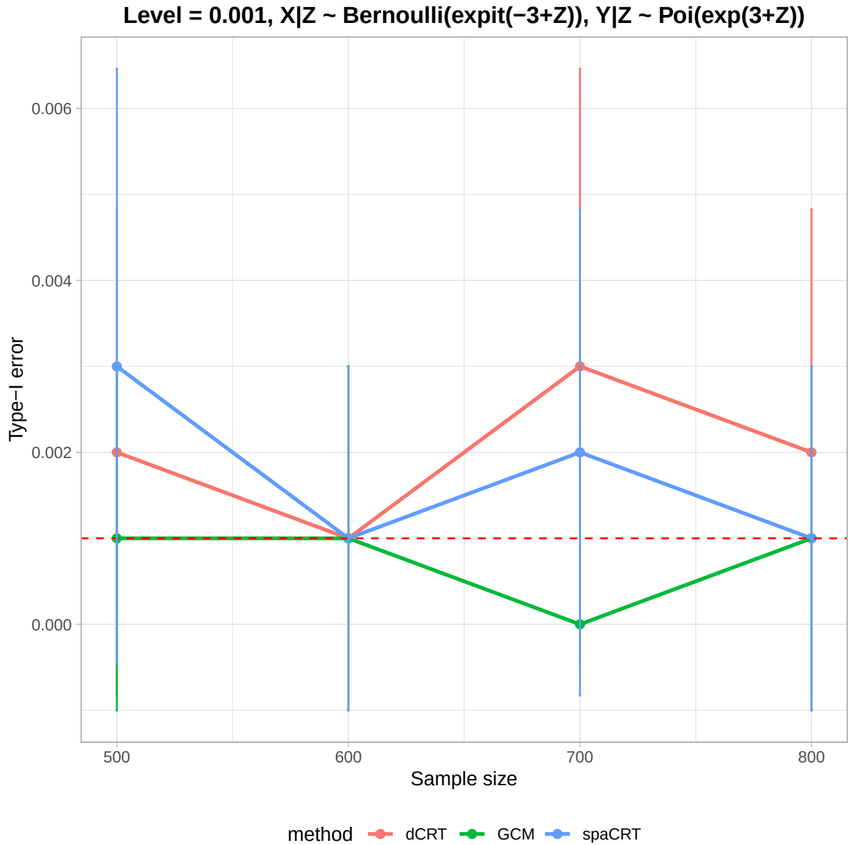

Level = 1e−04, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

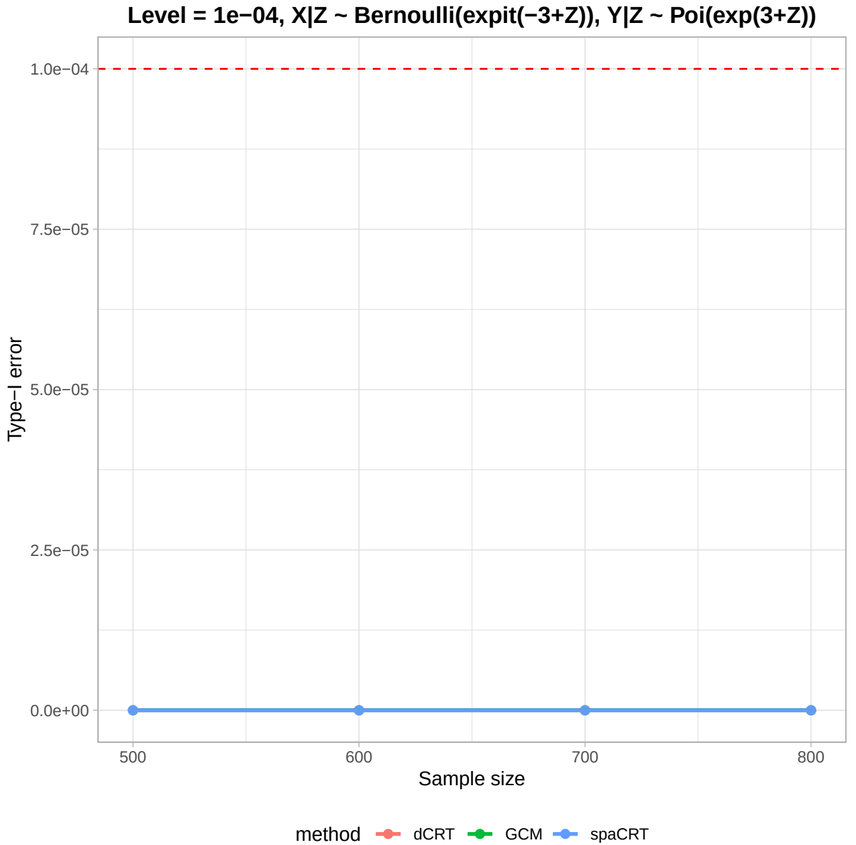

Level = 0.01, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

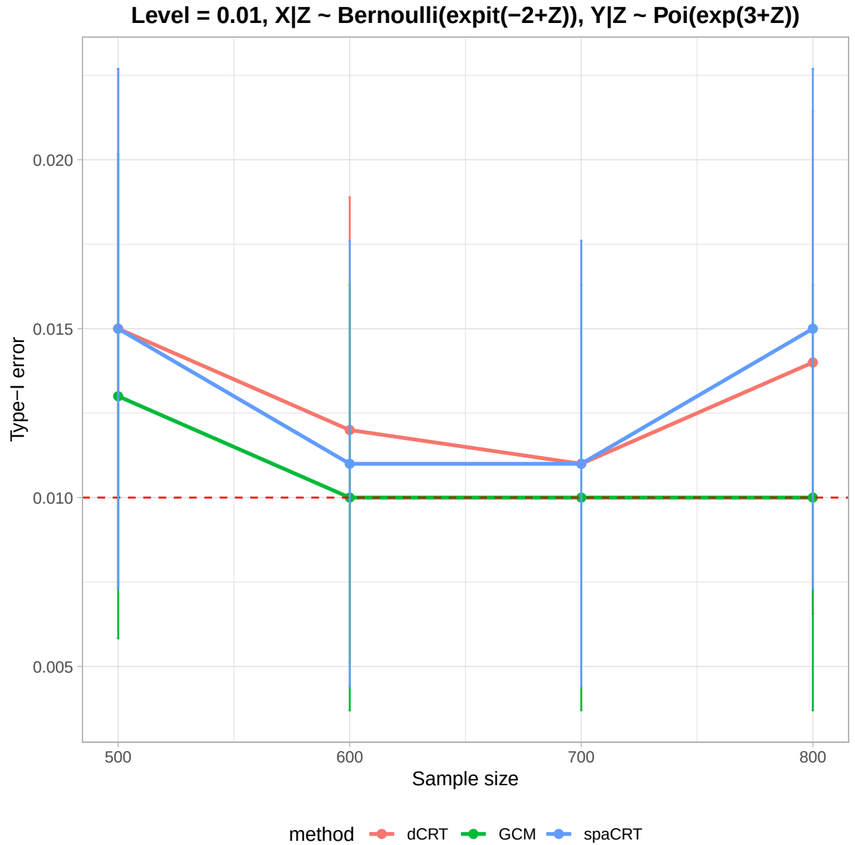

Level = 0.001, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

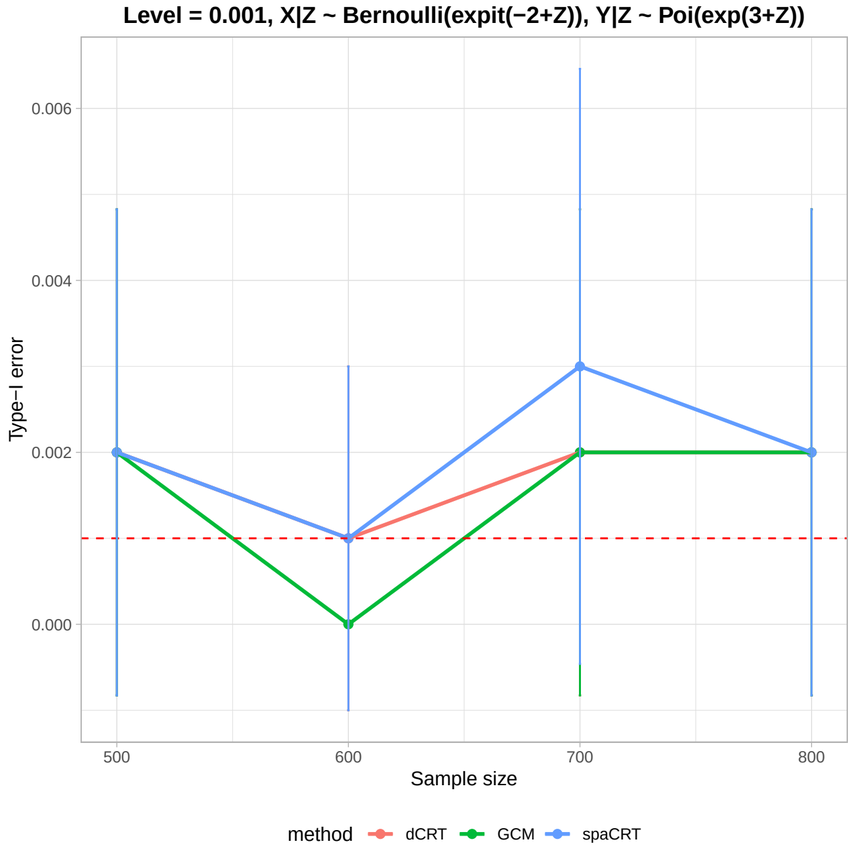

Level = 1e−04, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(2+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

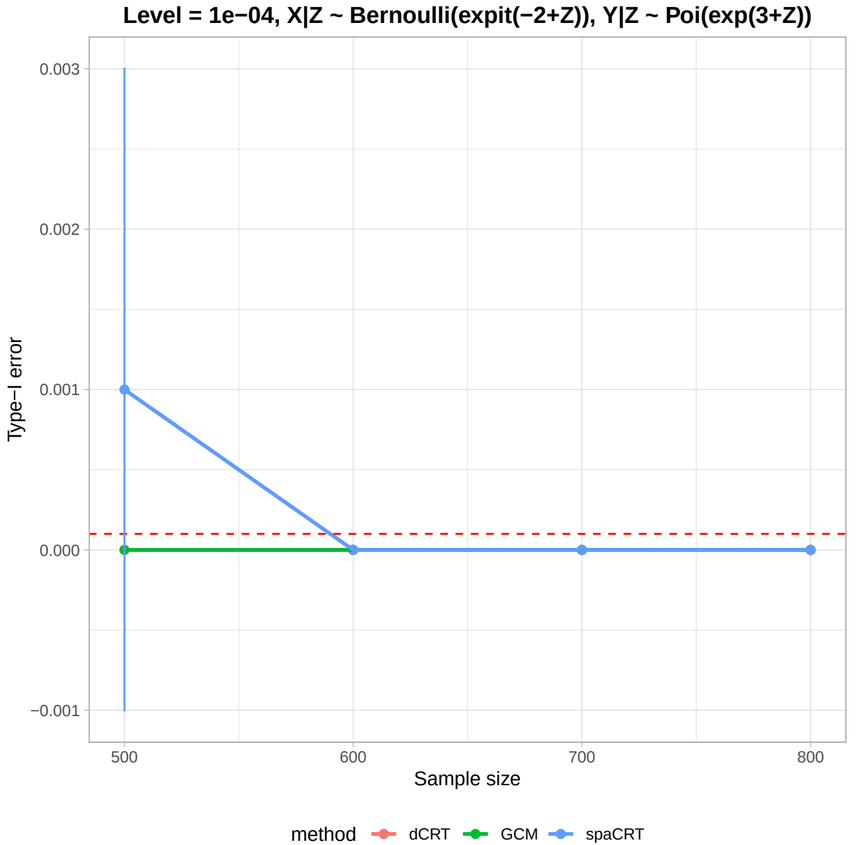

Level = 0.01, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

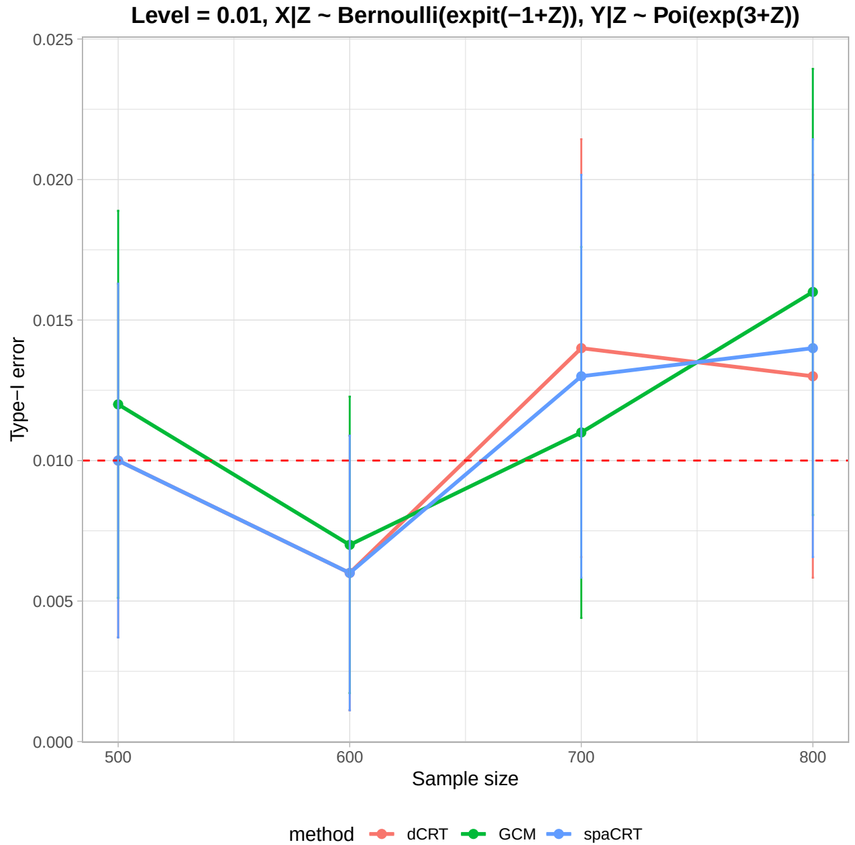

Level = 0.001, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

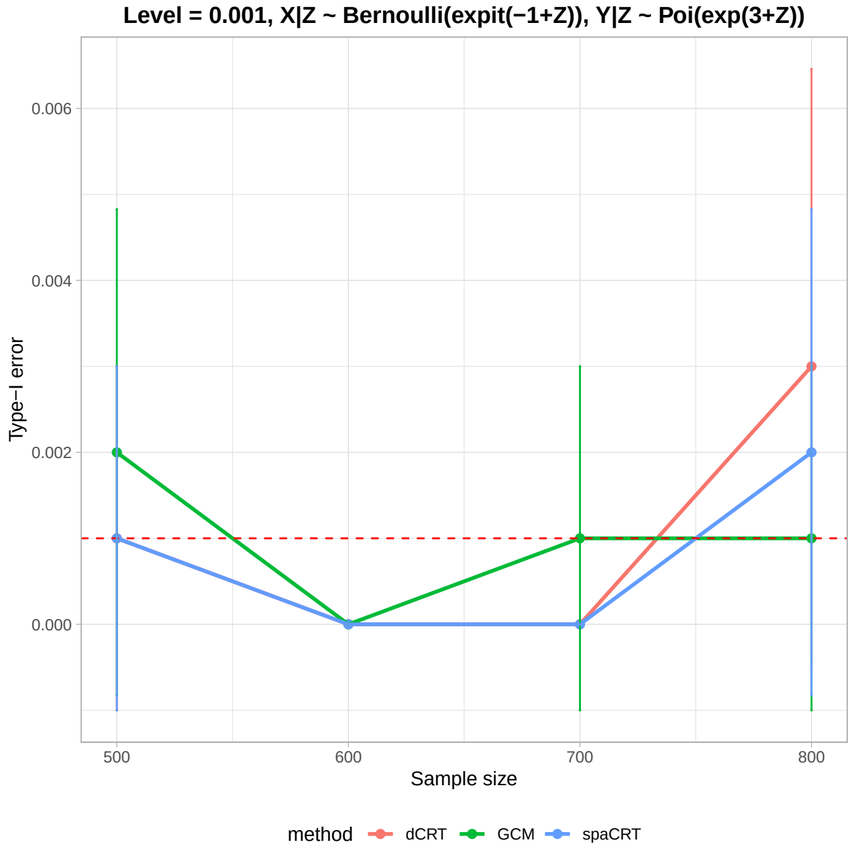

Level = 1e−04, X|Z ~ Bernoulli(expit(−3+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

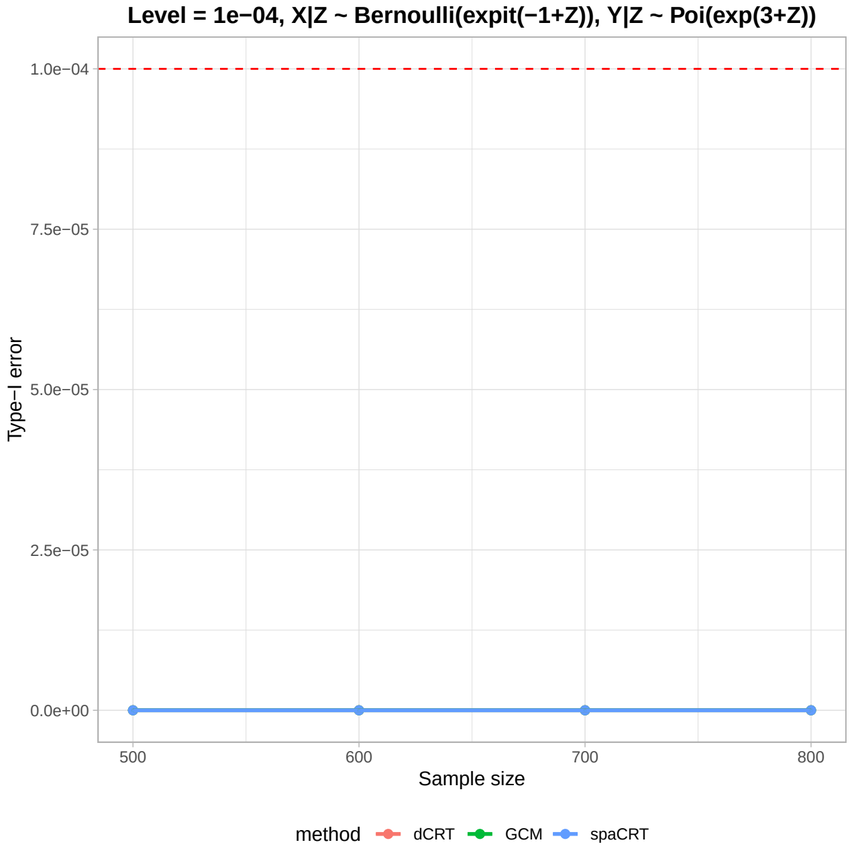

Level = 0.01, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

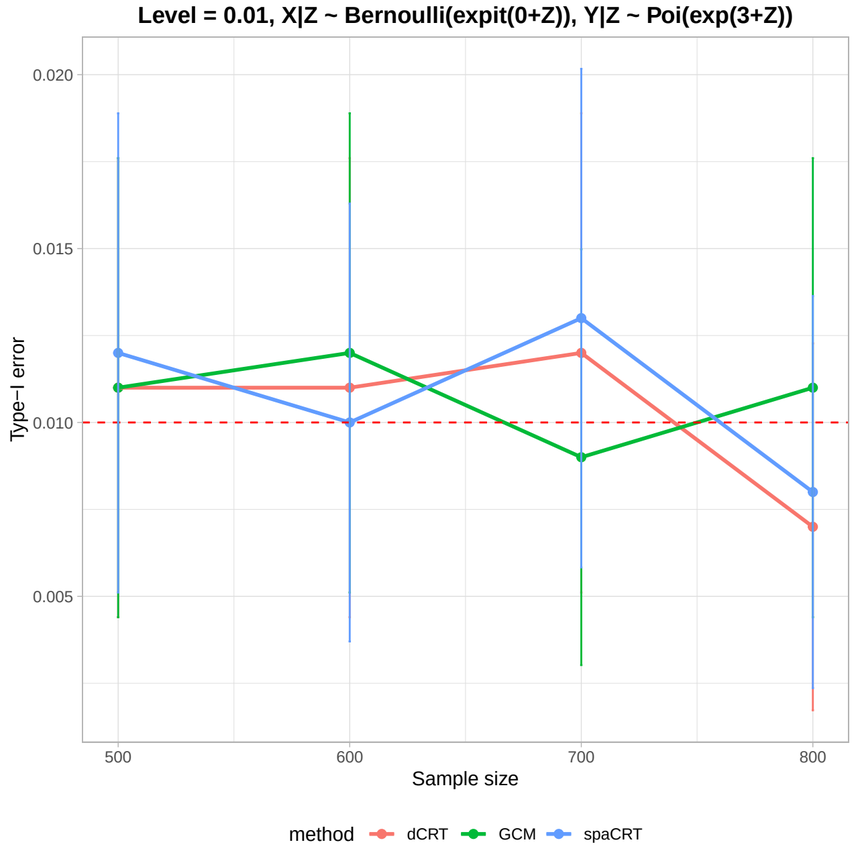

Level = 0.001, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

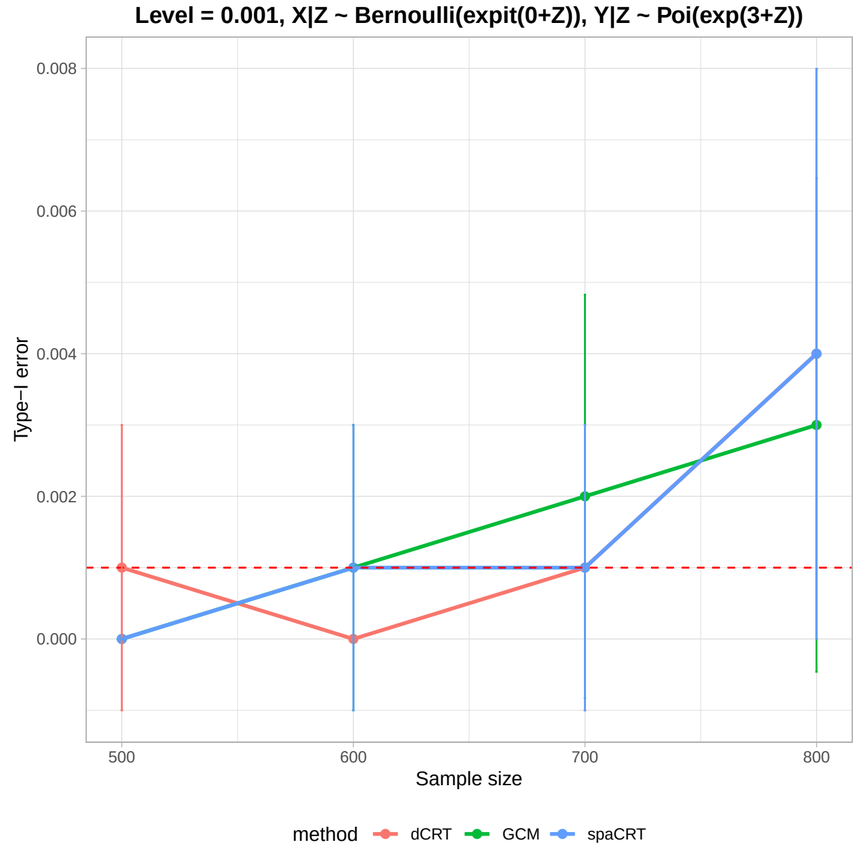

Level = 1e−04, X|Z ~ Bernoulli(expit(−2+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

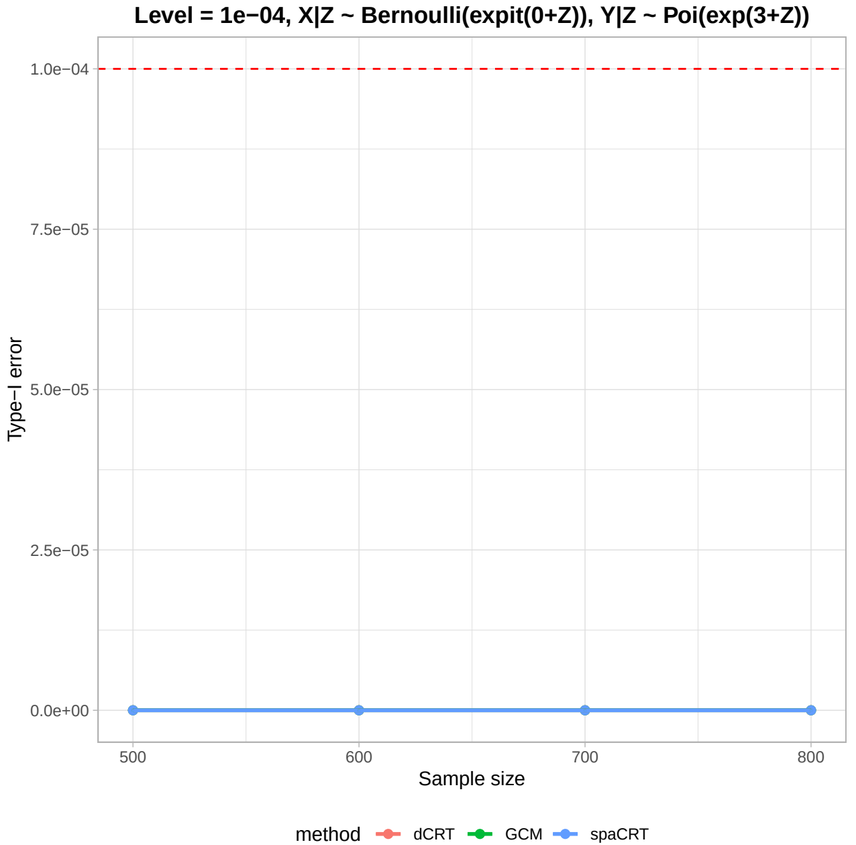

Level = 0.01, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.025
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

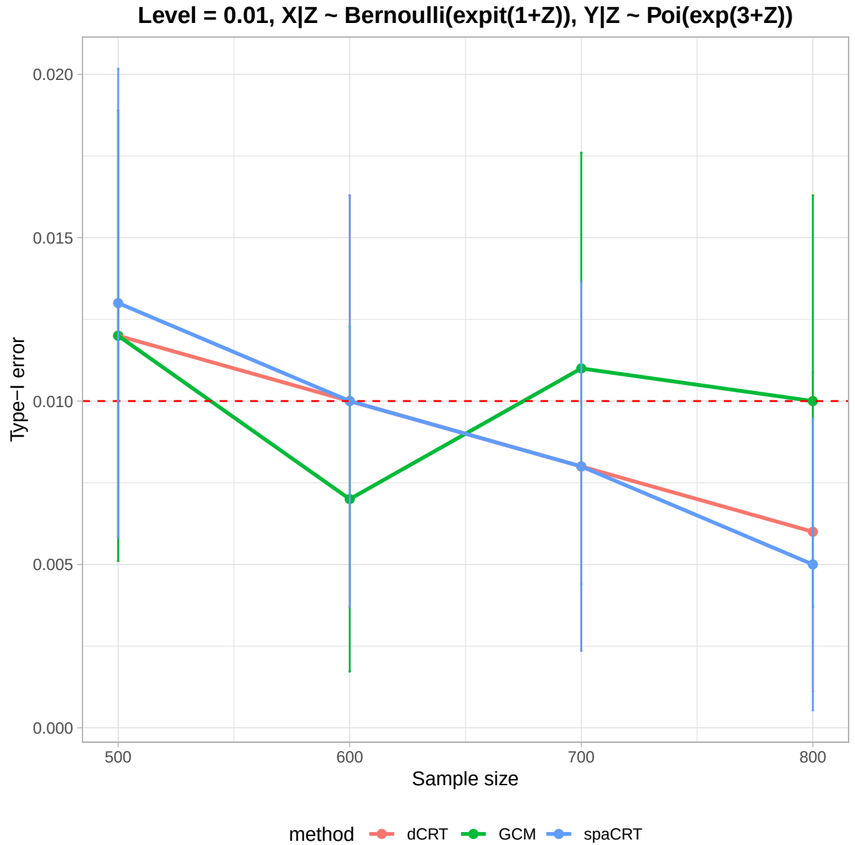

Level = 0.001, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

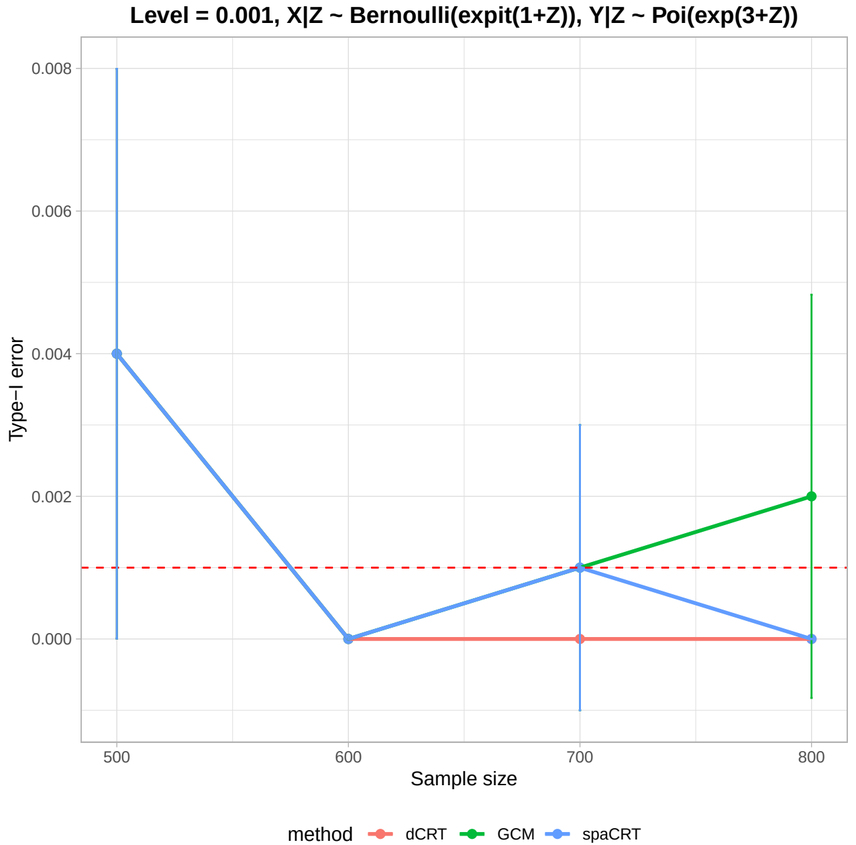

Level = 1e−04, X|Z ~ Bernoulli(expit(−1+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

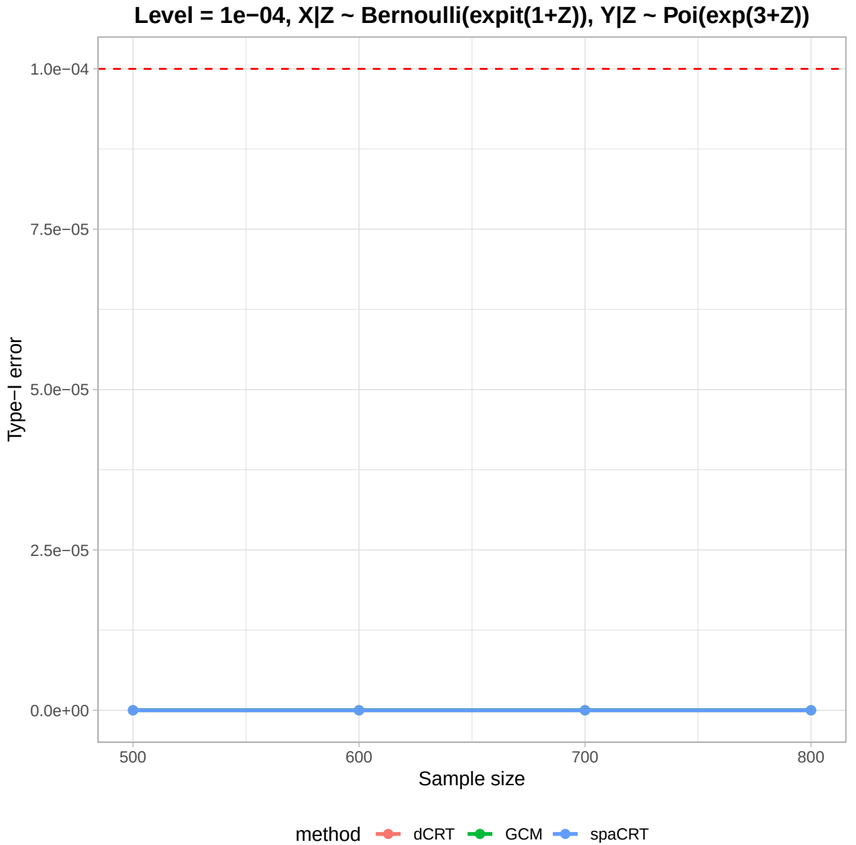

Level = 0.01, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.020
0.015
0.010
0.005
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

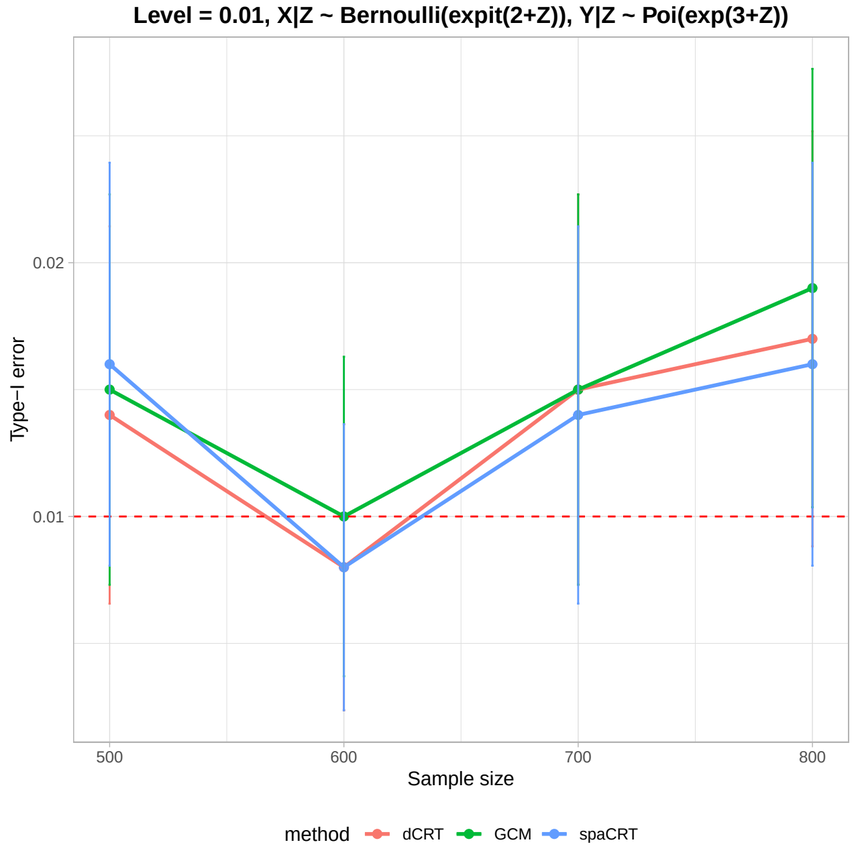

Level = 0.001, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.008
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

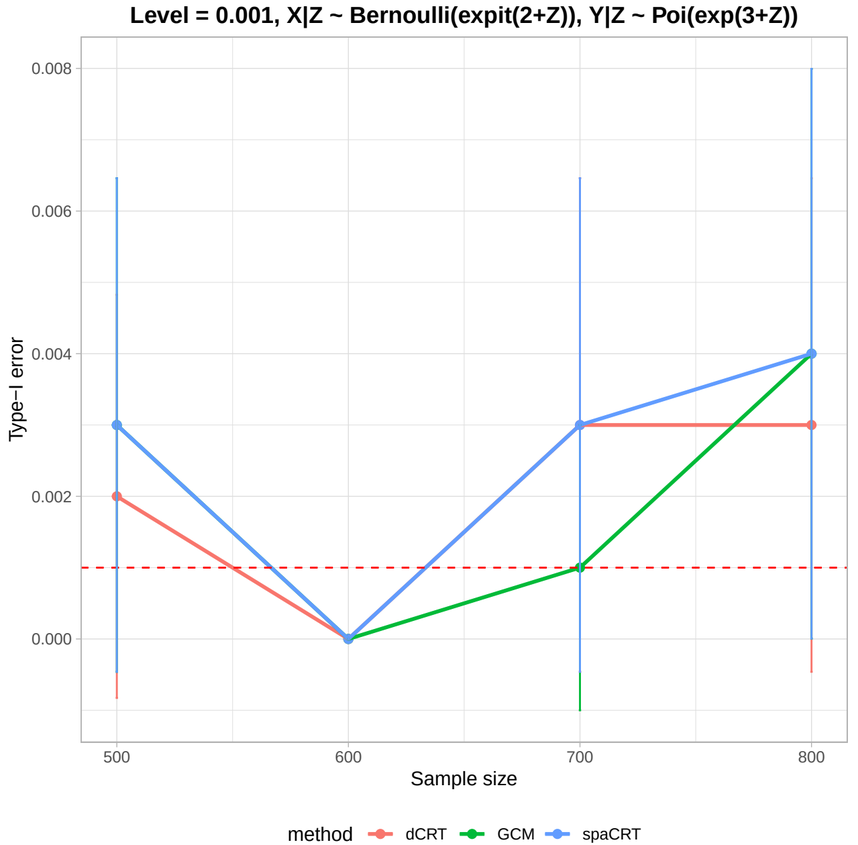

Level = 1e−04, X|Z ~ Bernoulli(expit(0+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

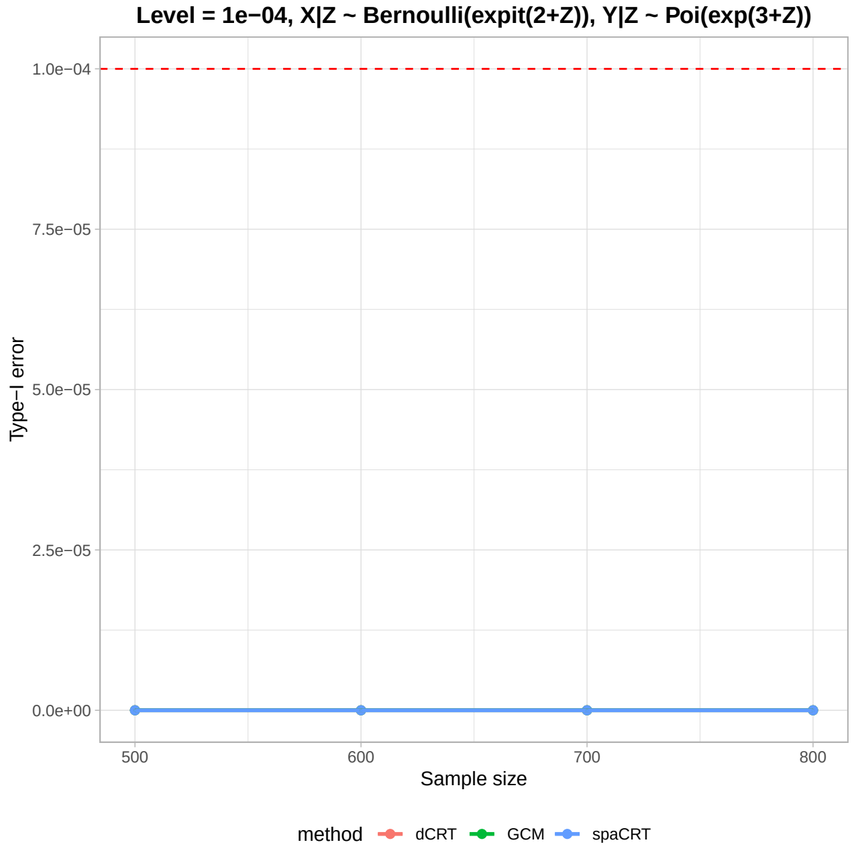

Level = 0.01, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.020
0.015
0.010
0.005
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

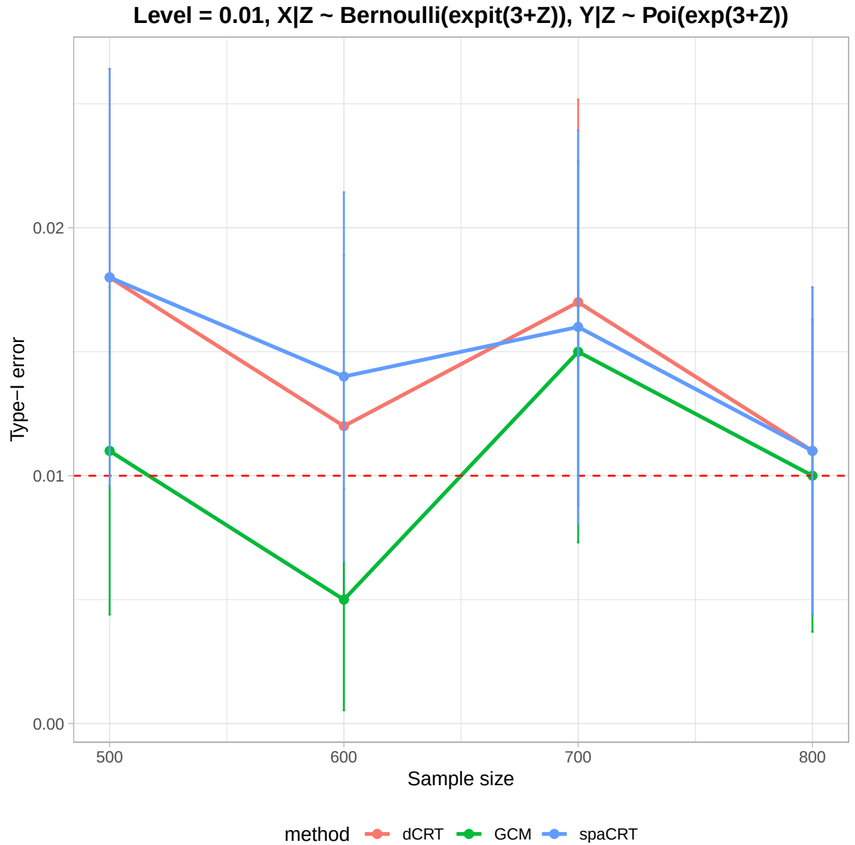

Level = 0.001, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.008
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

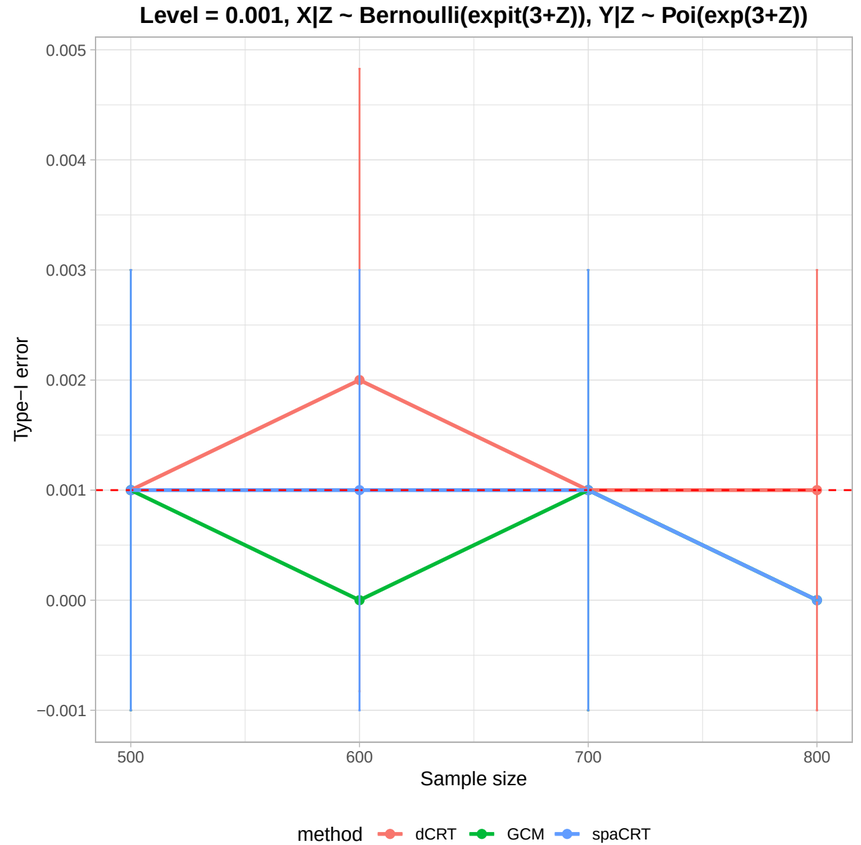

Level = 1e−04, X|Z ~ Bernoulli(expit(1+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT

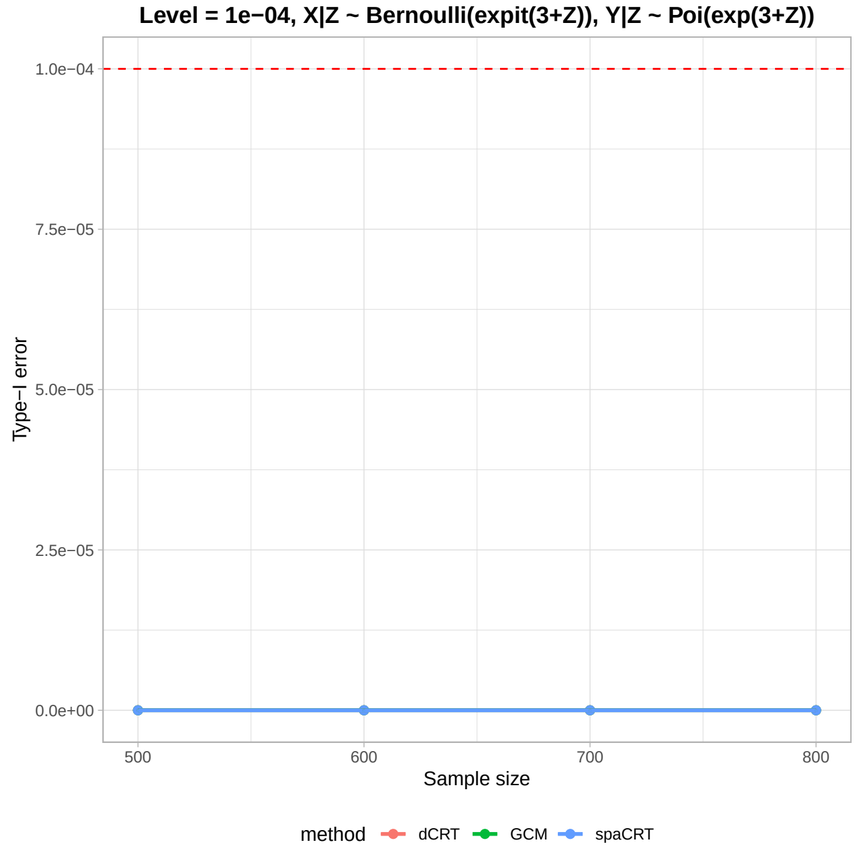

Level = 0.01, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.02
0.01
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT


Level = 0.001, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.008
0.006
0.004
0.002
0.000
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT


Level = 1e−04, X|Z ~ Bernoulli(expit(2+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT


Level = 0.01, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.02
0.01
0.00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT


Level = 0.001, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
0.005
0.004
0.003
0.002
0.001
0.000
−0.001
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT


Level = 1e−04, X|Z ~ Bernoulli(expit(3+Z)), Y|Z ~ Poi(exp(3+Z))
Type−I error
1.0e−04
7.5e−05
5.0e−05
2.5e−05
0.0e+00
500
600
700
800
Sample size
method
dCRT
GCM
spaCRT