Supplementary materials for Application of Bayesian predictive probability for interim futility analysis in single-arm early phase II trial

(Additional report)

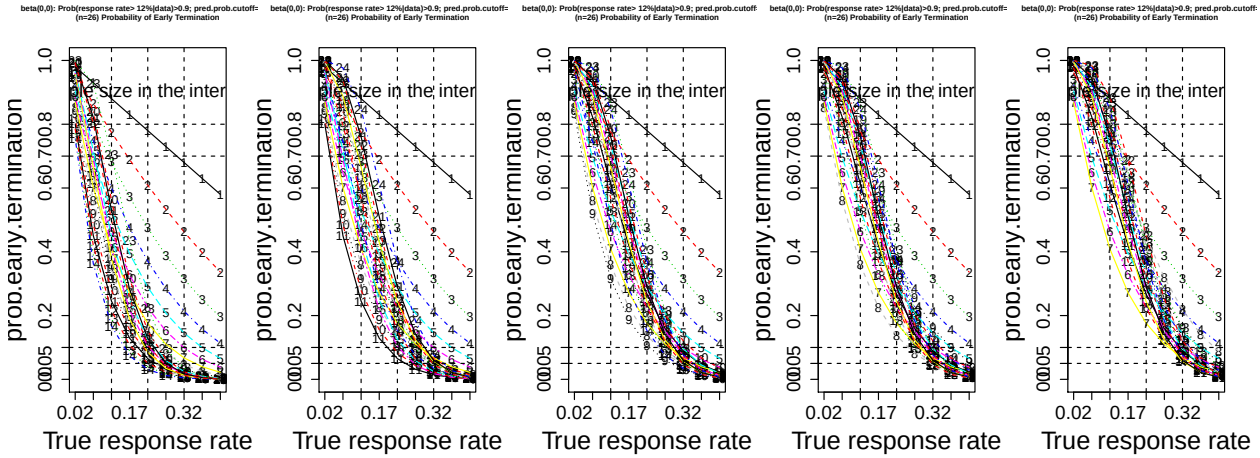
Dung-Tsa Chen, et. al.

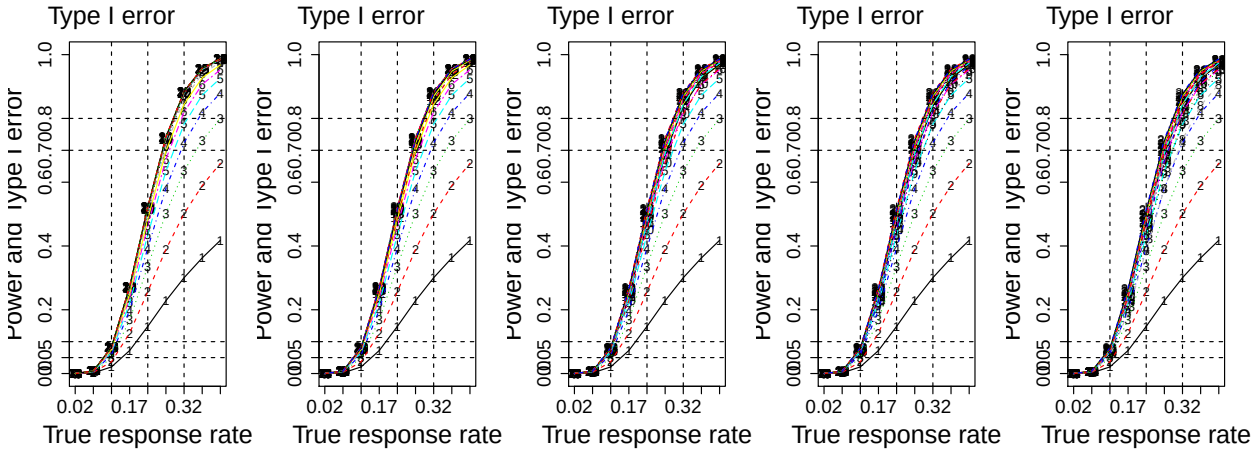
Date: 03/16/2018

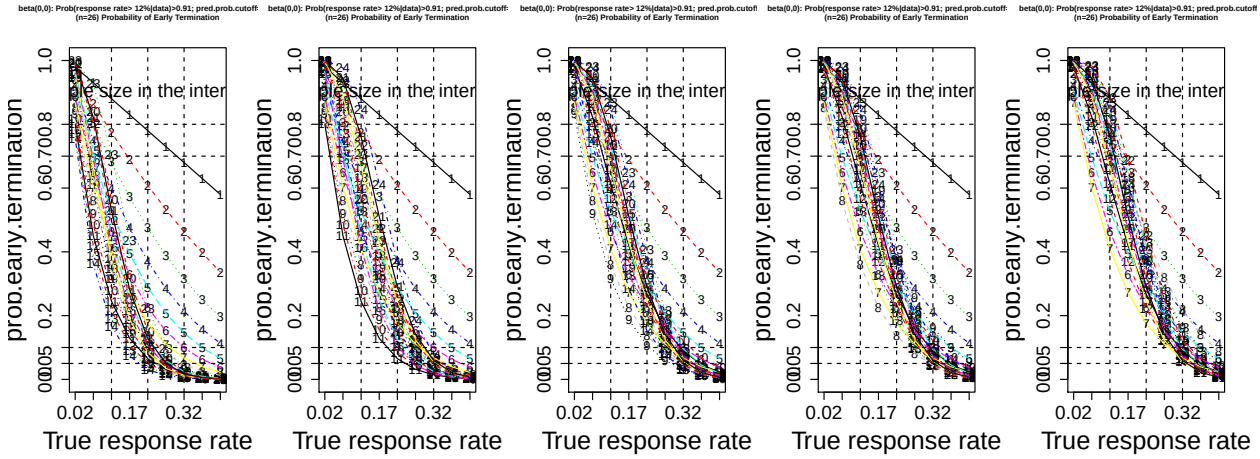
Supplementary Figure 3 (Fig.S3): Evaluation of differential priors

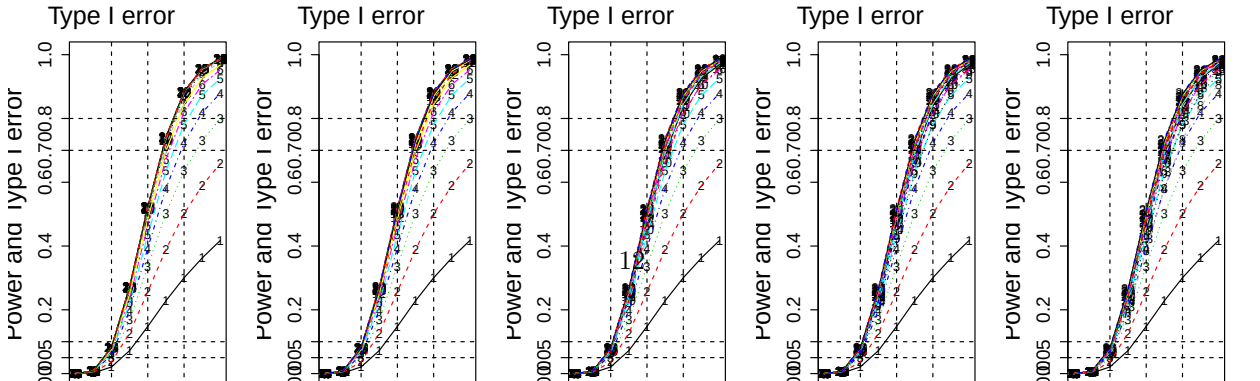
Results of prior distribution of response rate: The example in the main text uses a non-informative beta prior, beta(1,1), for the response rate to evaluate the performance. Here we further explore a series of beta prior distributions: (i) two non-informative priors, with beta(c,c): c=0 (Haldane prior) and 1 (Bayes prior); (ii) an unfavorable prior (more drug-resistant) with beta(0,1), equivalent to one-sided Fisher exact test; (iii) a favorable prior (more drug-sensitive) with beta(1,0); and (iv) a prior based on the null-hypothesis's response rate with standard deviation of 0.1 (i.e., beta(1.15, 8.41) for the 12% response rate). Results in the figures below show the smallest total sample size is 27 subjects in order to reach power above 80% and type I error below 5% by all the priors depending on γ and δ. Specifically, this condition (i.e., power>80% and type I error<5% at n=27) holds for γ=0.01 to 0.2 in most priors. For δ, to retain the same condition, all non-informative priors, the unfavorable prior, and the null-hypothesis's prior require δ in a range of 0.90-0.97 while the favorable prior needs δ to be 0.97-0.98. Regarding the interim analysis sample size, n_1, high PET occurs only when the interim analysis is performed at a late stage, such as n1=17 (17/27=63%) for a targeted PET>60%. On the other hand, for a moderate targeted PET, 45%-50%, all the priors give the smallest n1 of 14 (14/27=52%) for the interim analysis. When the interest is to have PET at least 70% with n_1 less than 50% of the total sample size, the smallest total sample size will increase to 29 subjects with the smallest n_1=14 (14/29=48%) in all priors except the favorable prior.

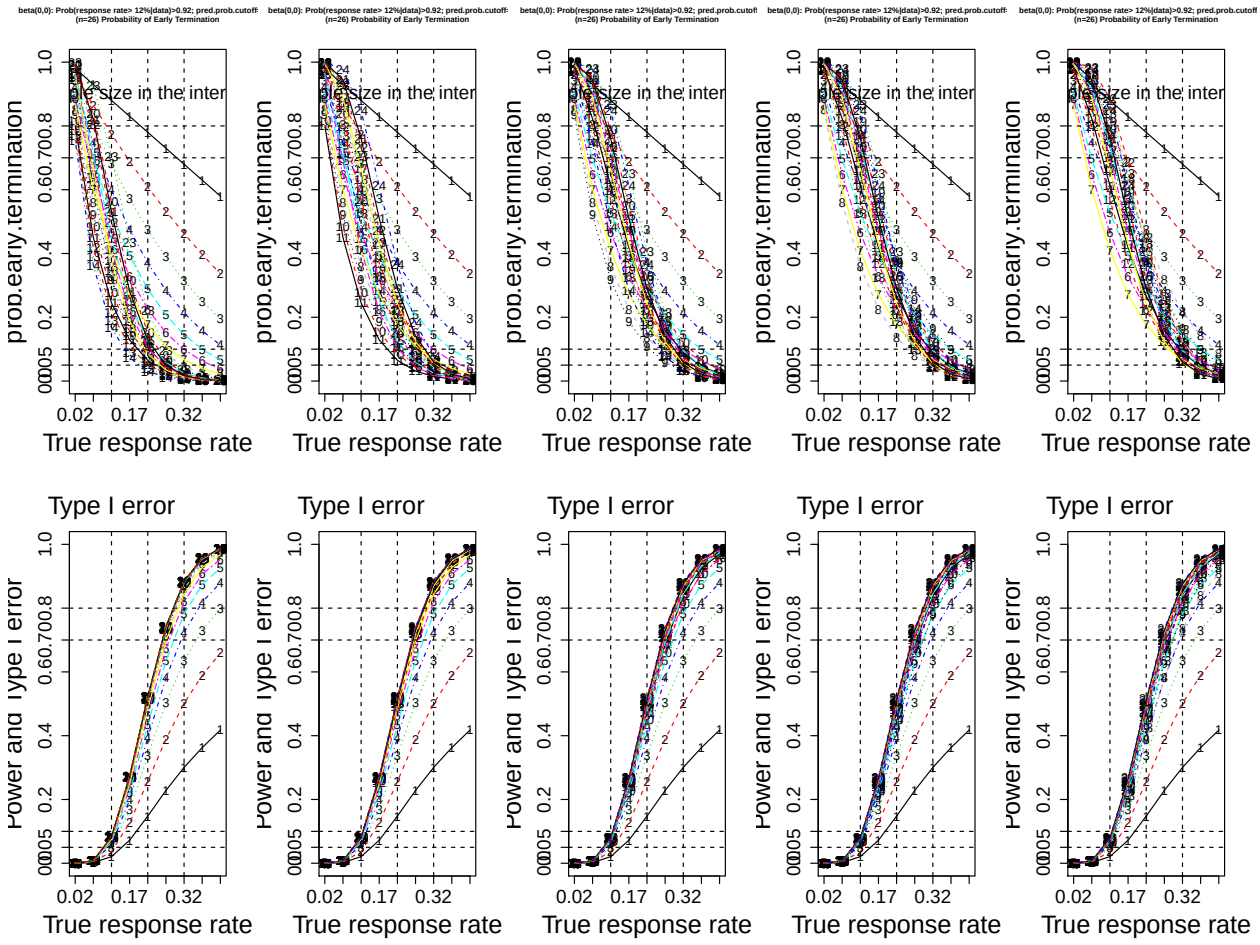
Prior Distribution: beta(0,0)

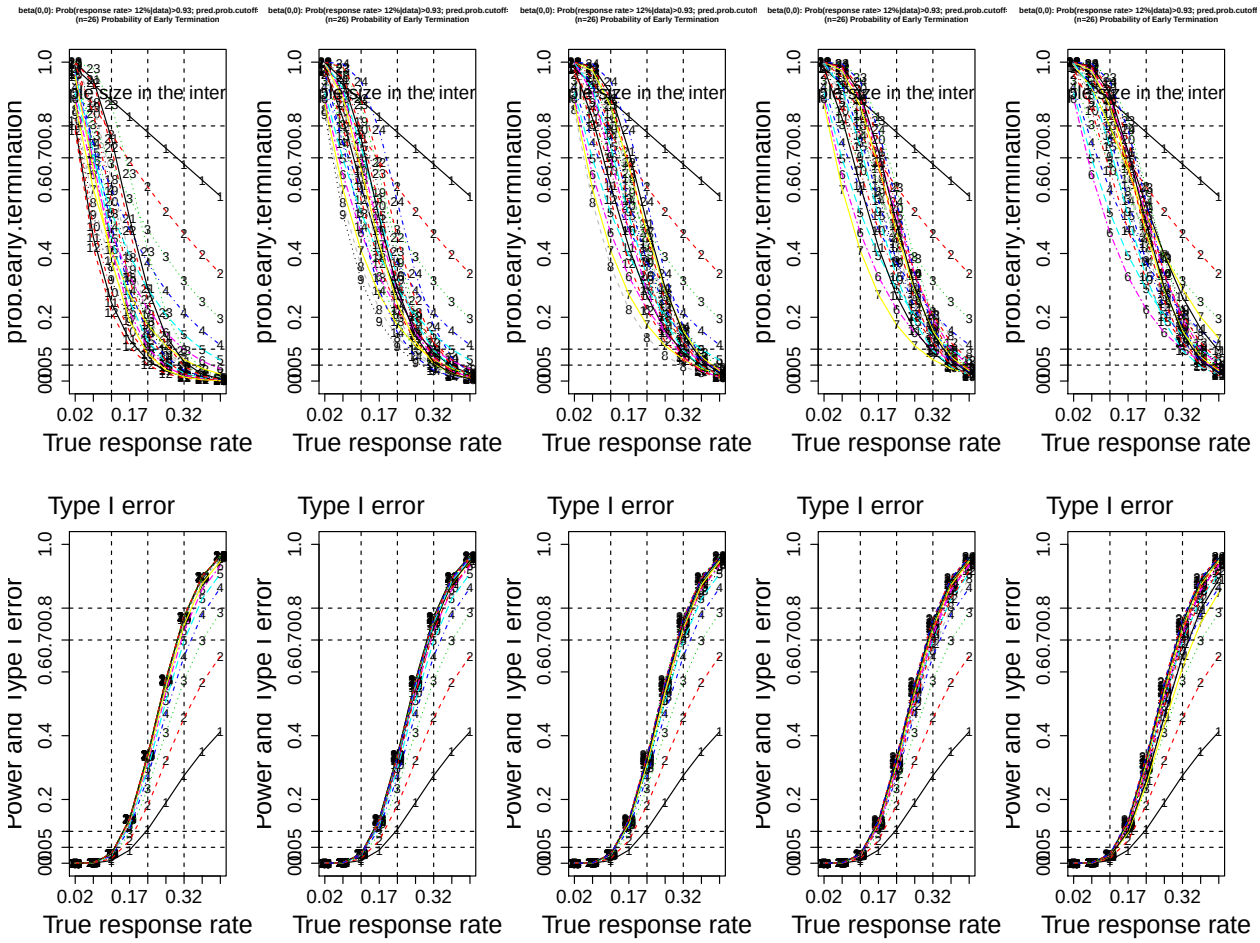


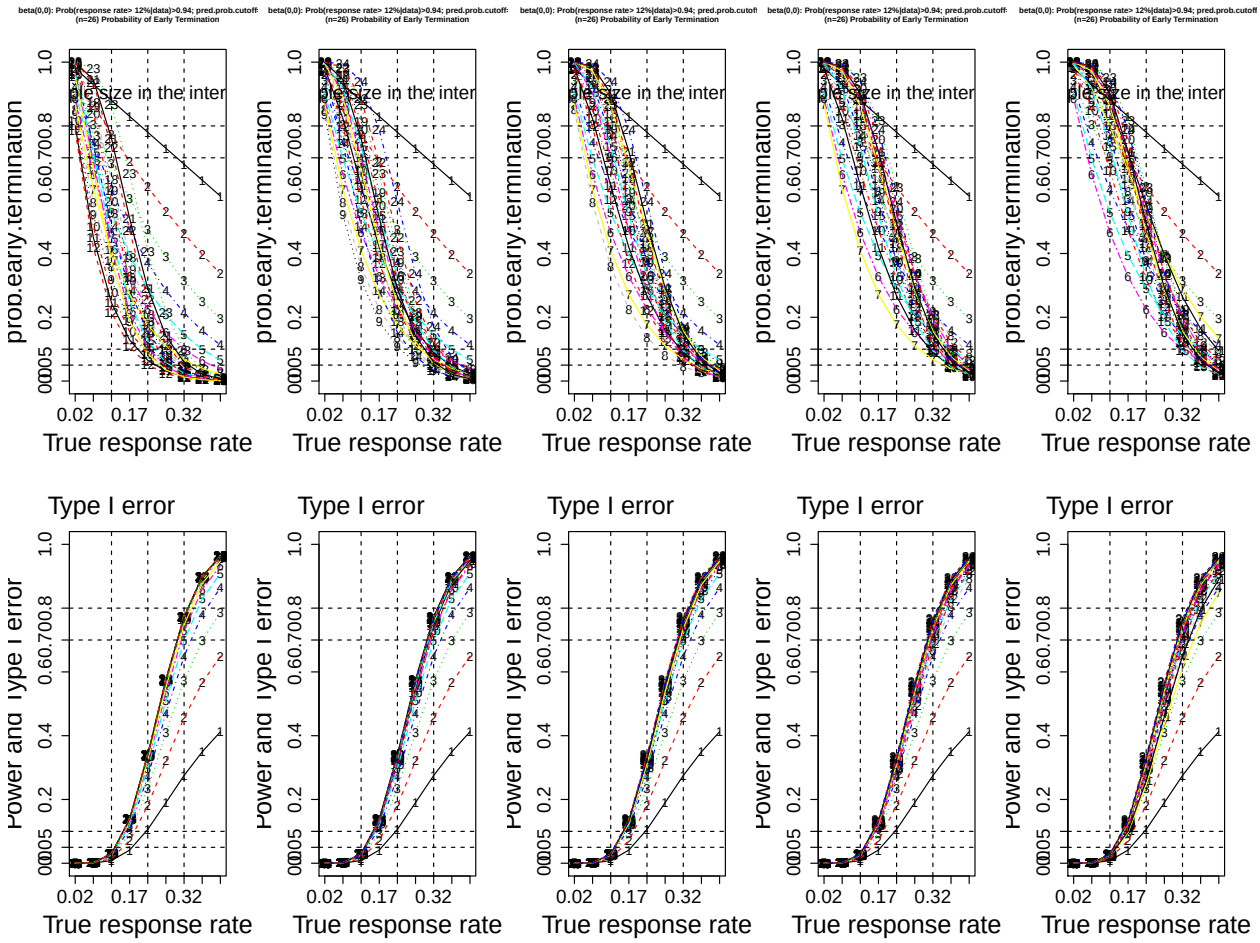


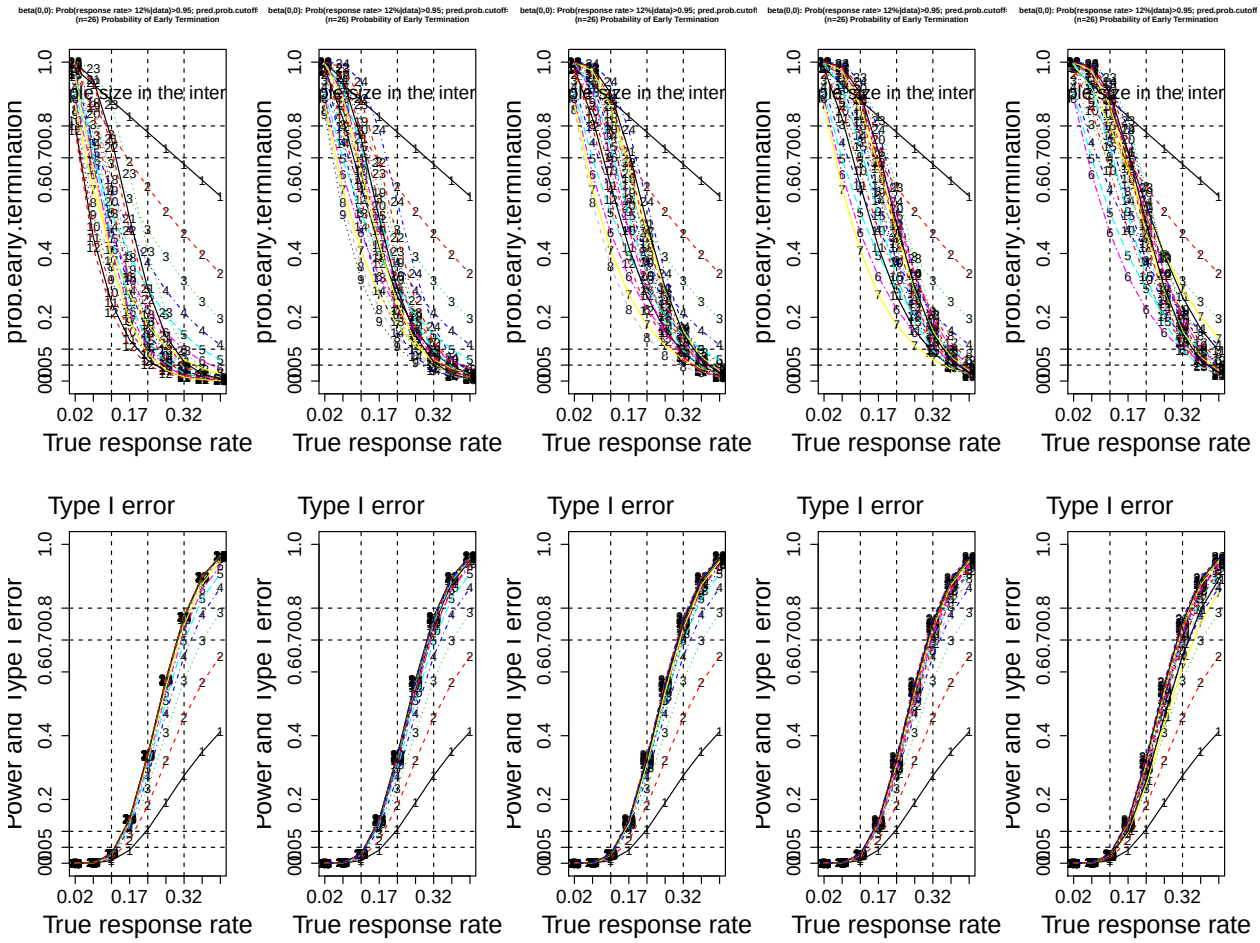


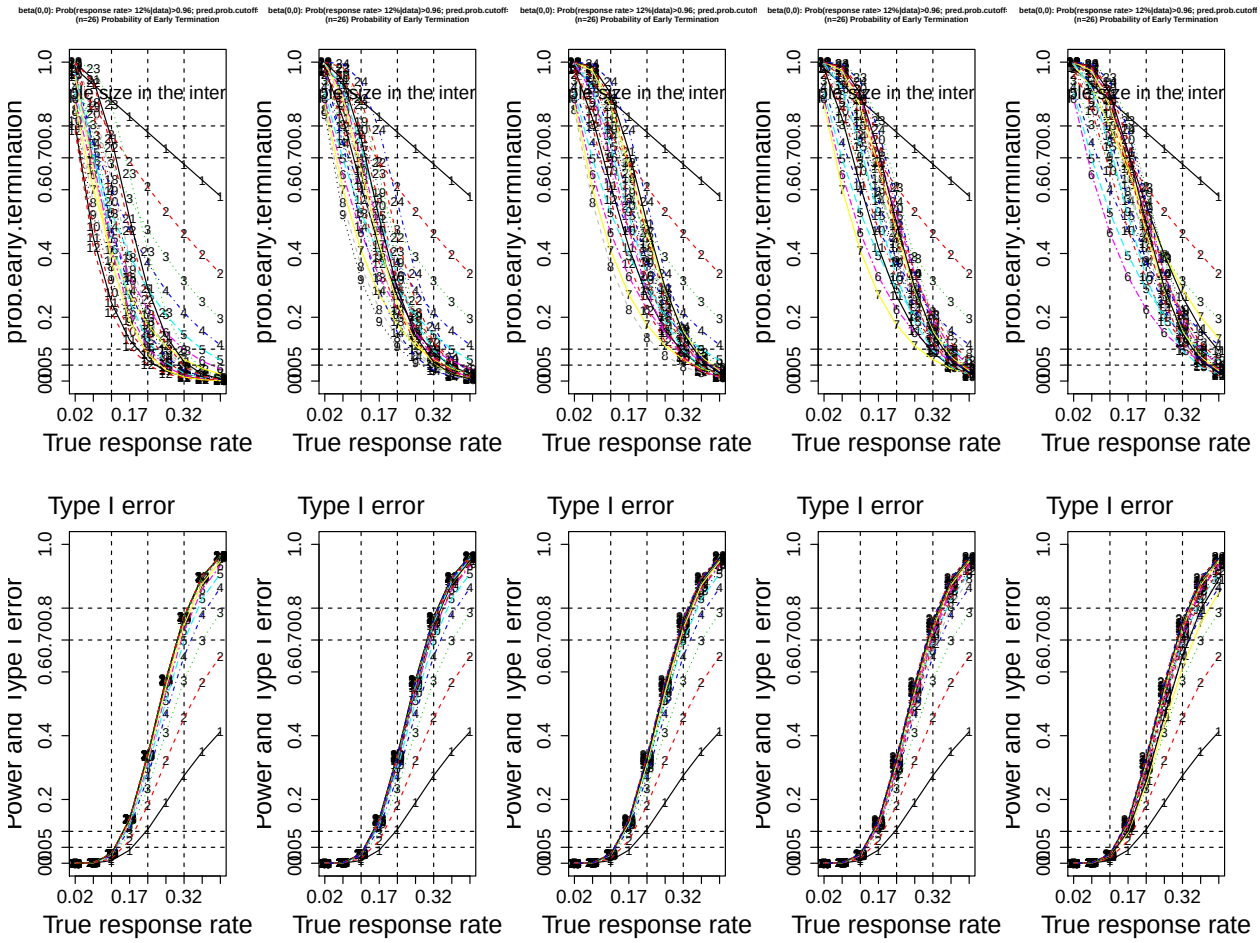


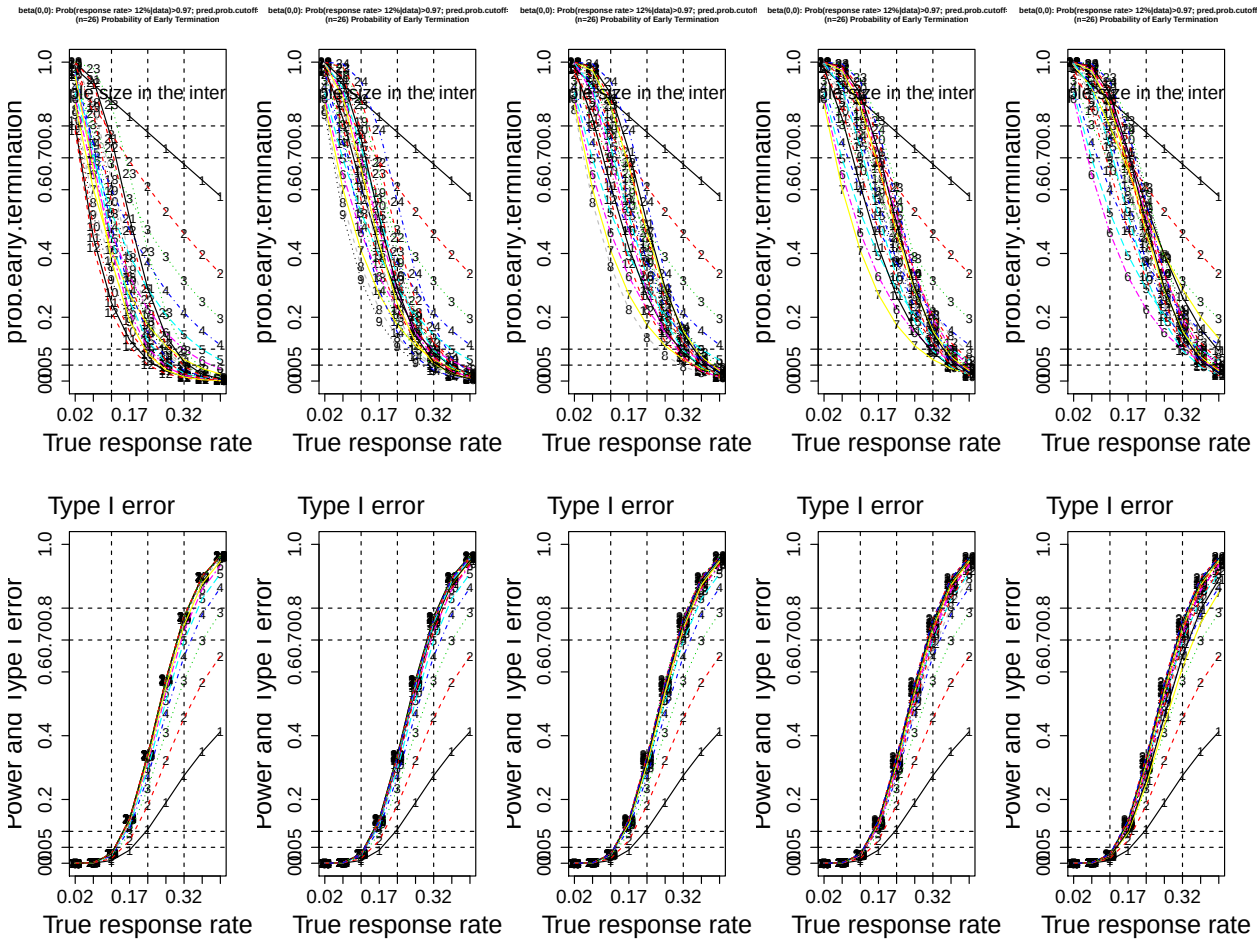

beta(0,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

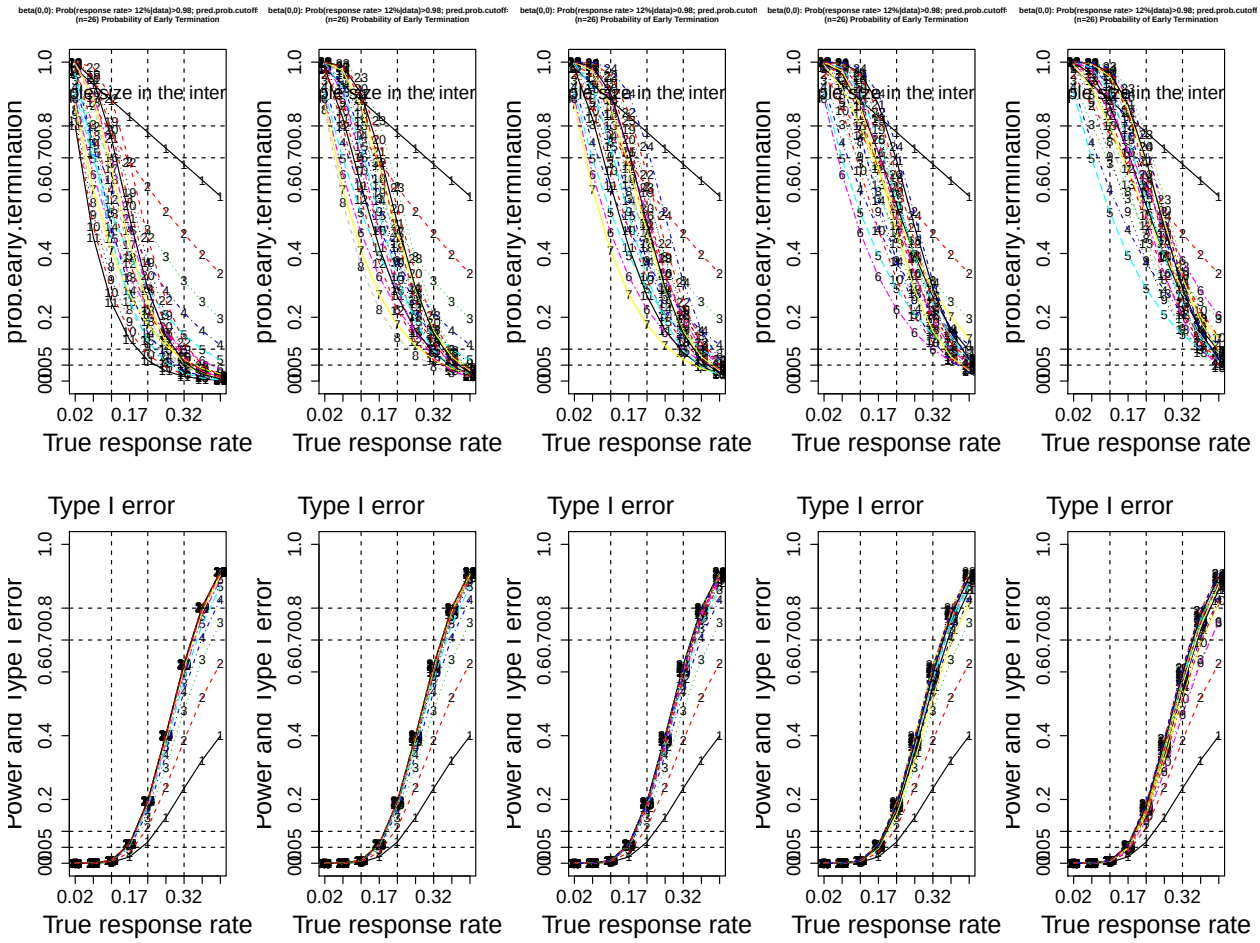

beta(0,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

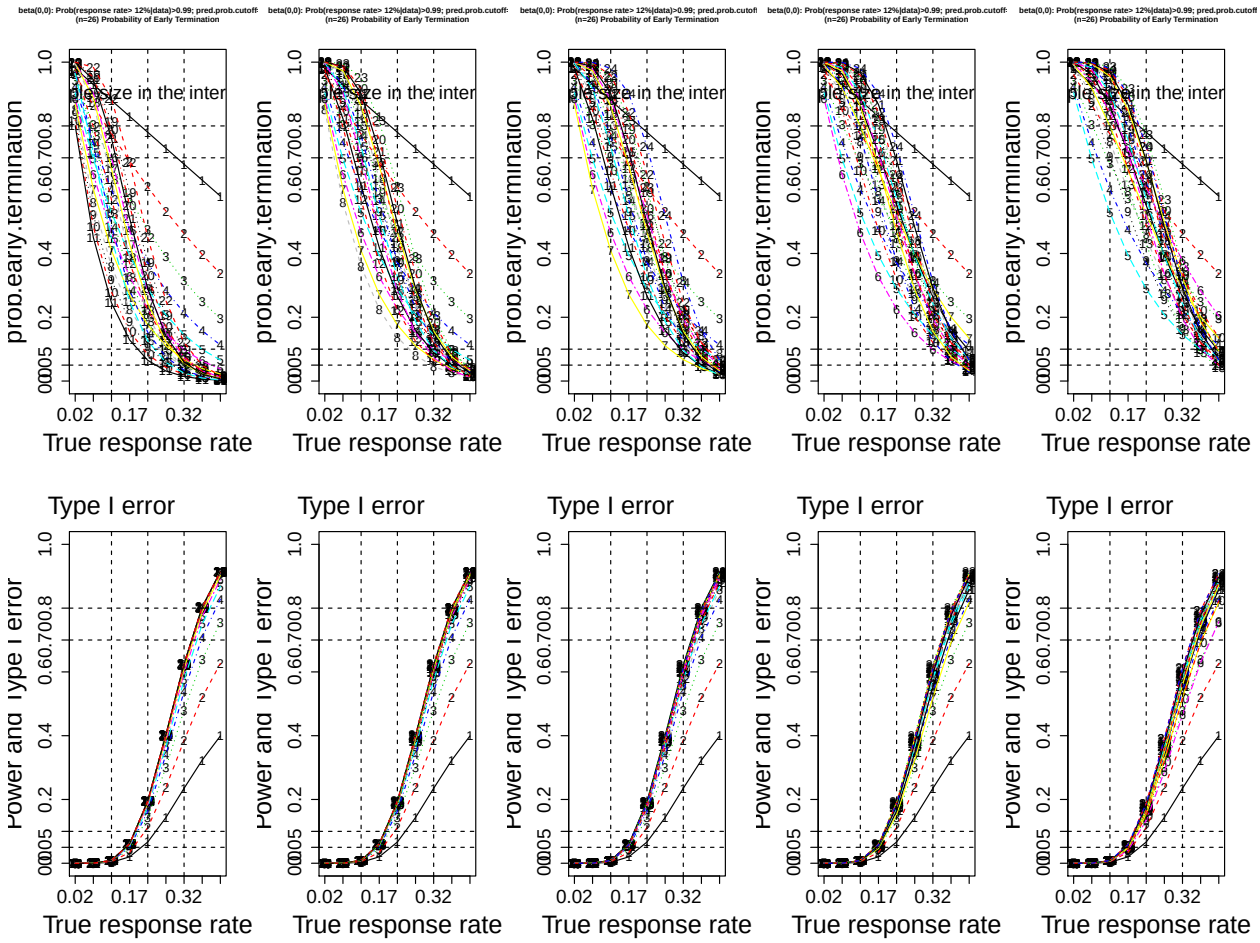

beta(0,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

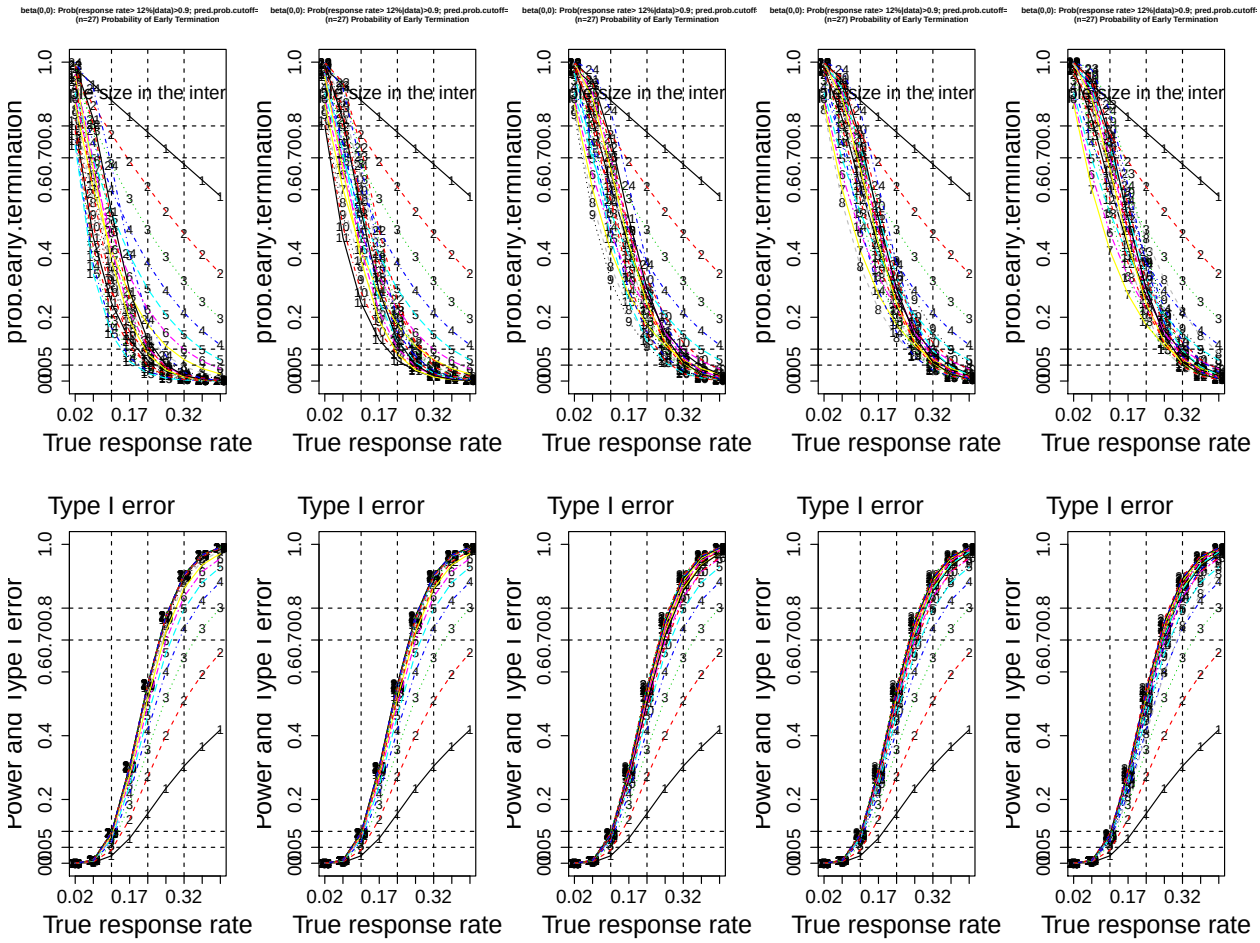

beta(0,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

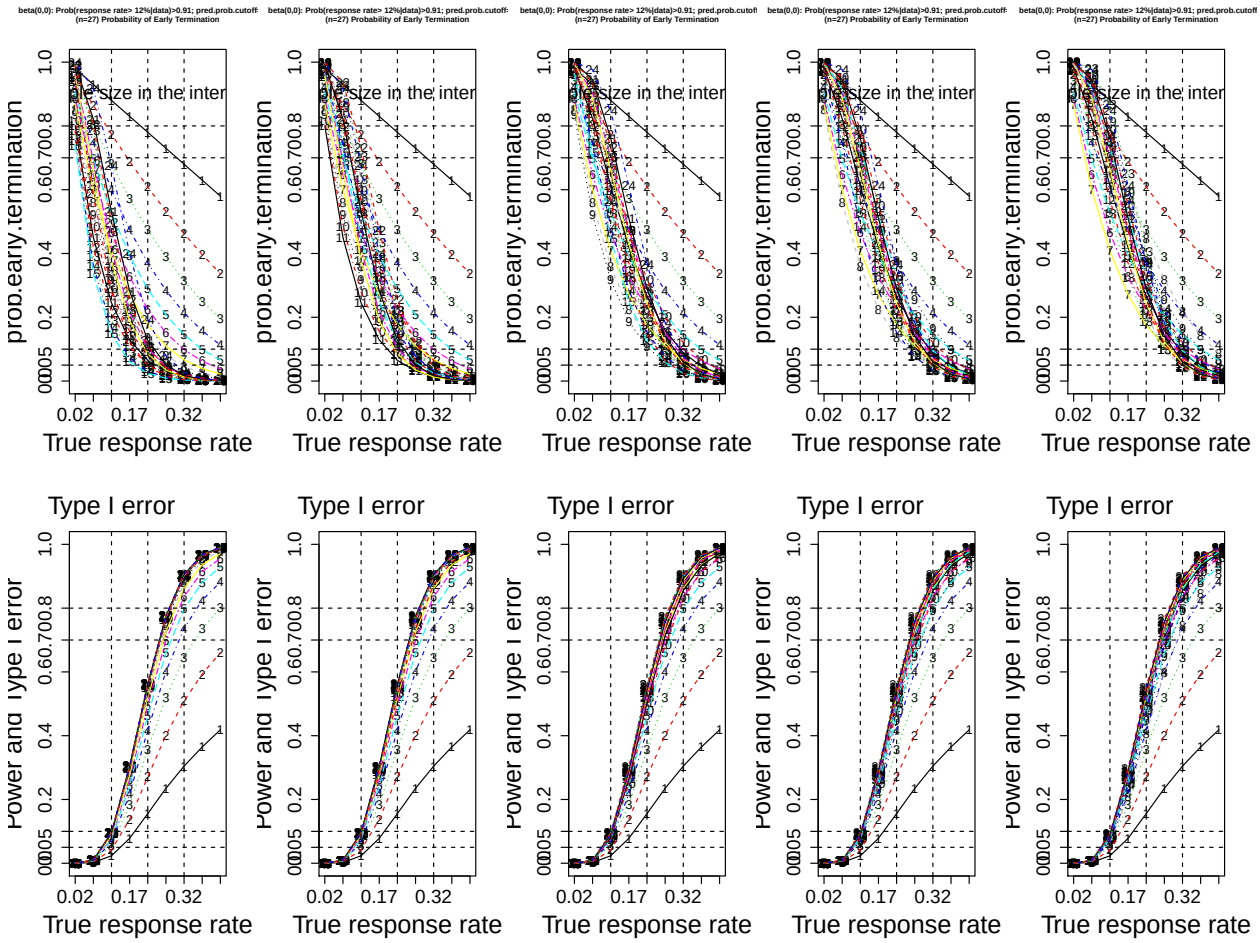

beta(0,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

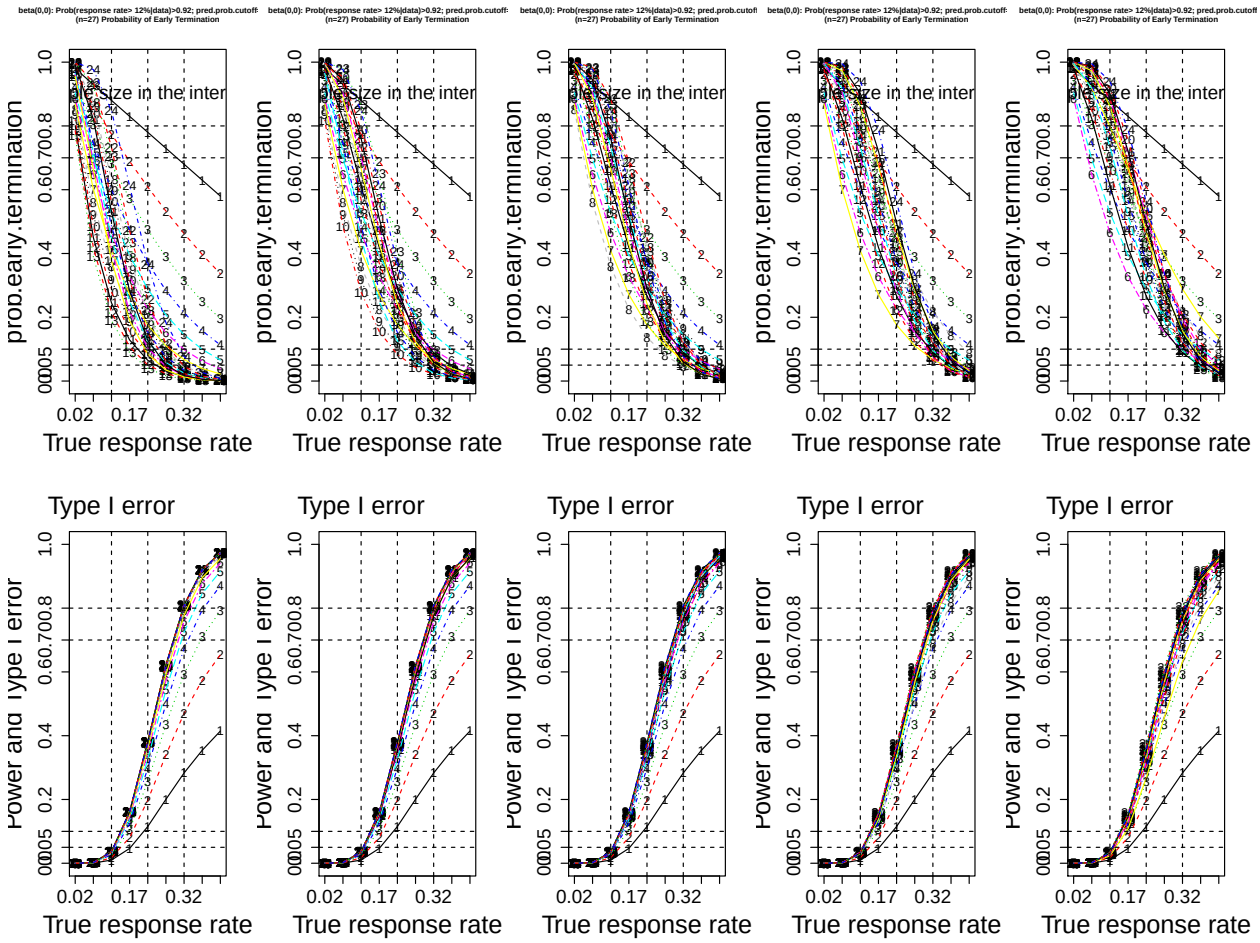

beta(0,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

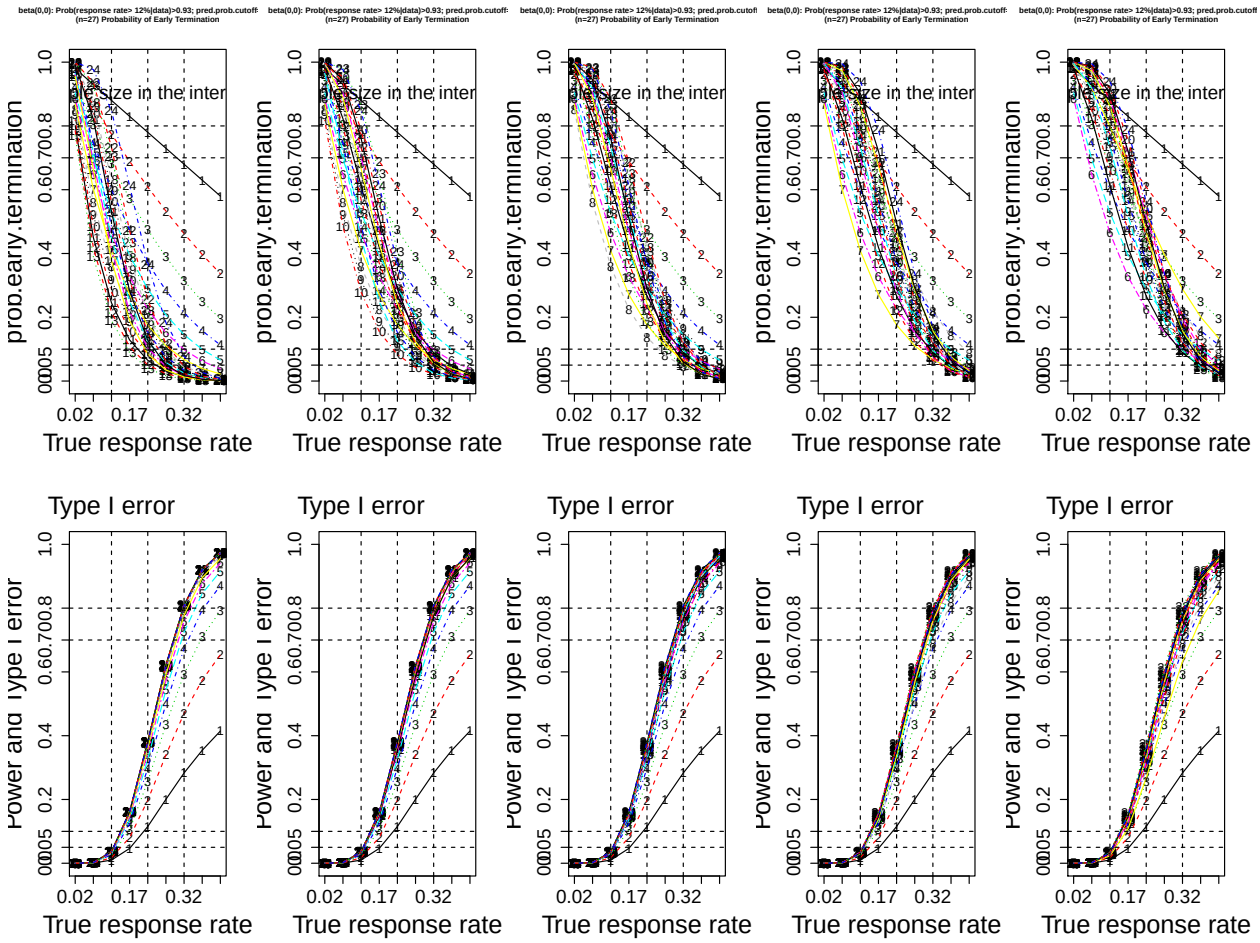

beta(0,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

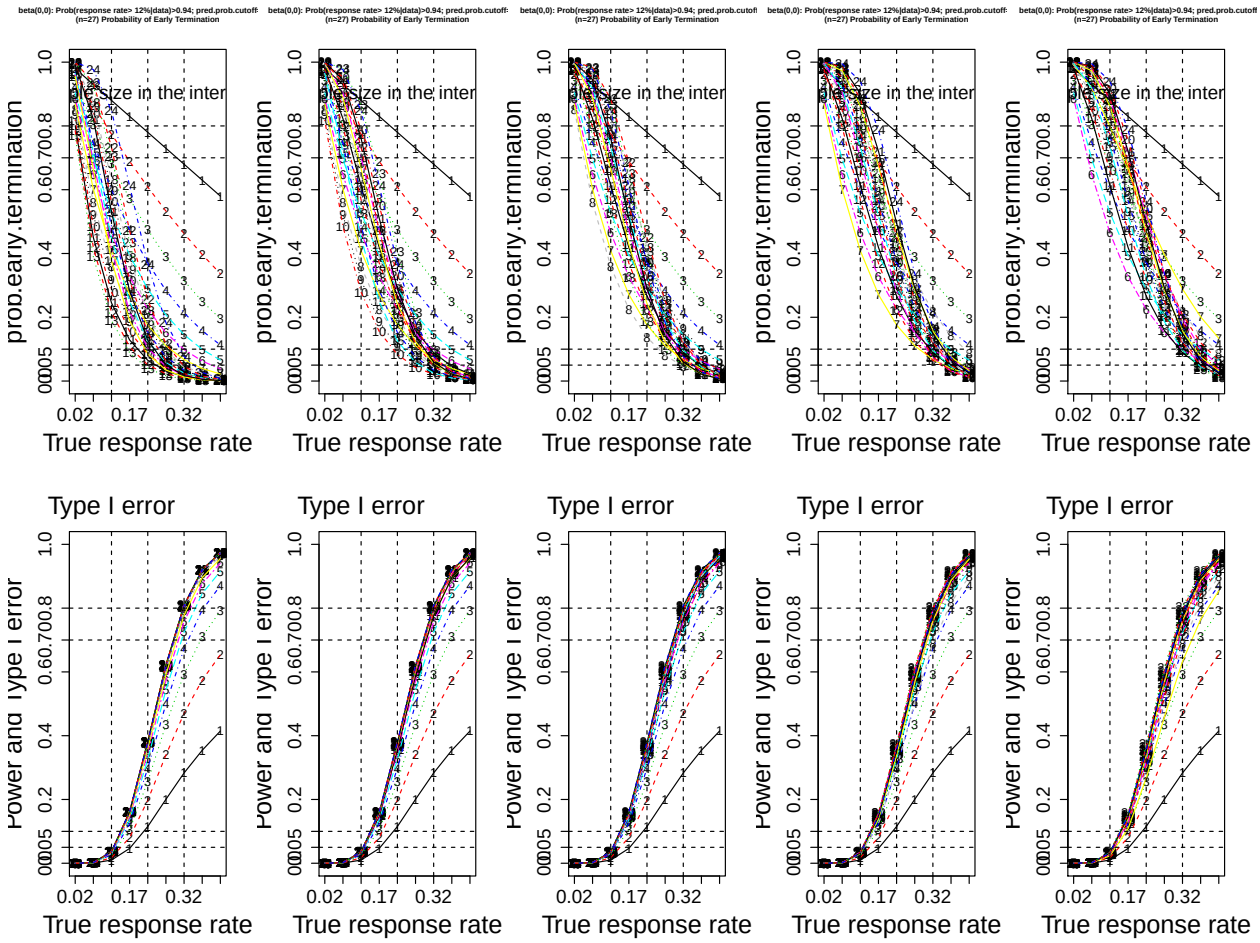

beta(0,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

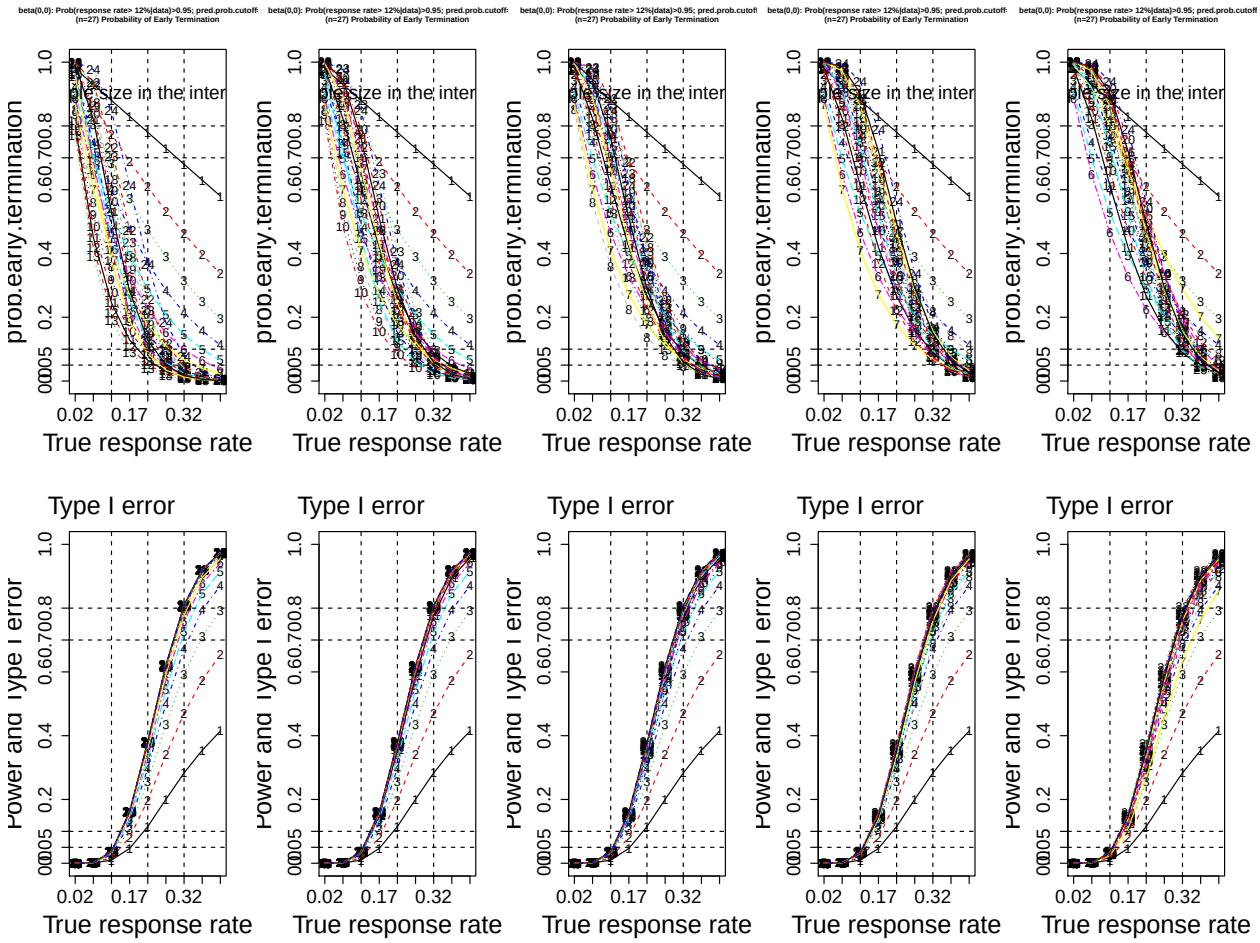

beta(0,0): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

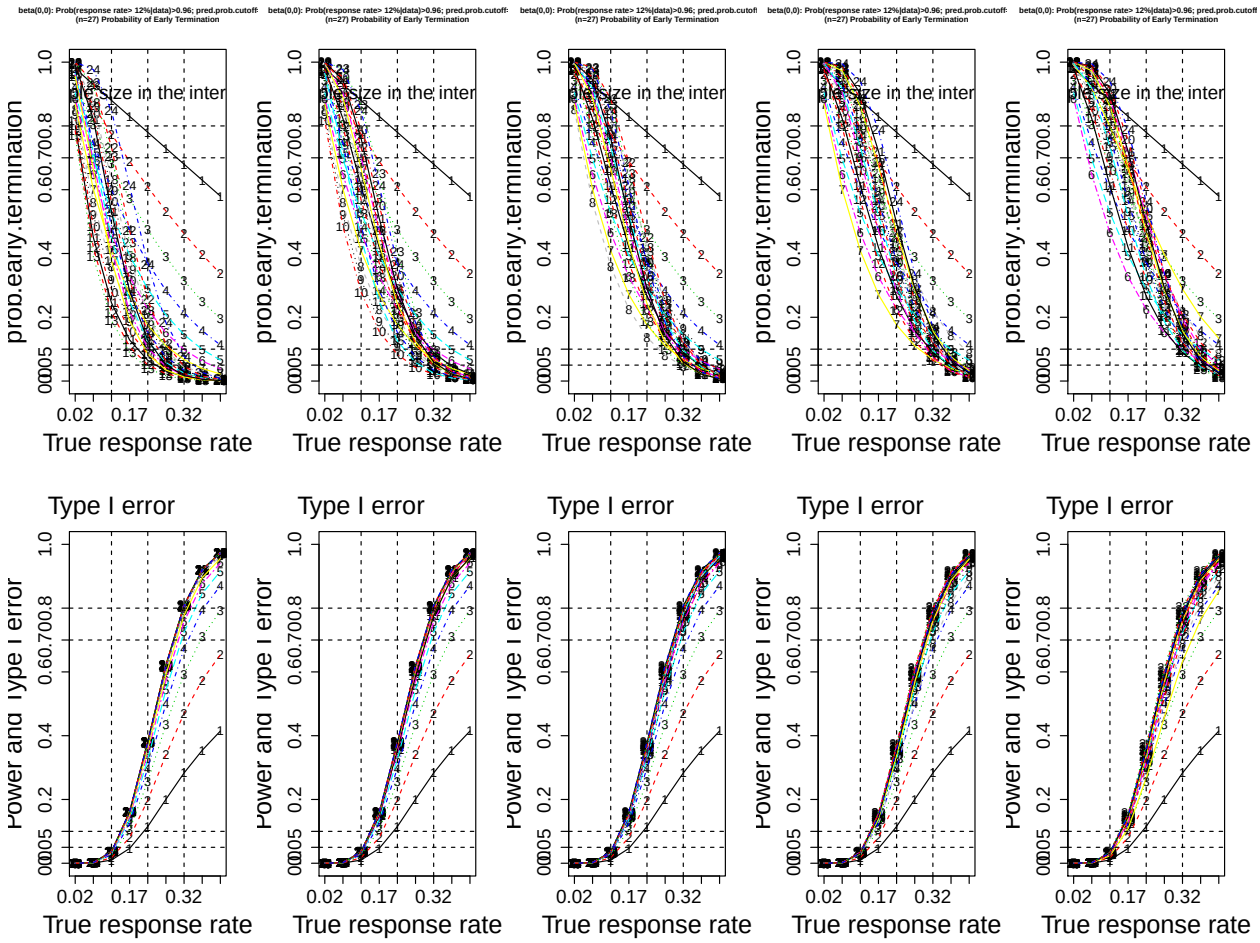

beta(0,0): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

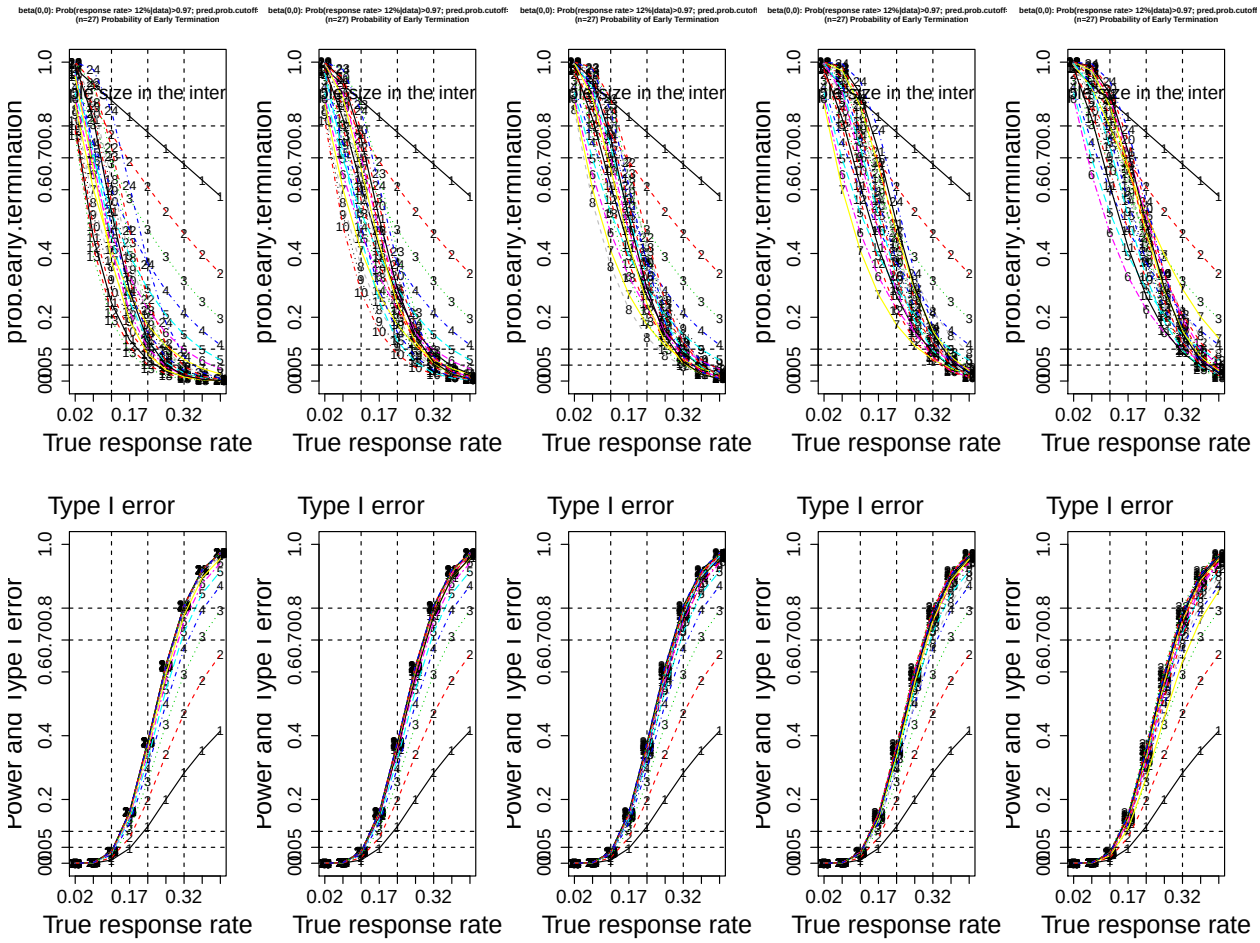

beta(0,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

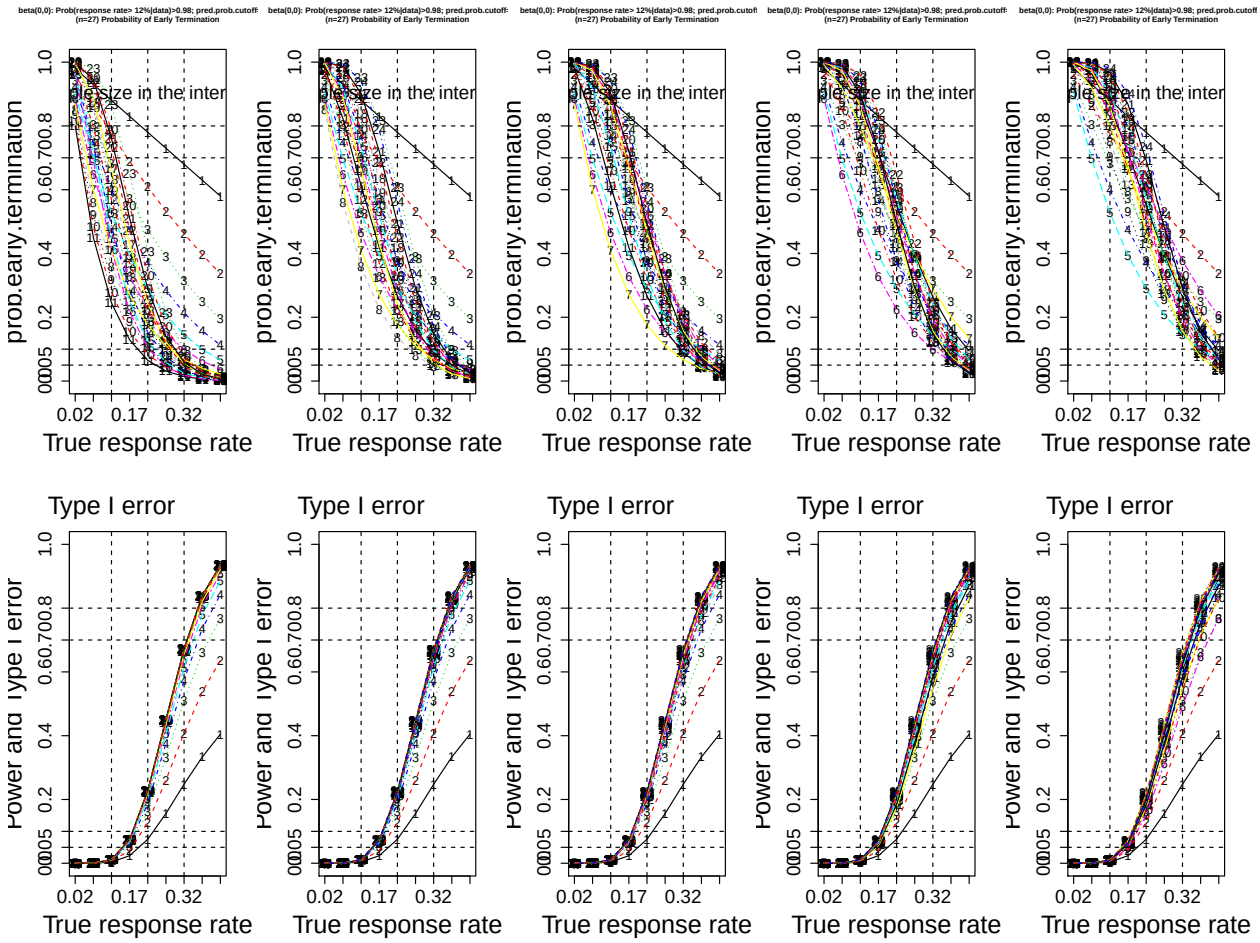

beta(0,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

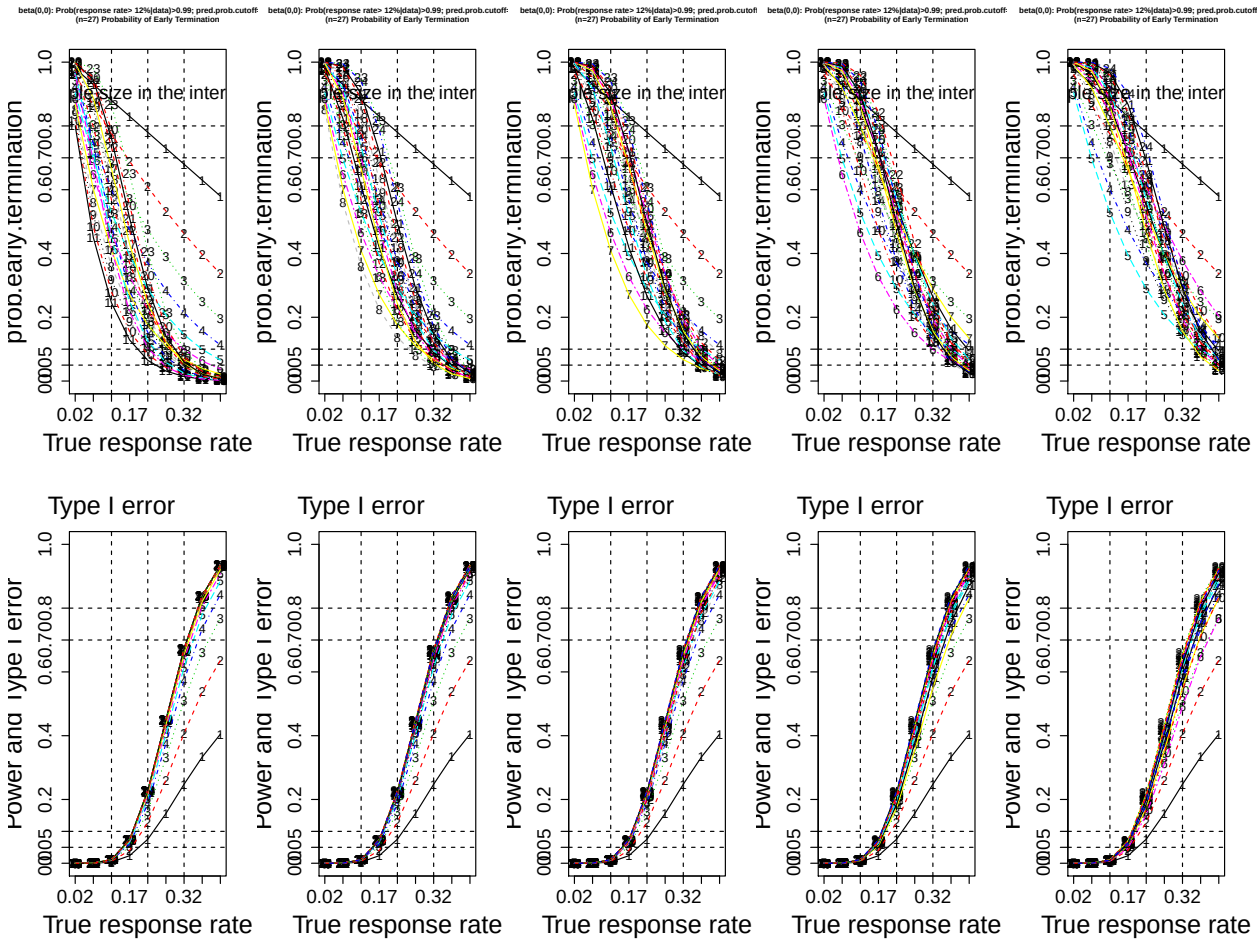

beta(0,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

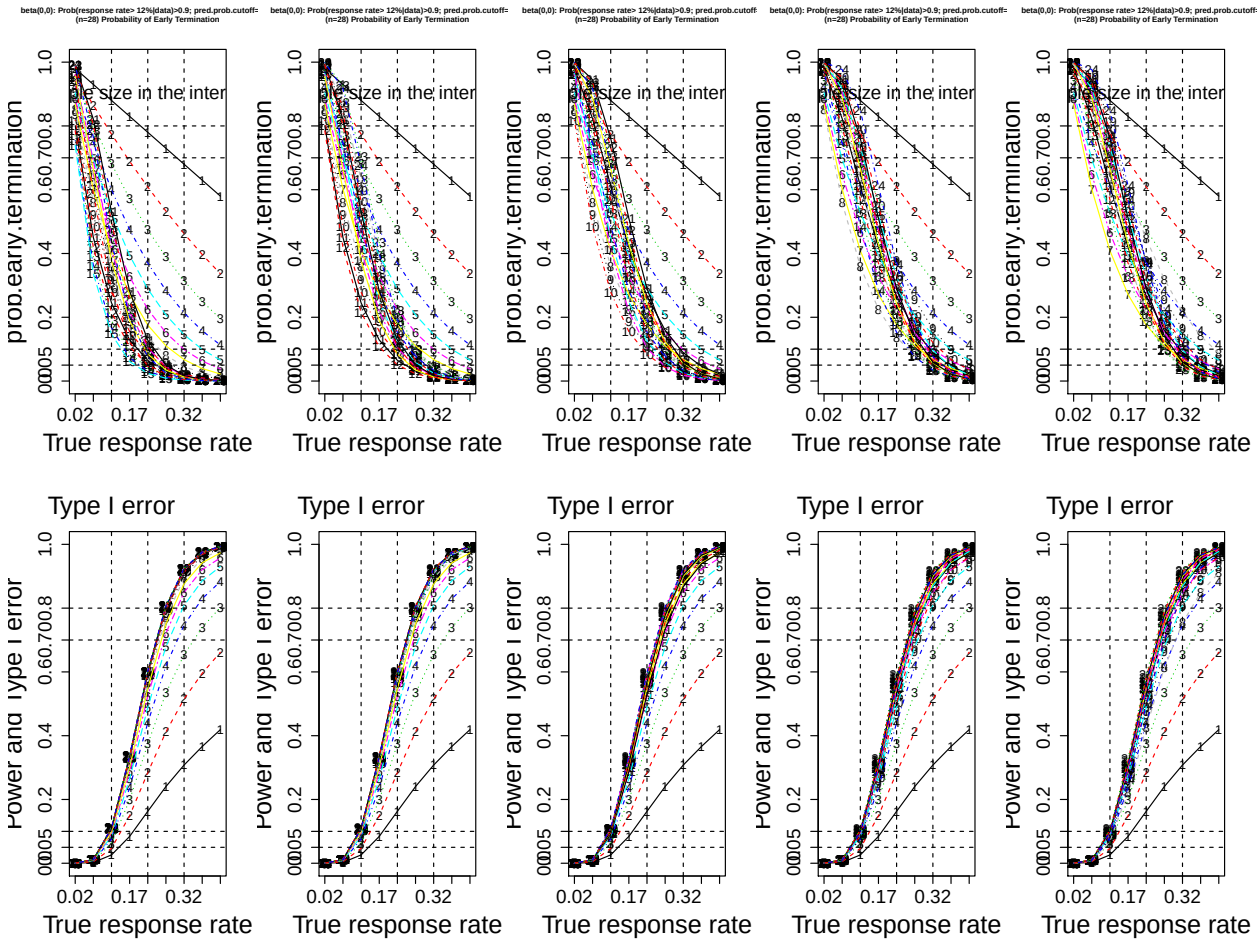

beta(0,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

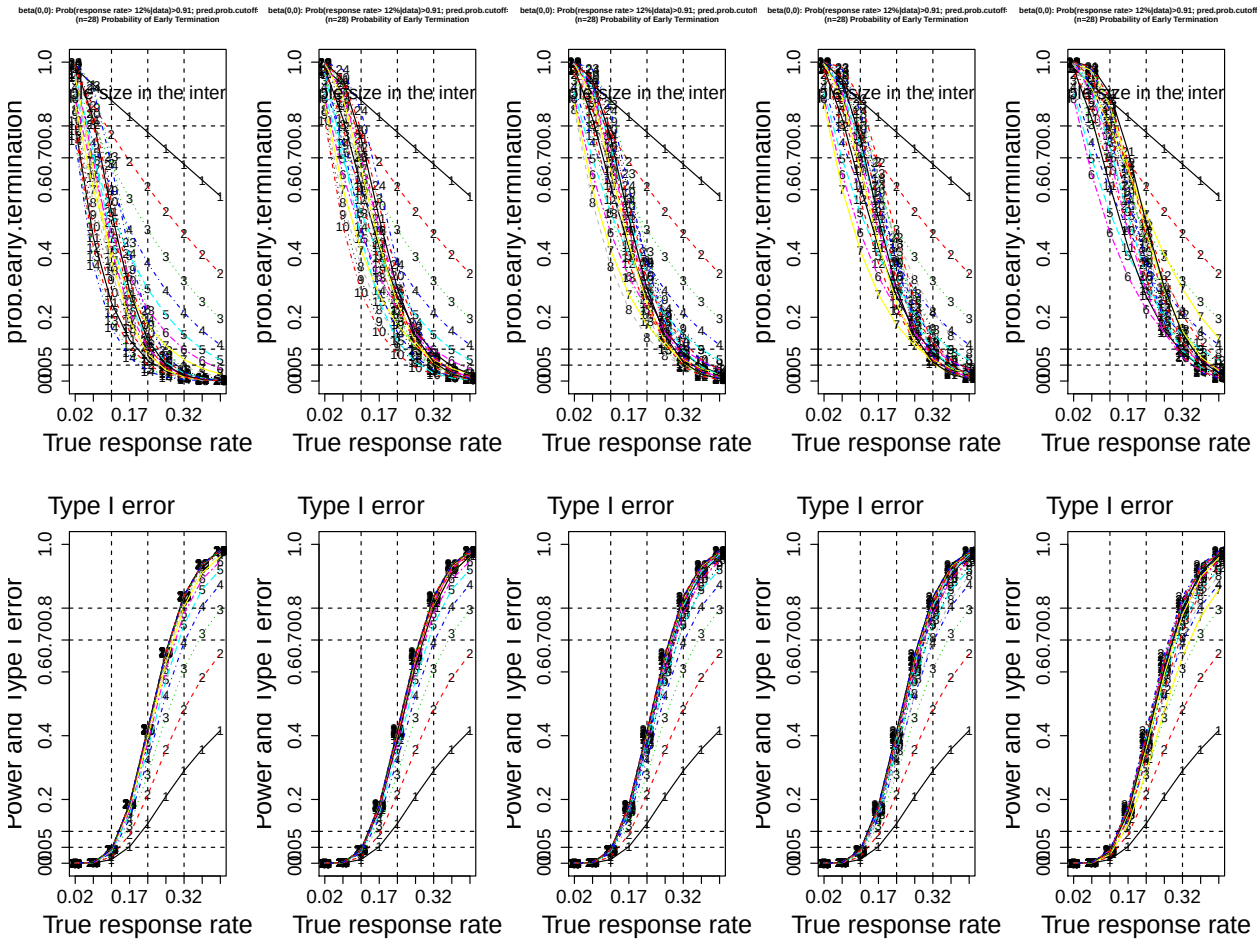

beta(0,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

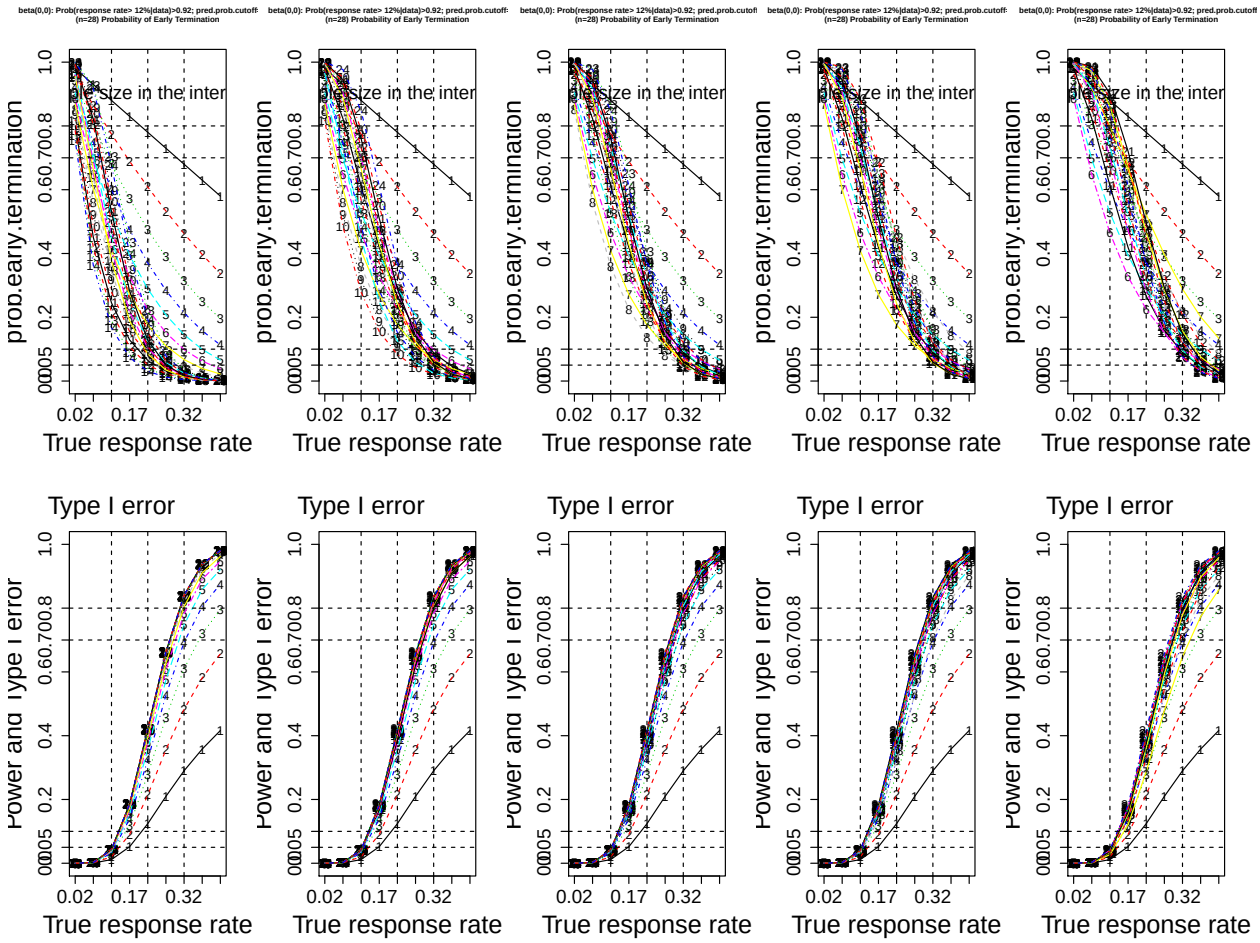

beta(0,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

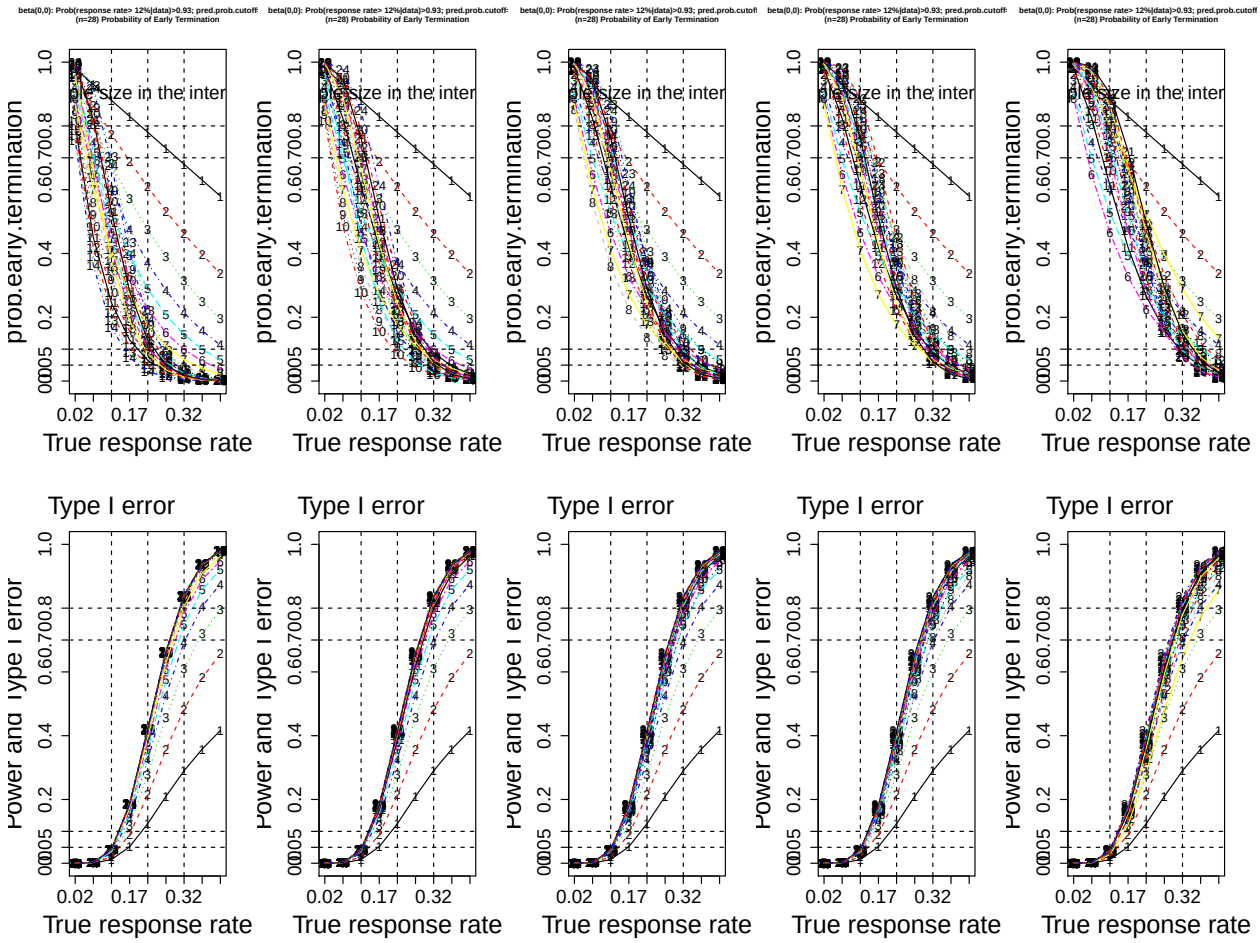

beta(0,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

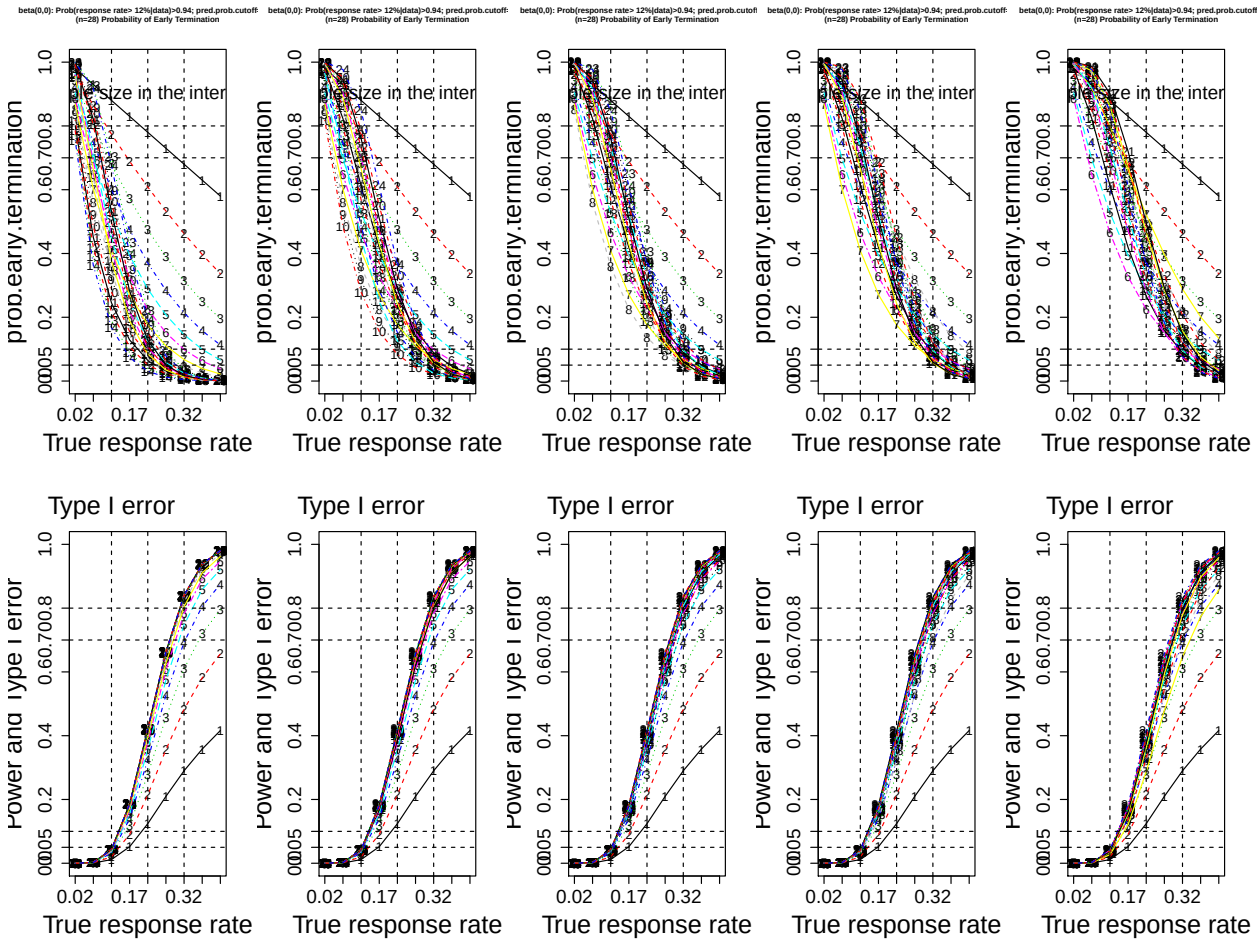

beta(0,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

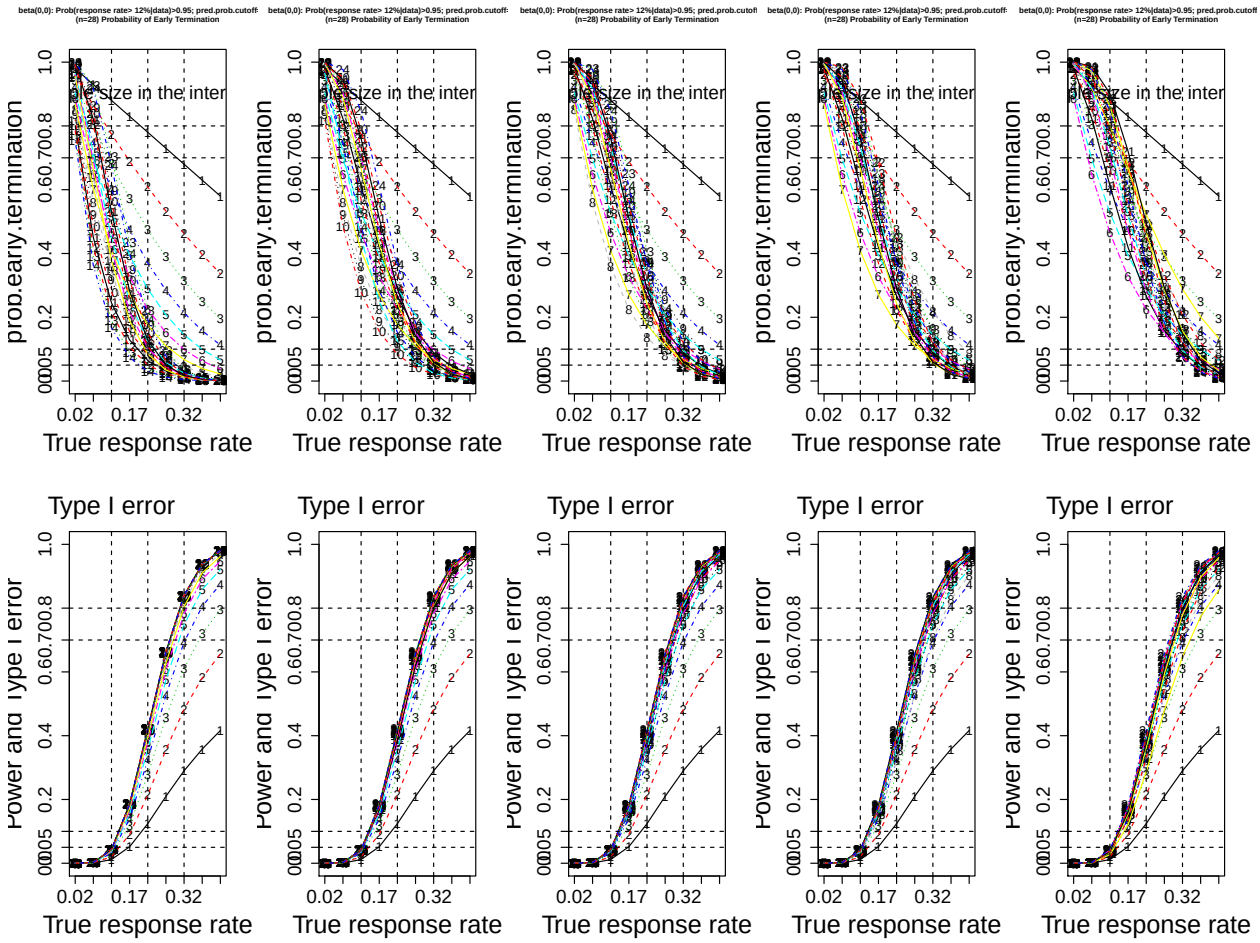

beta(0,0): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

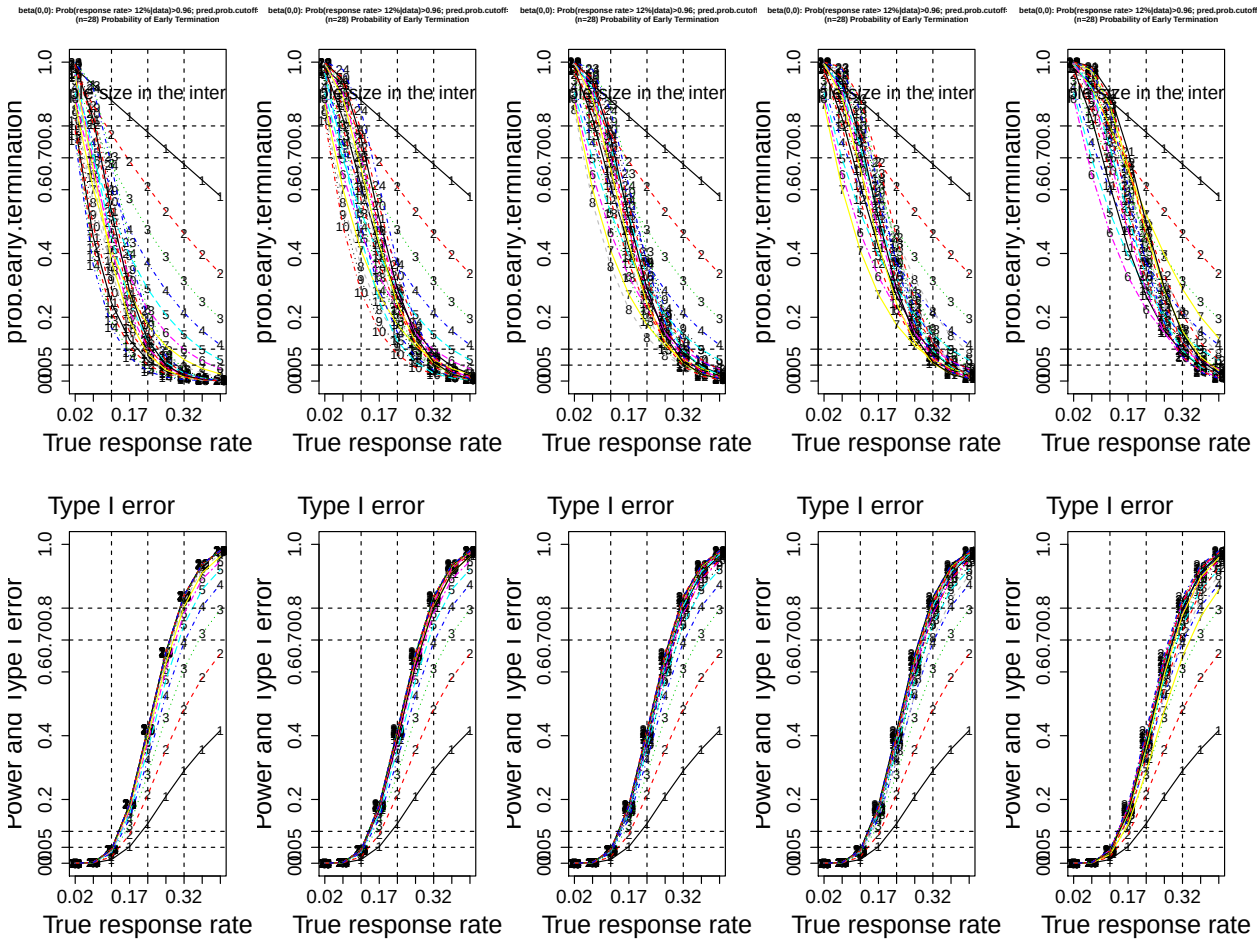

beta(0,0): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

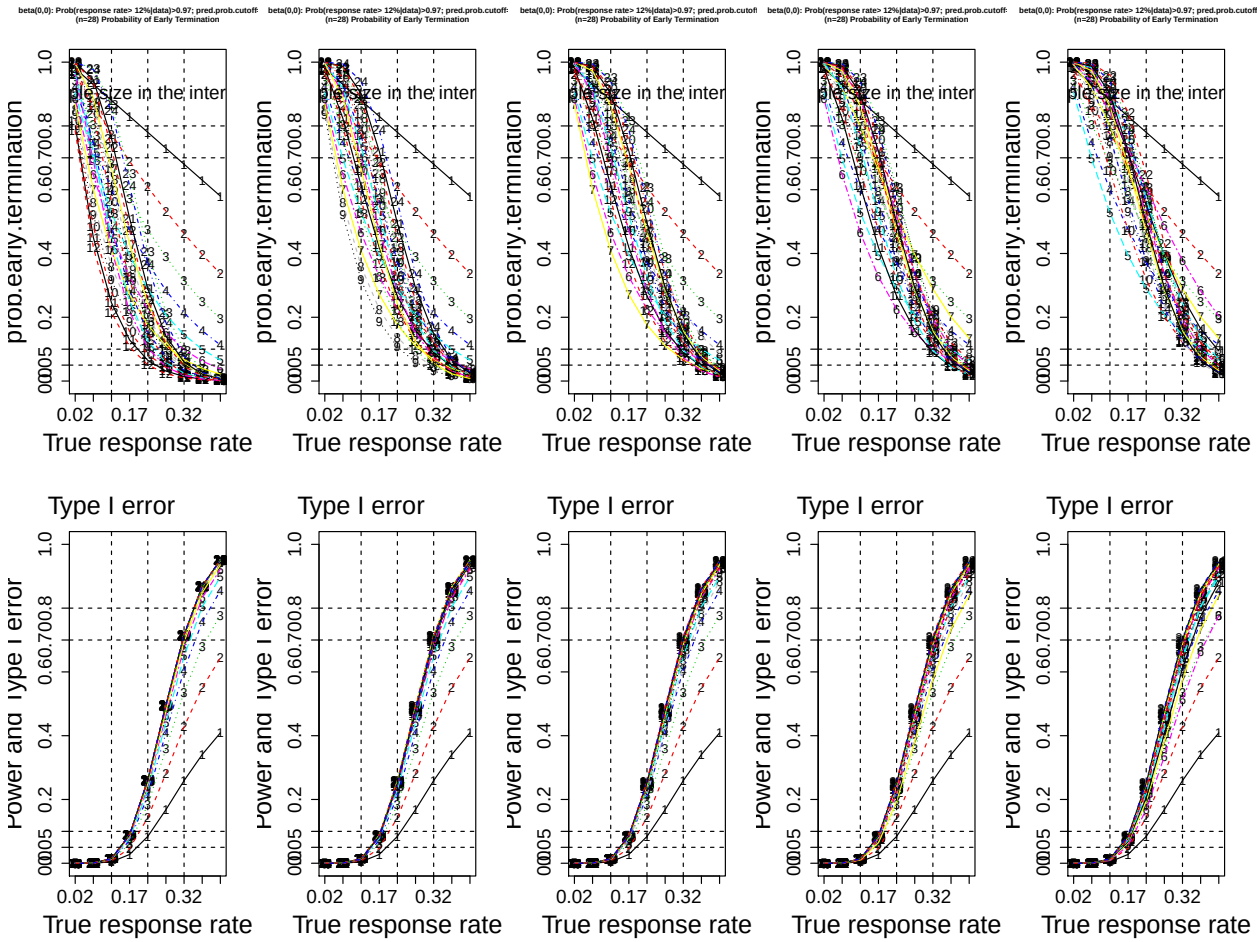

beta(0,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

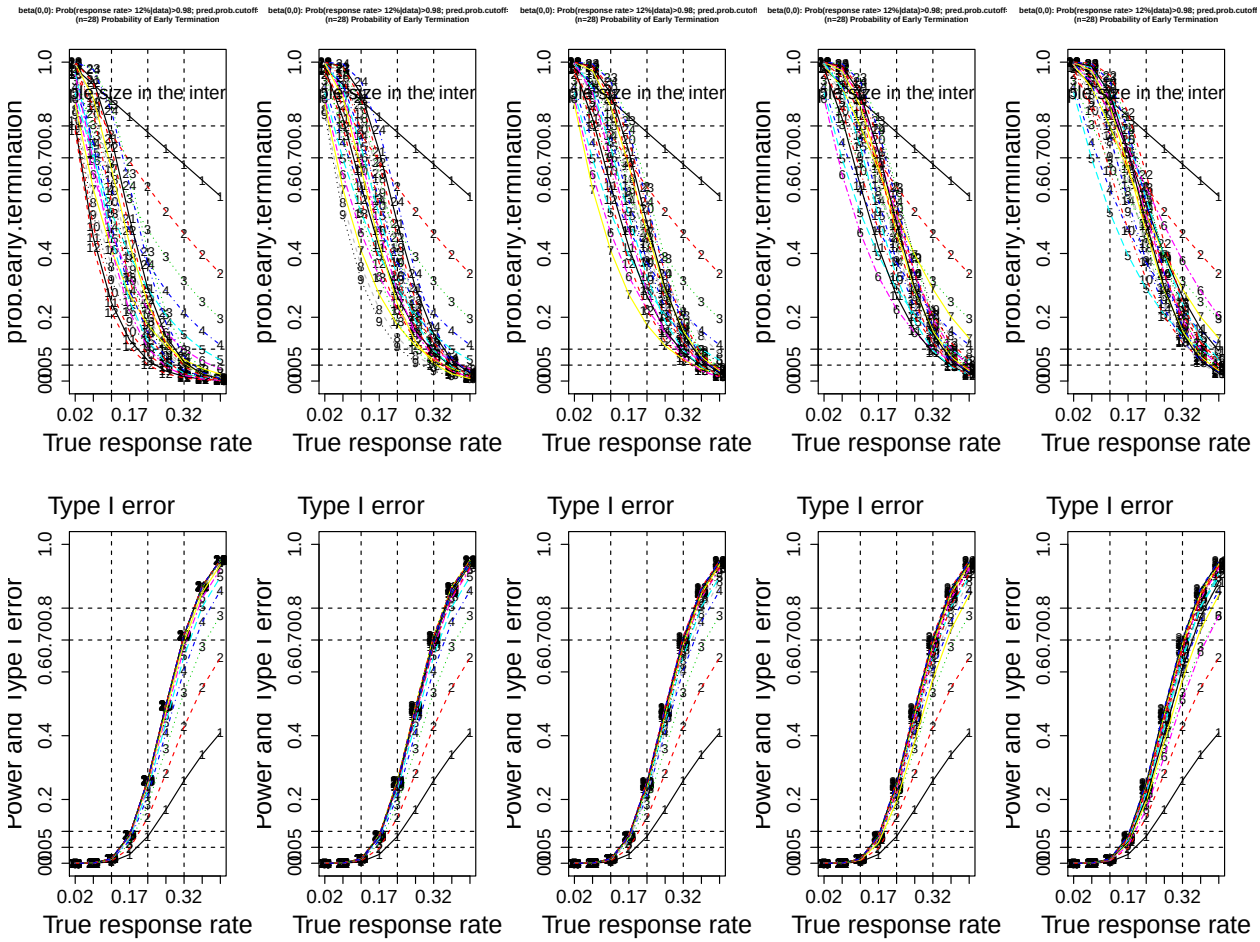

beta(0,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

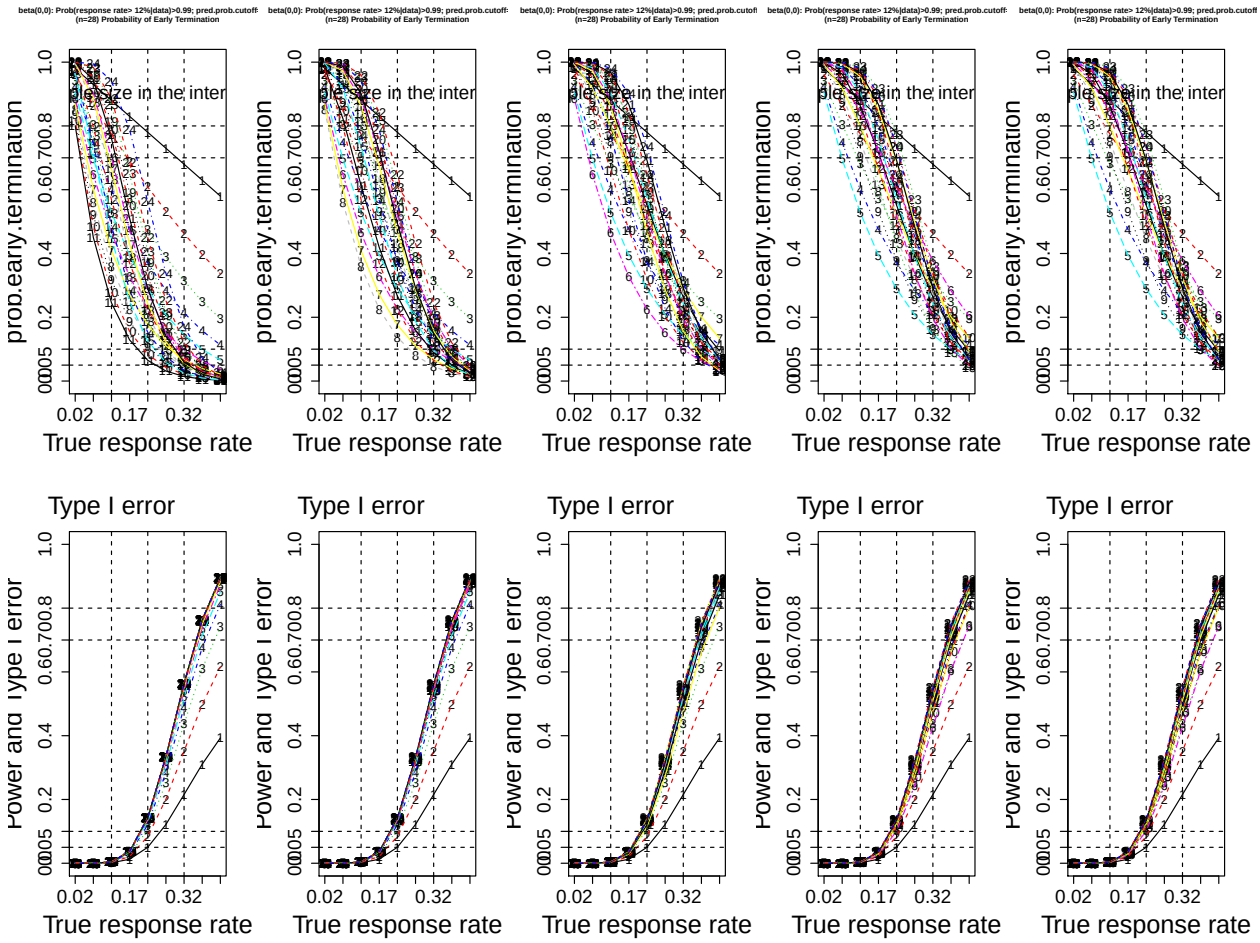

beta(0,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

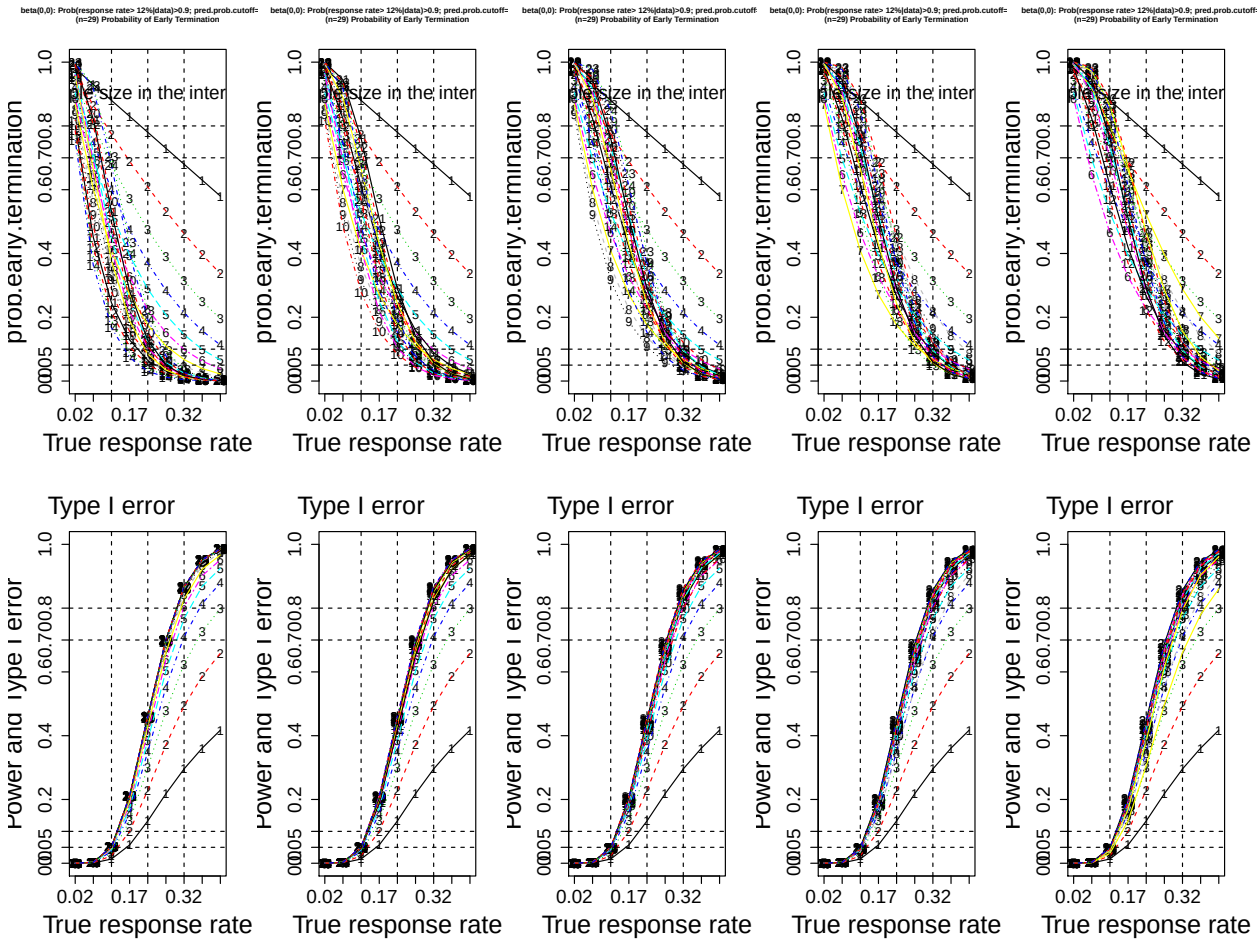

beta(0,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32

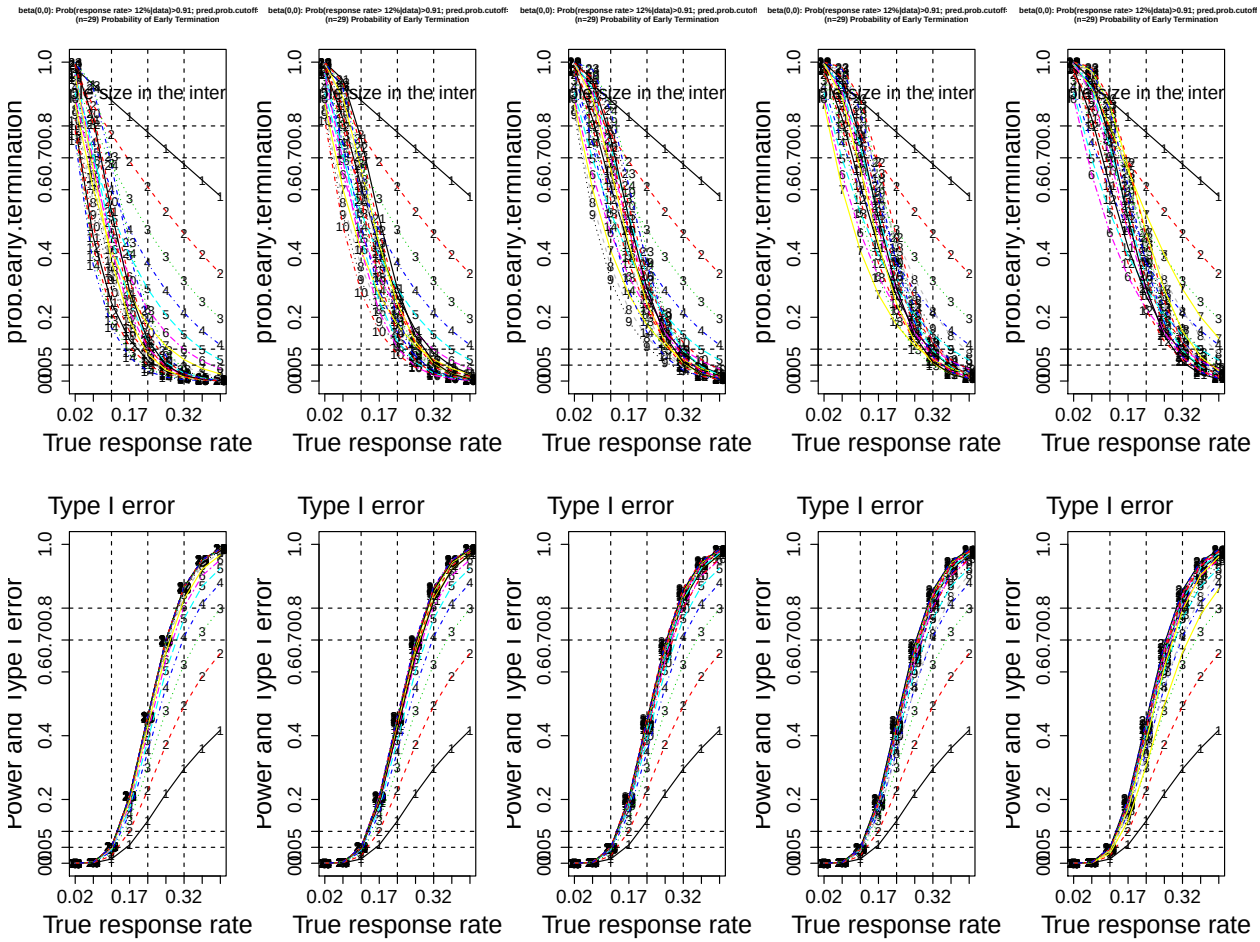

beta(0,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

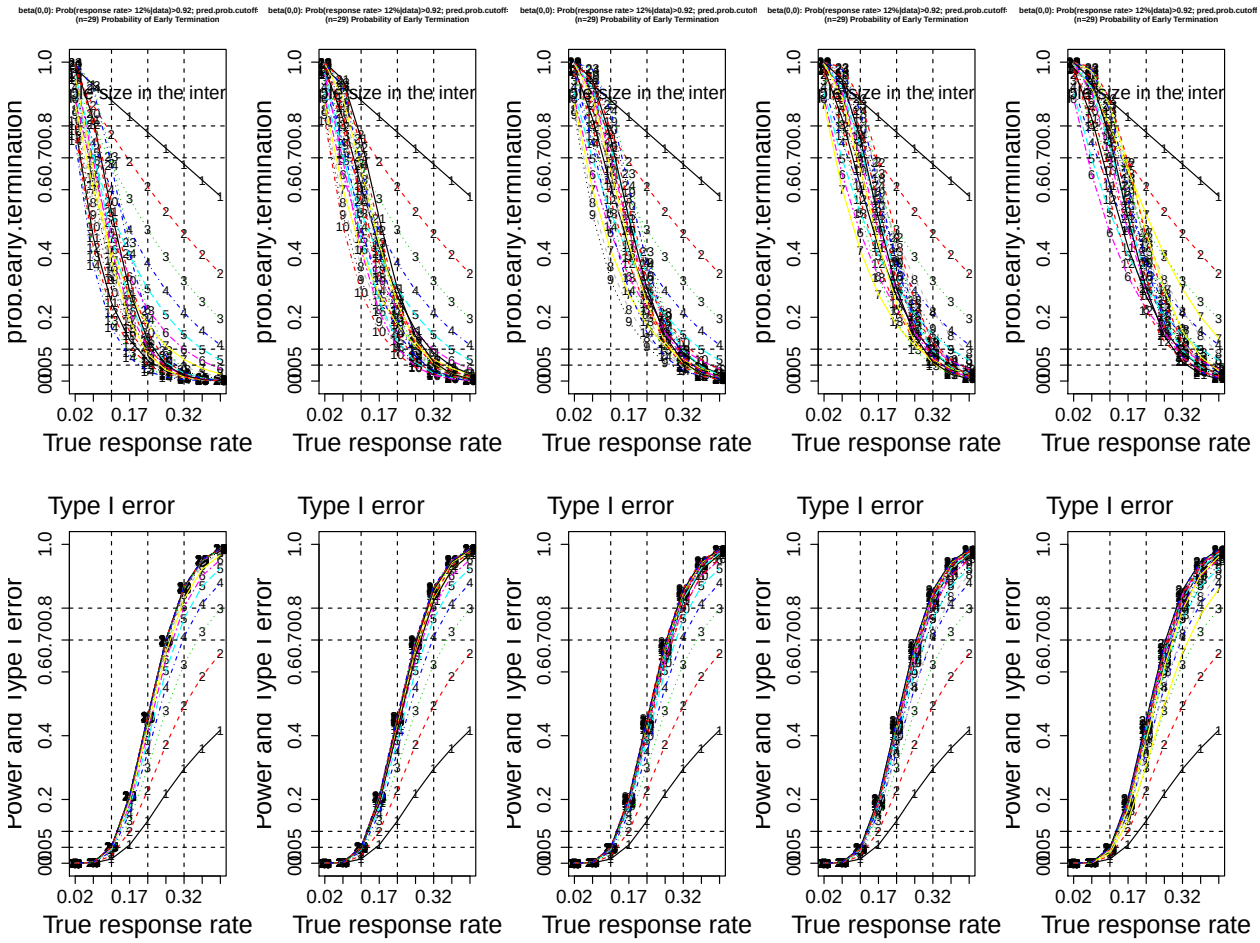

beta(0,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

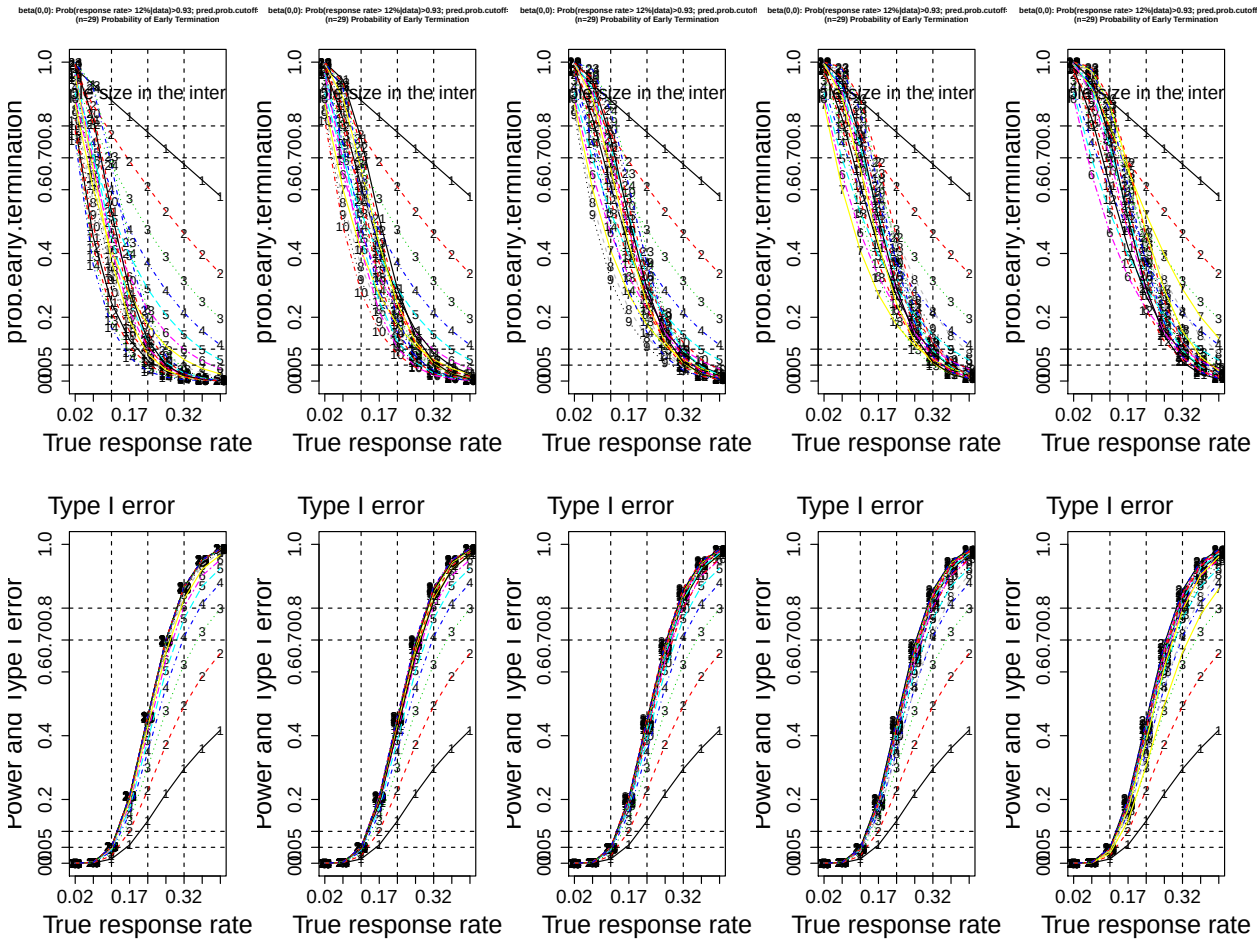

beta(0,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

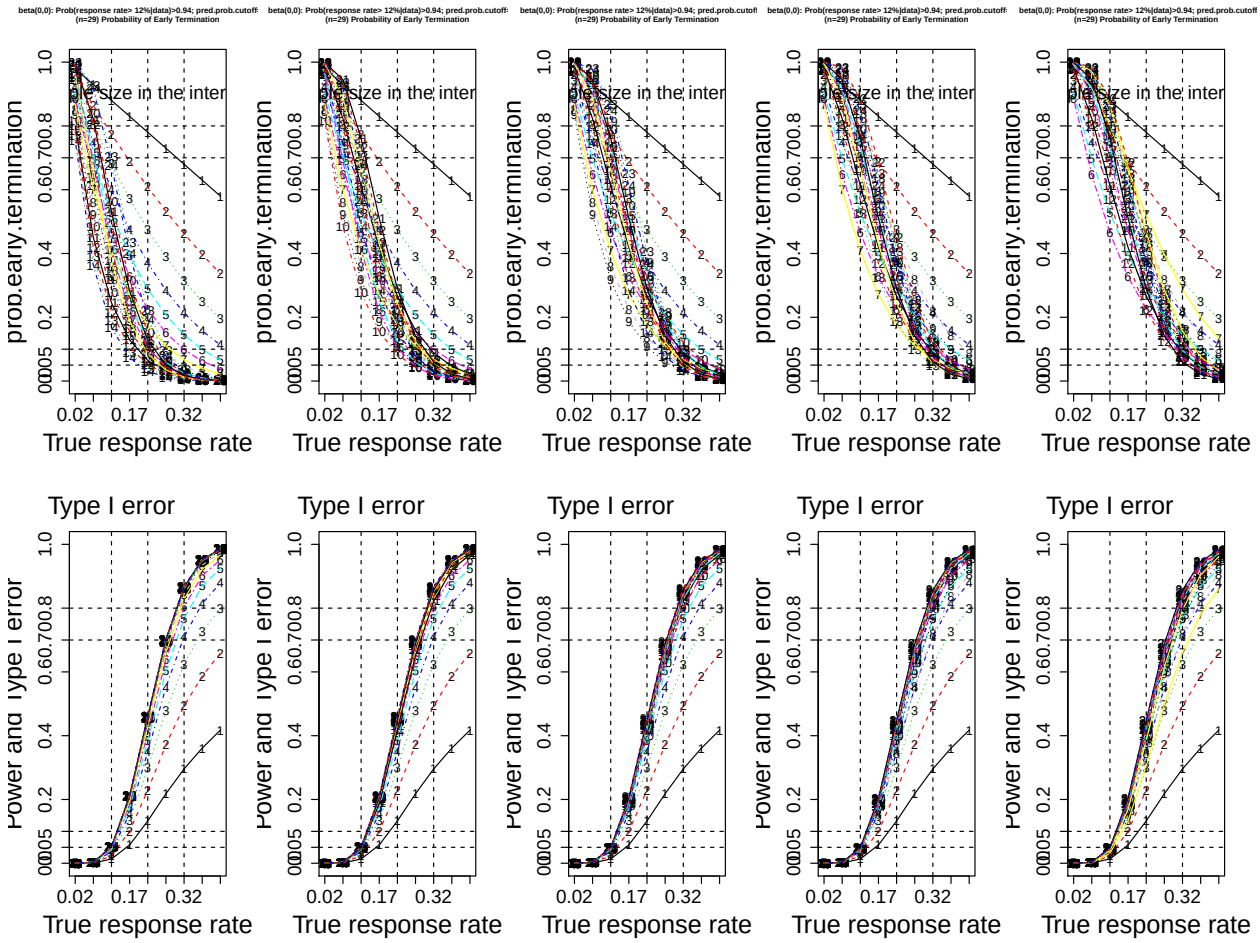

beta(0,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

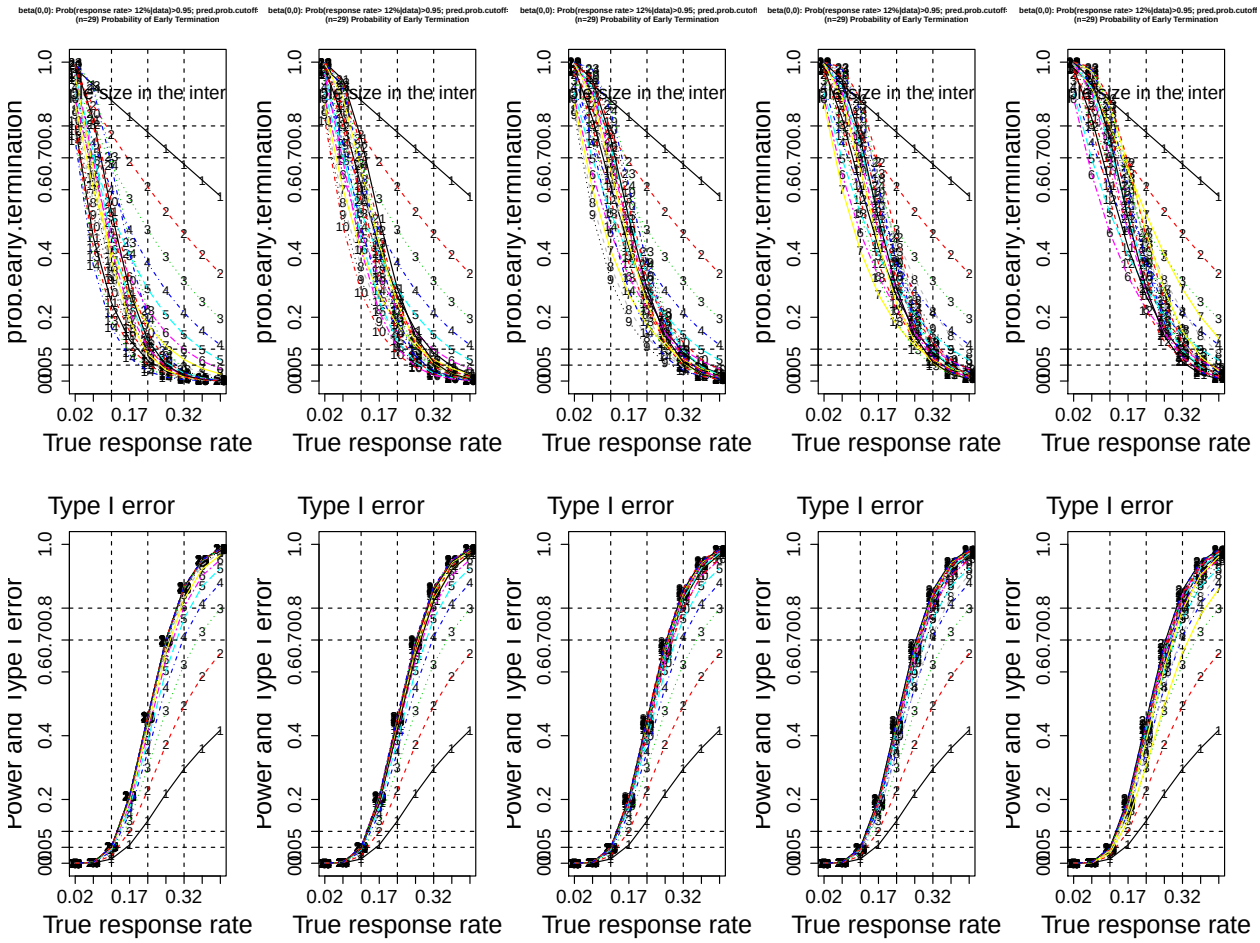

beta(0,0): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

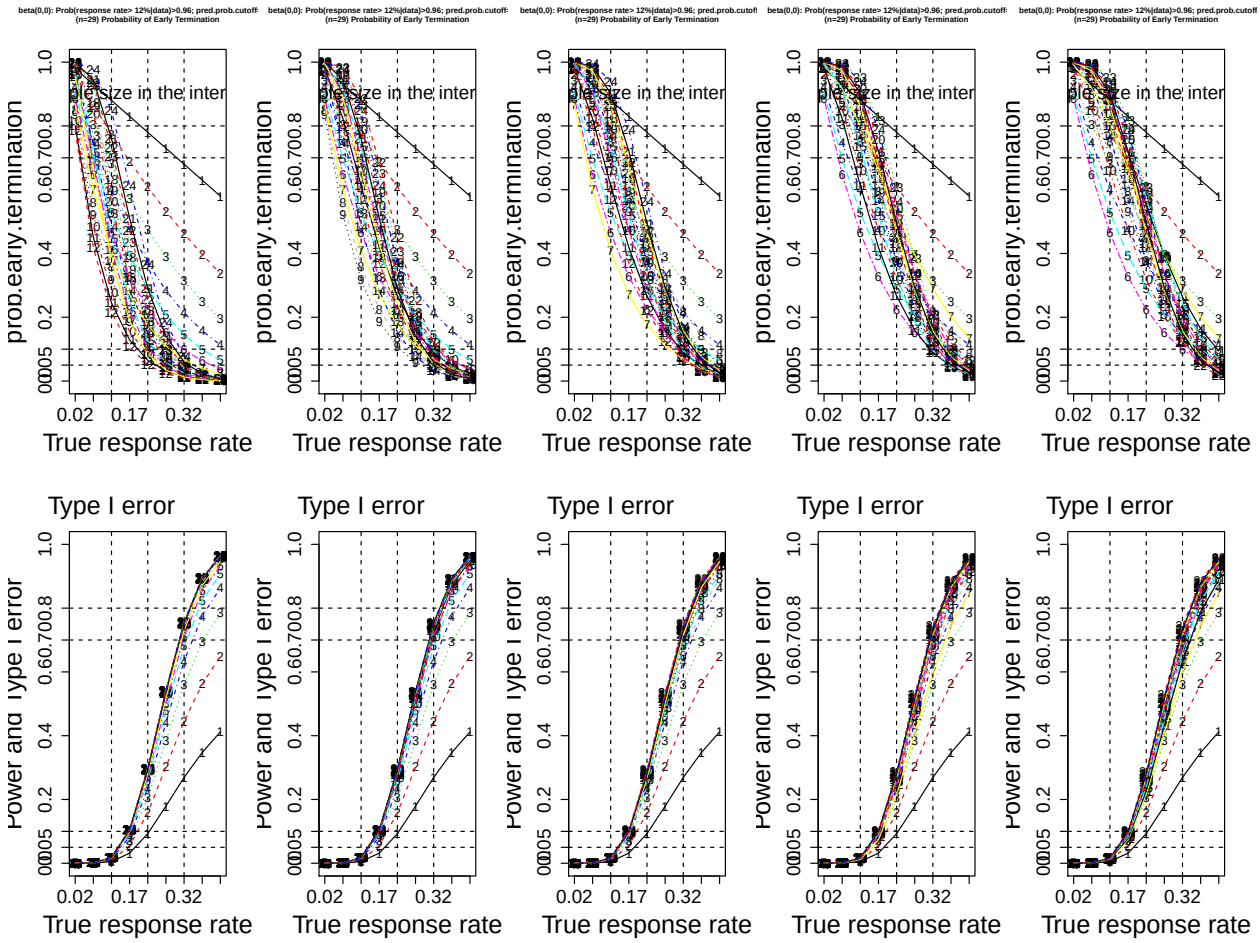

beta(0,0): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

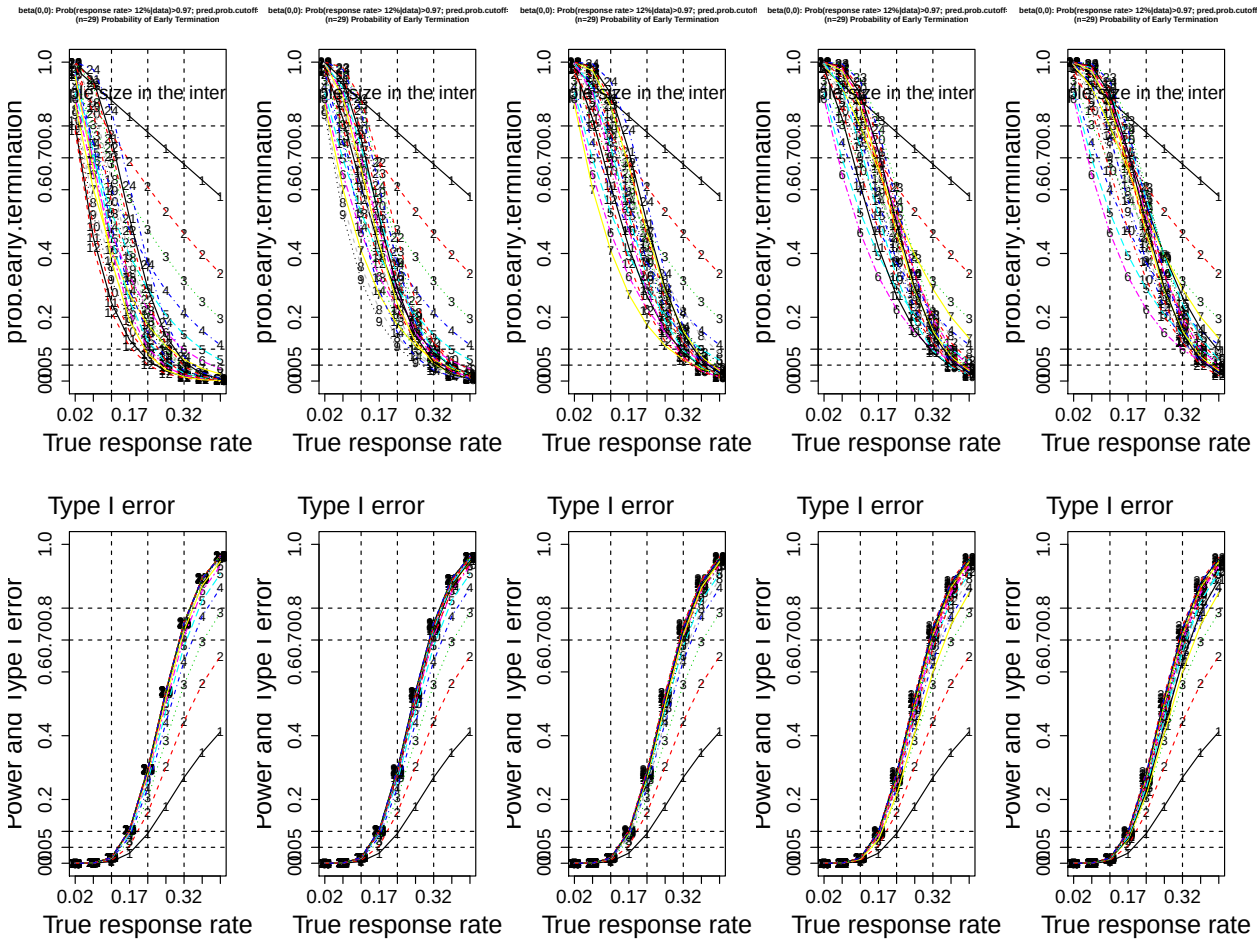

beta(0,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

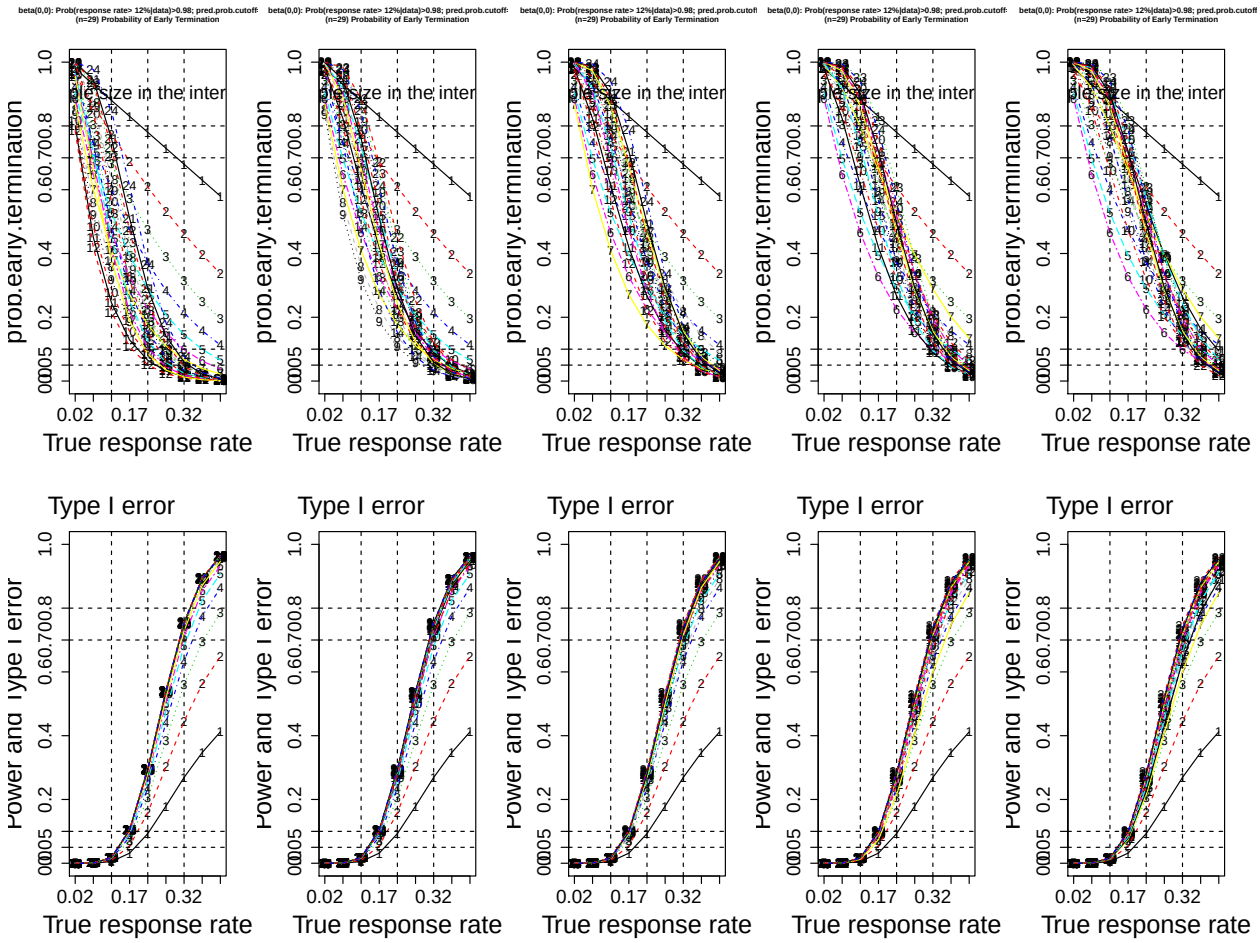

beta(0,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

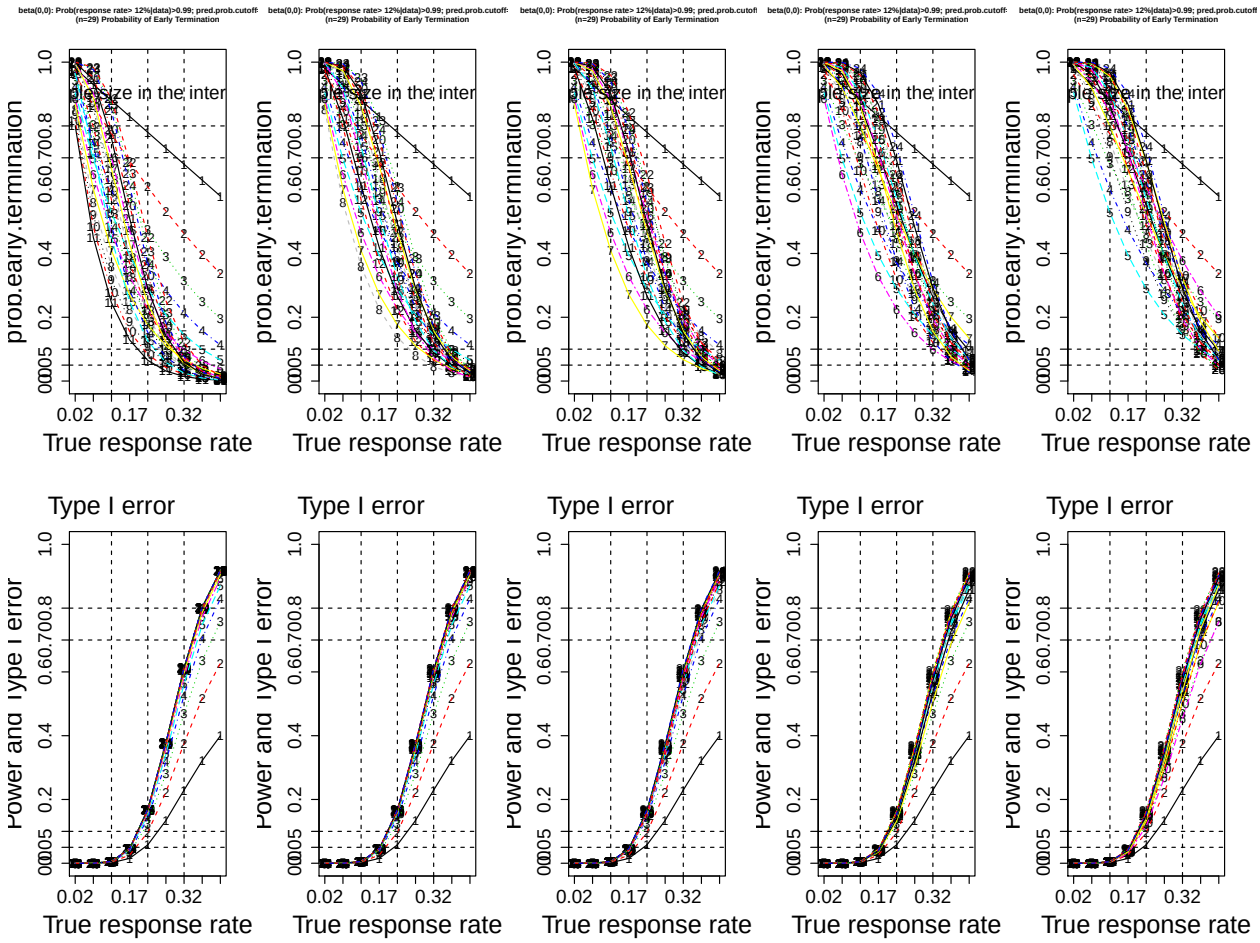

beta(0,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

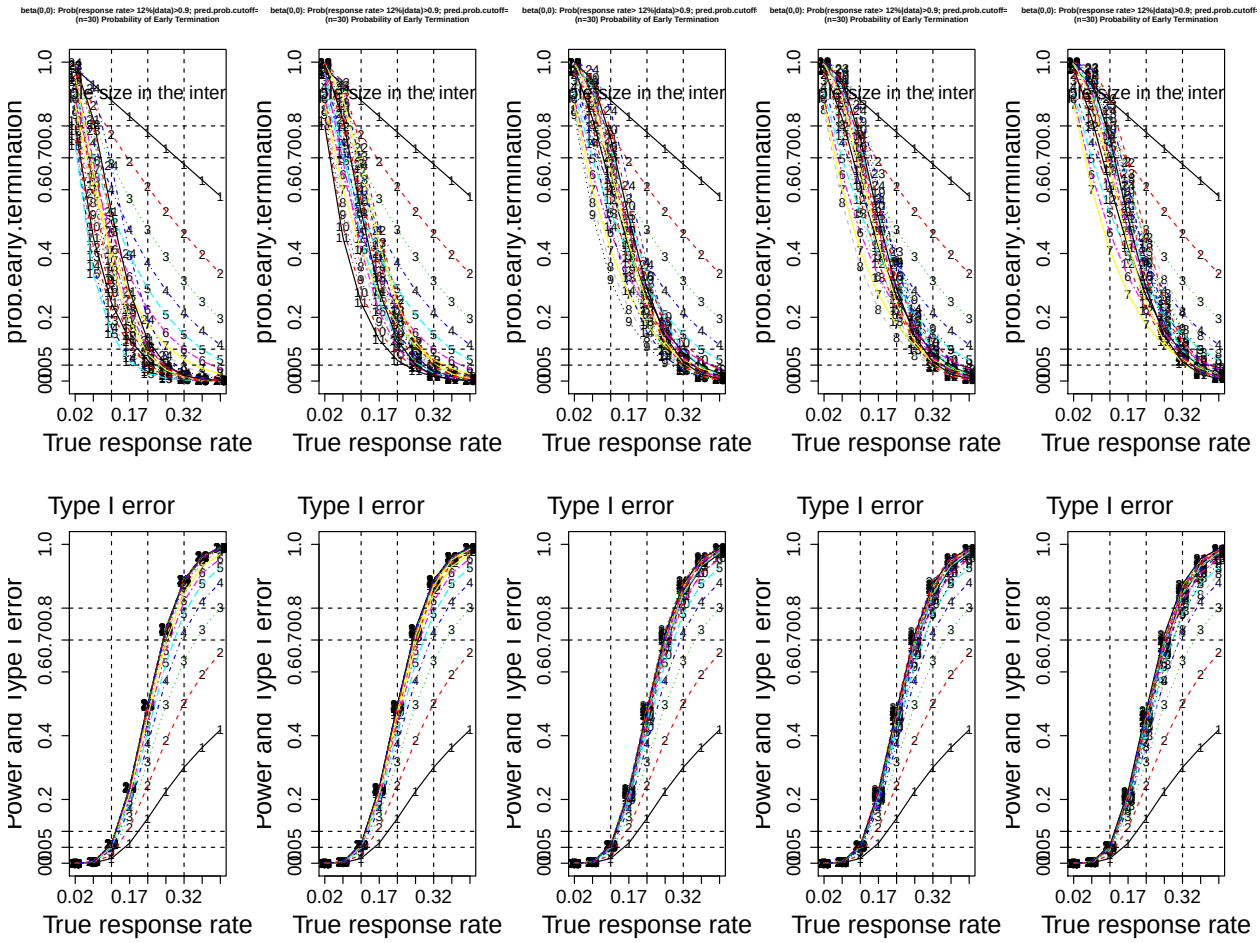

beta(0,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

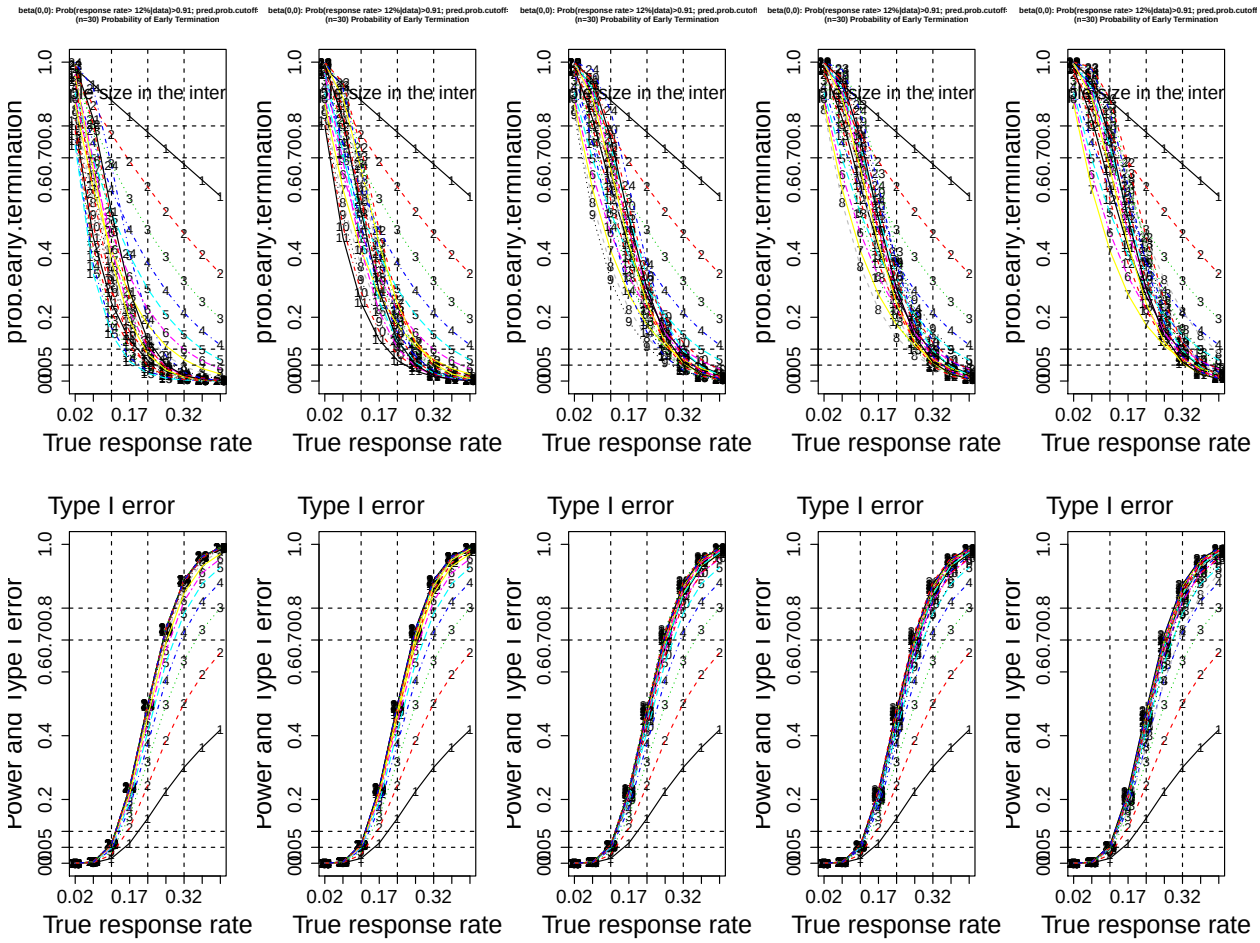

beta(0,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32

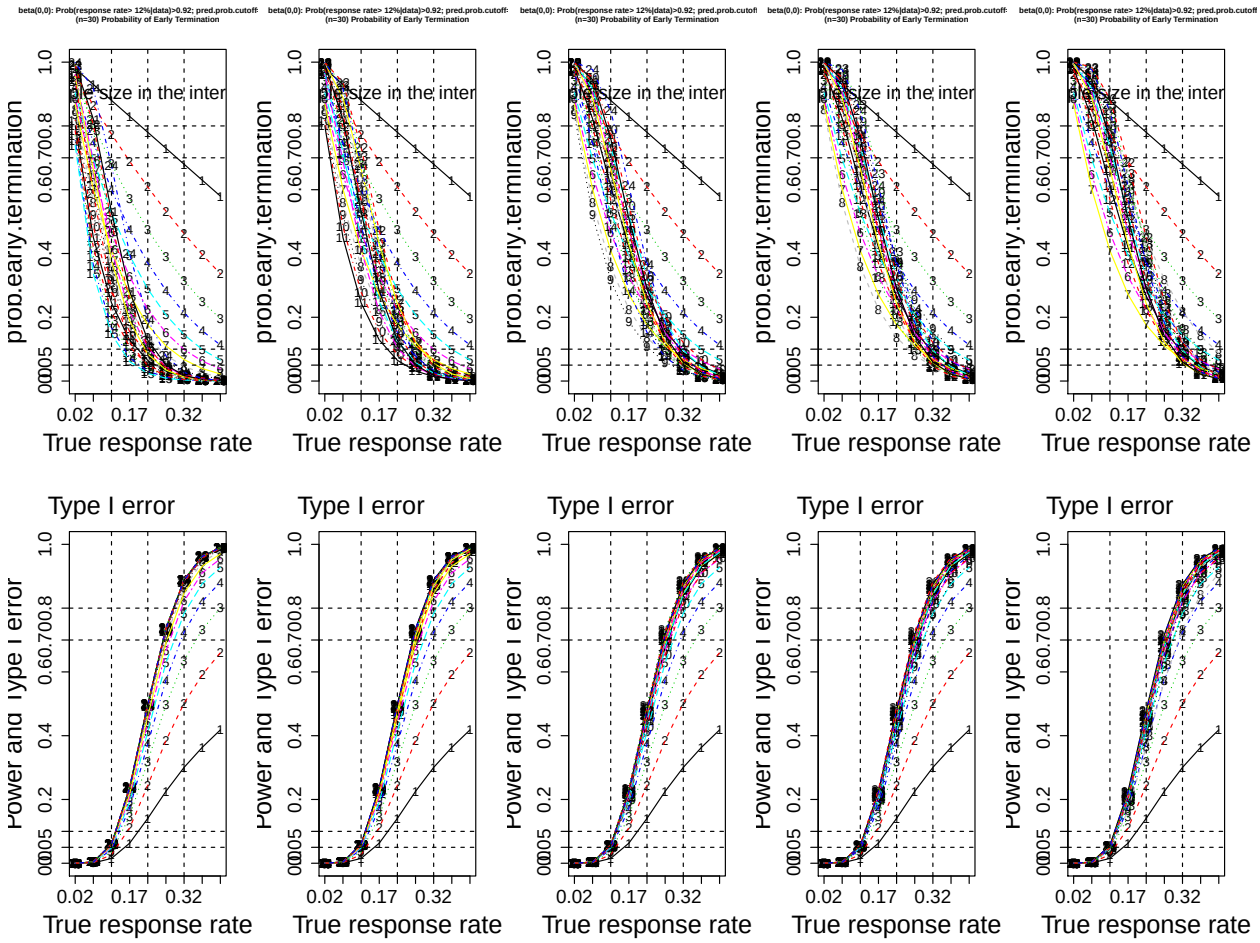

beta(0,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

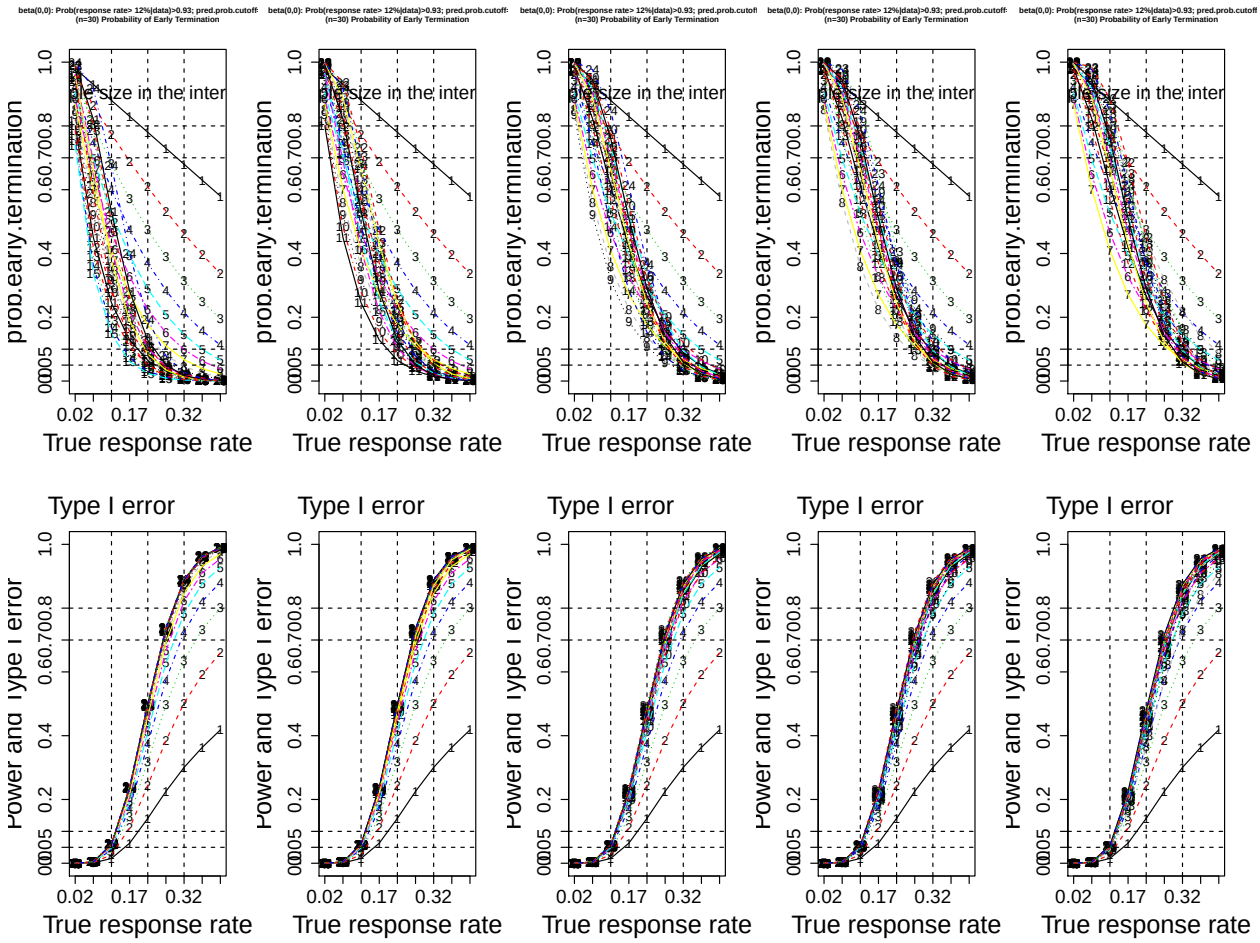

beta(0,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

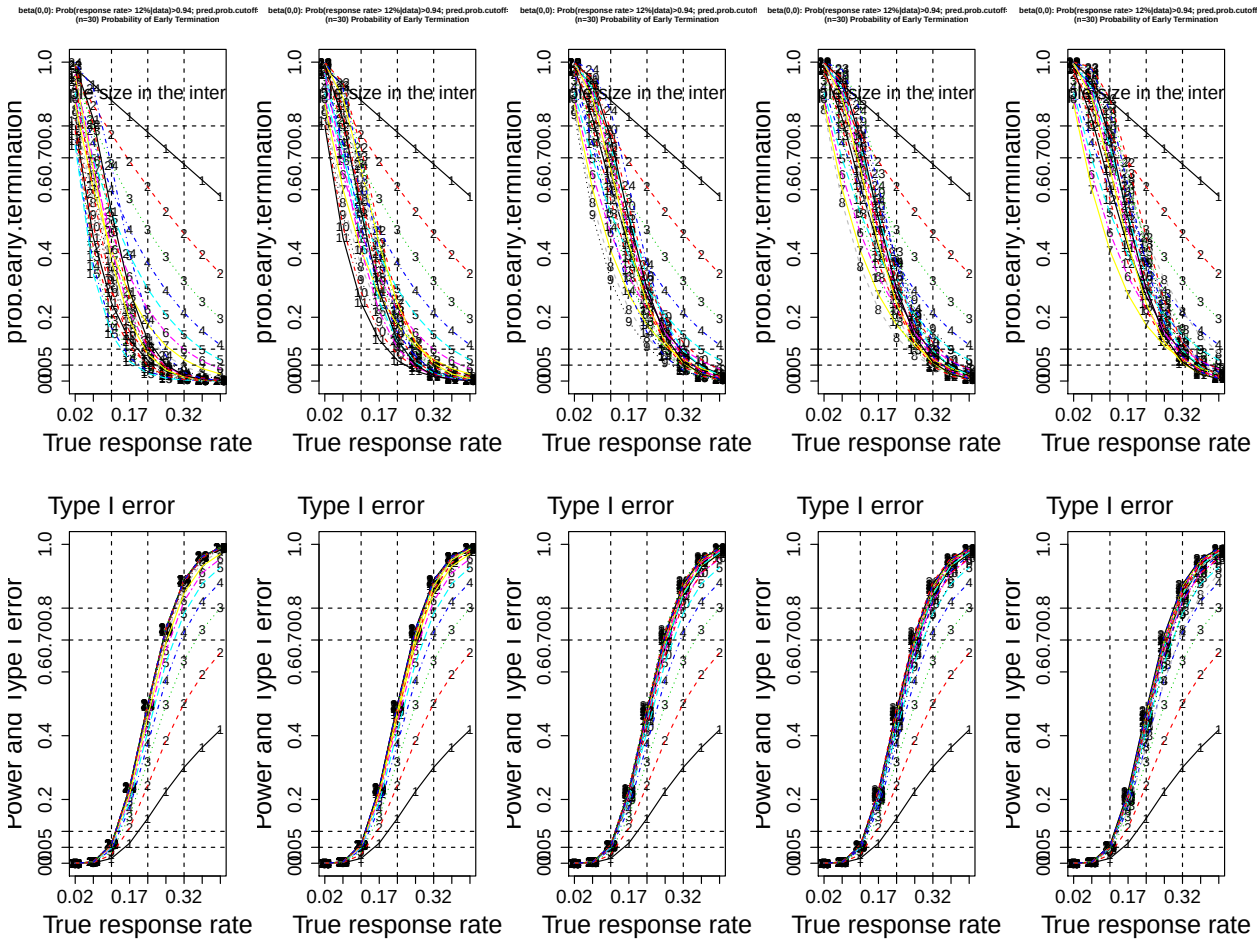

beta(0,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

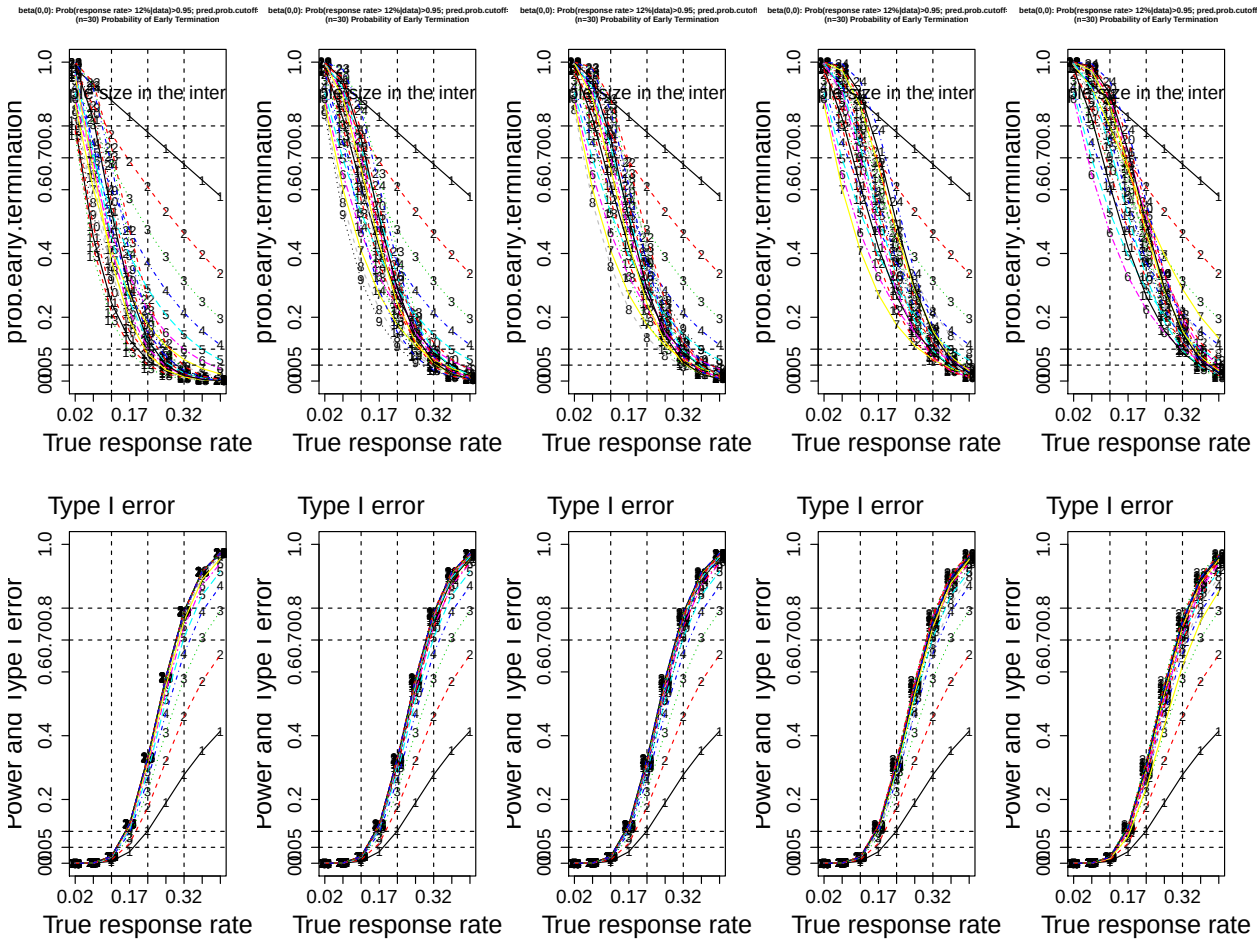

beta(0,0): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

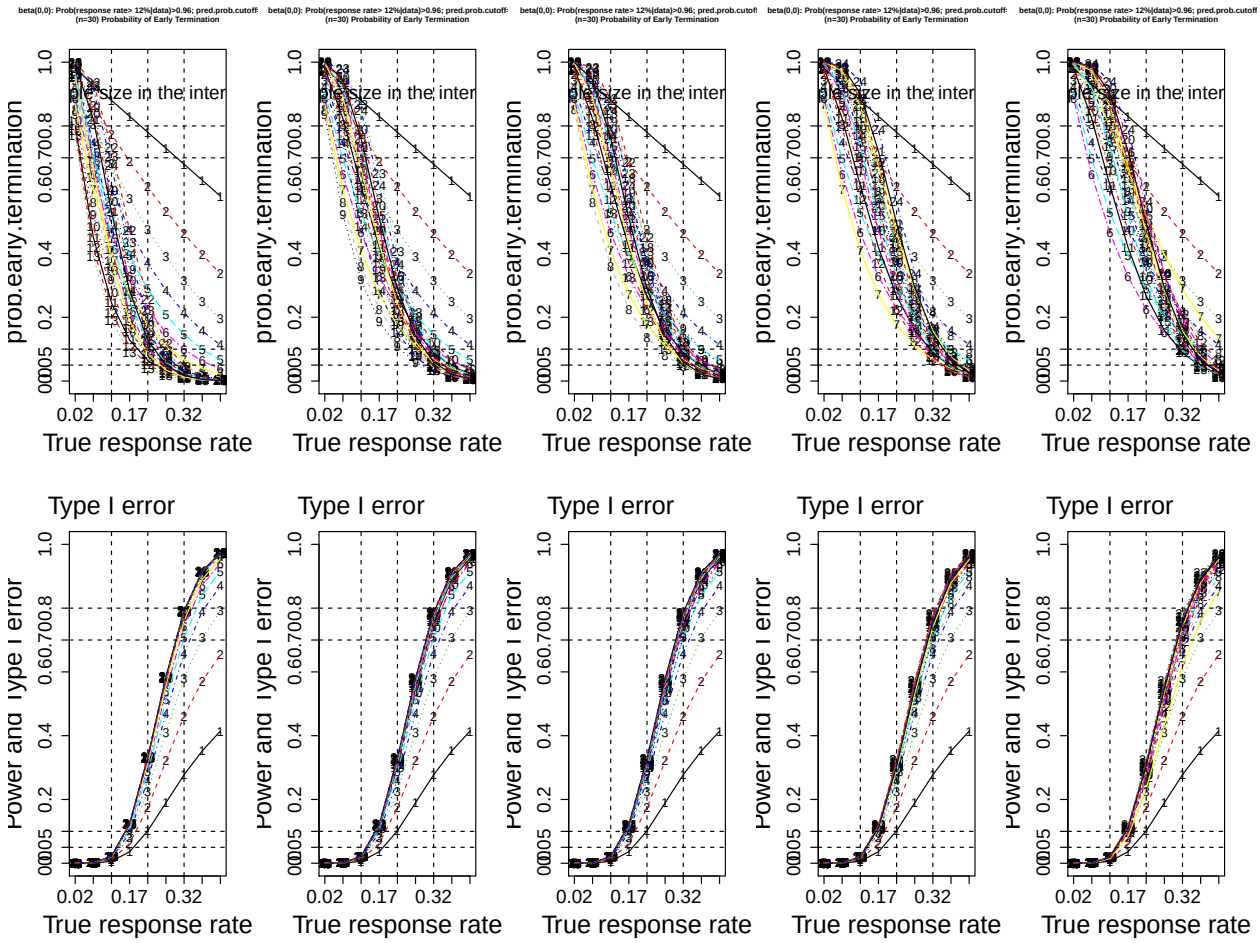

beta(0,0): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

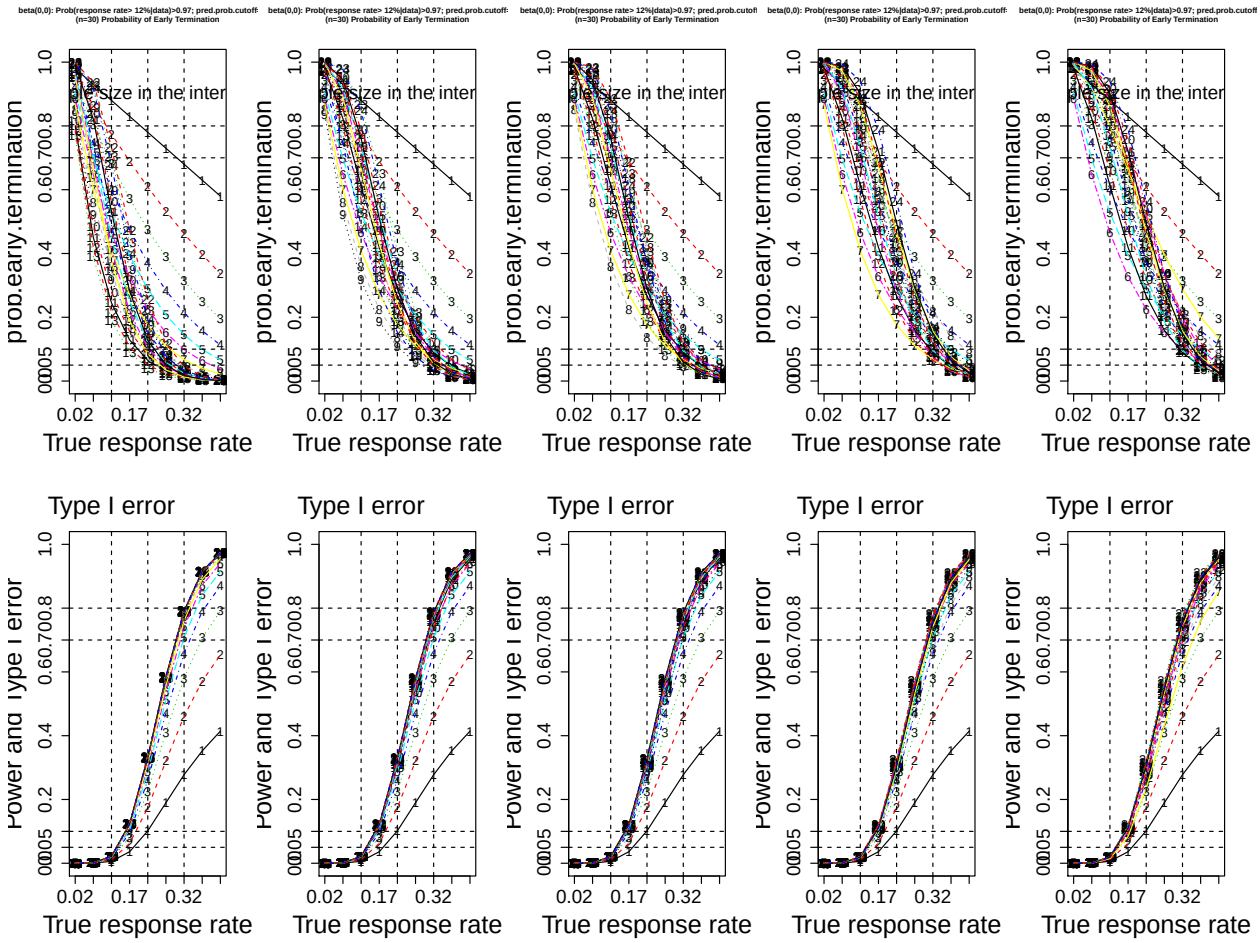

beta(0,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

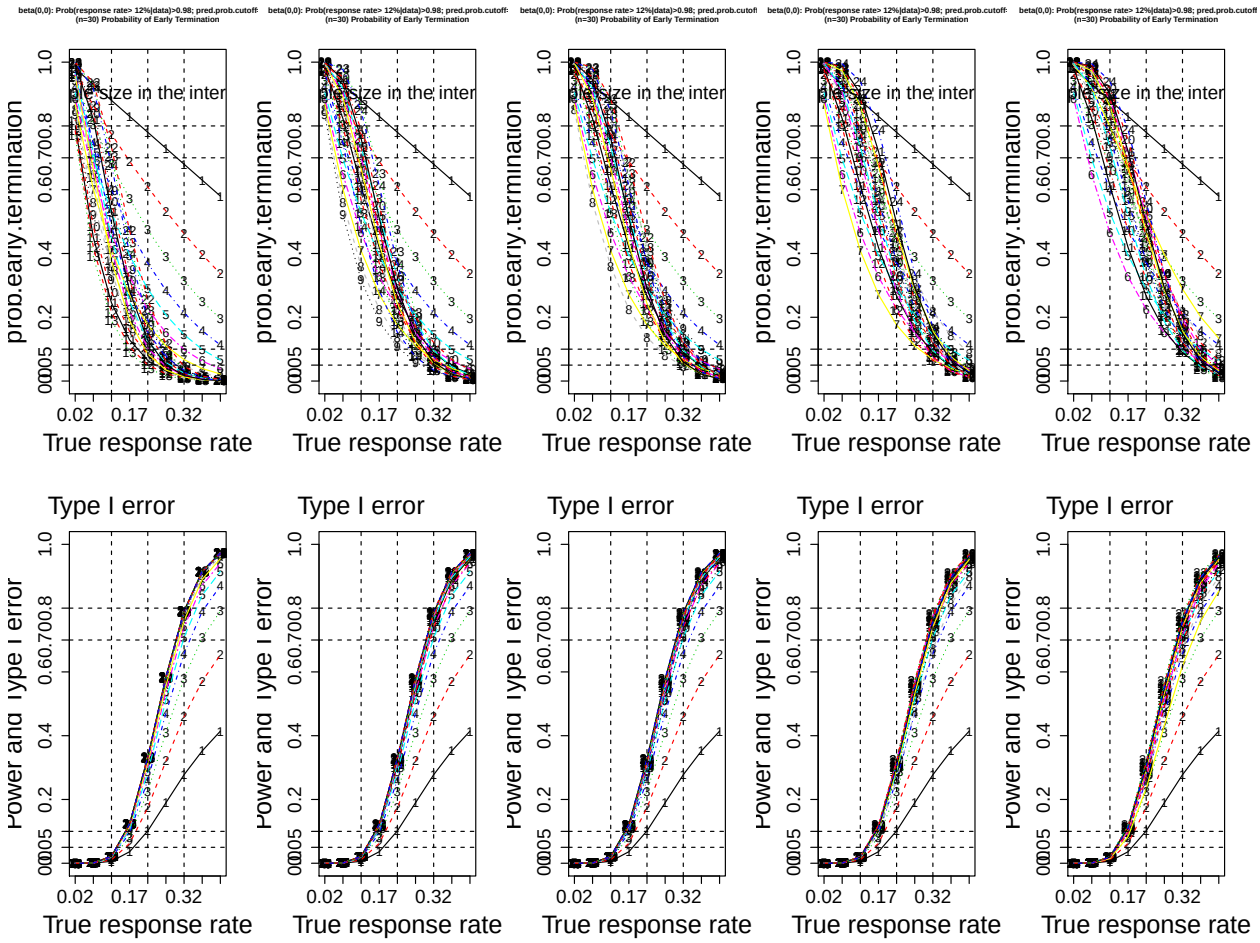

beta(0,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

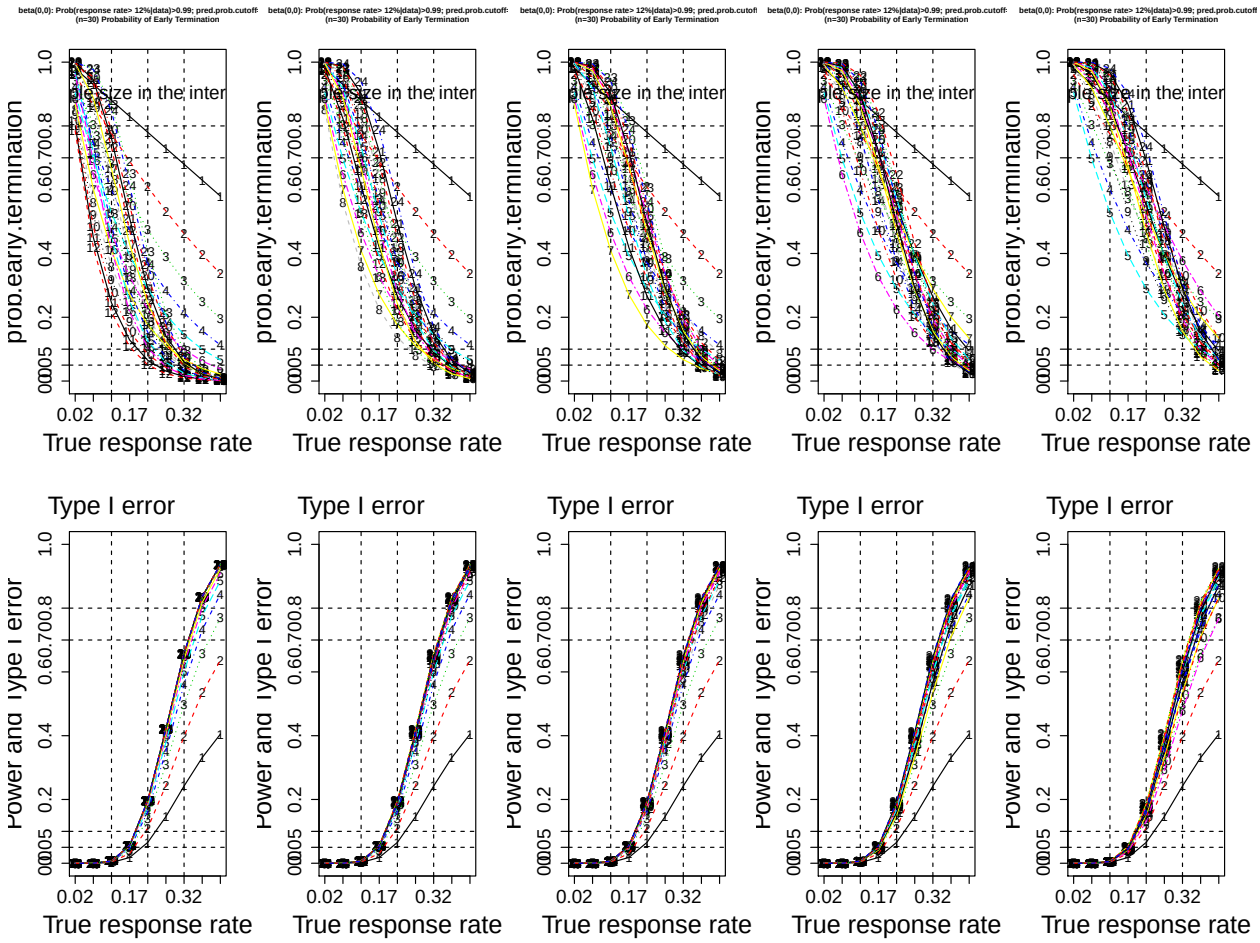

beta(0,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

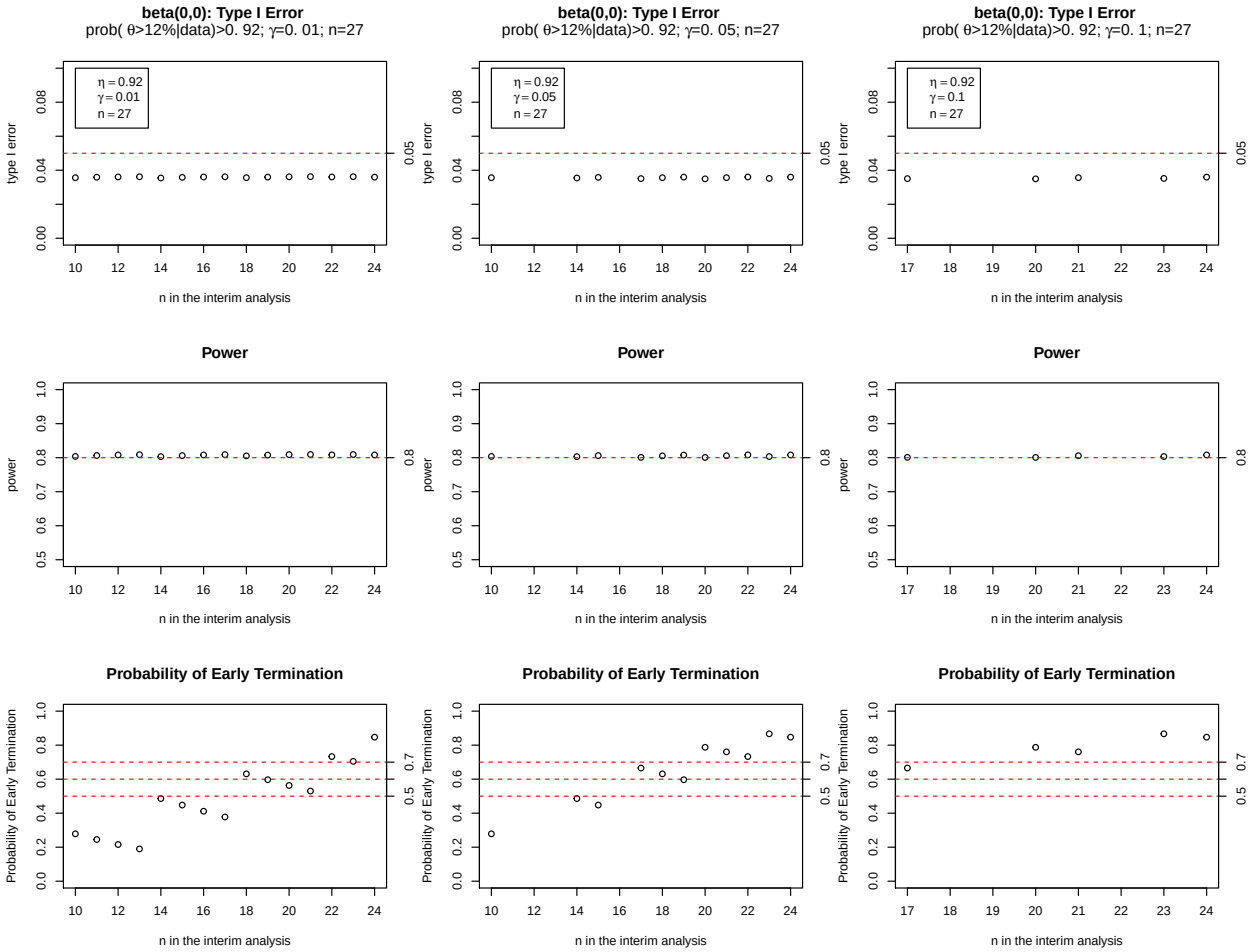

beta(0,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

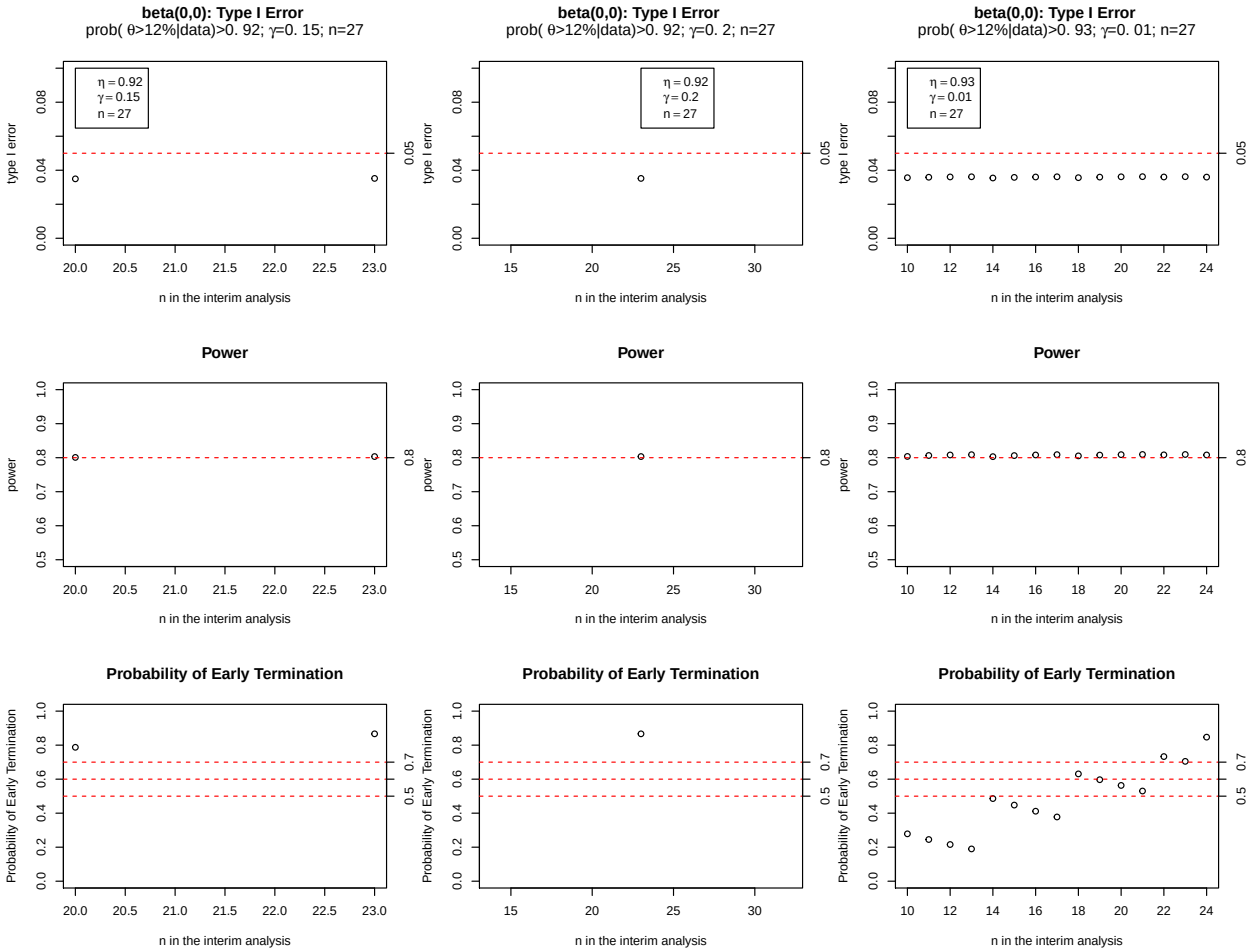

beta(0,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

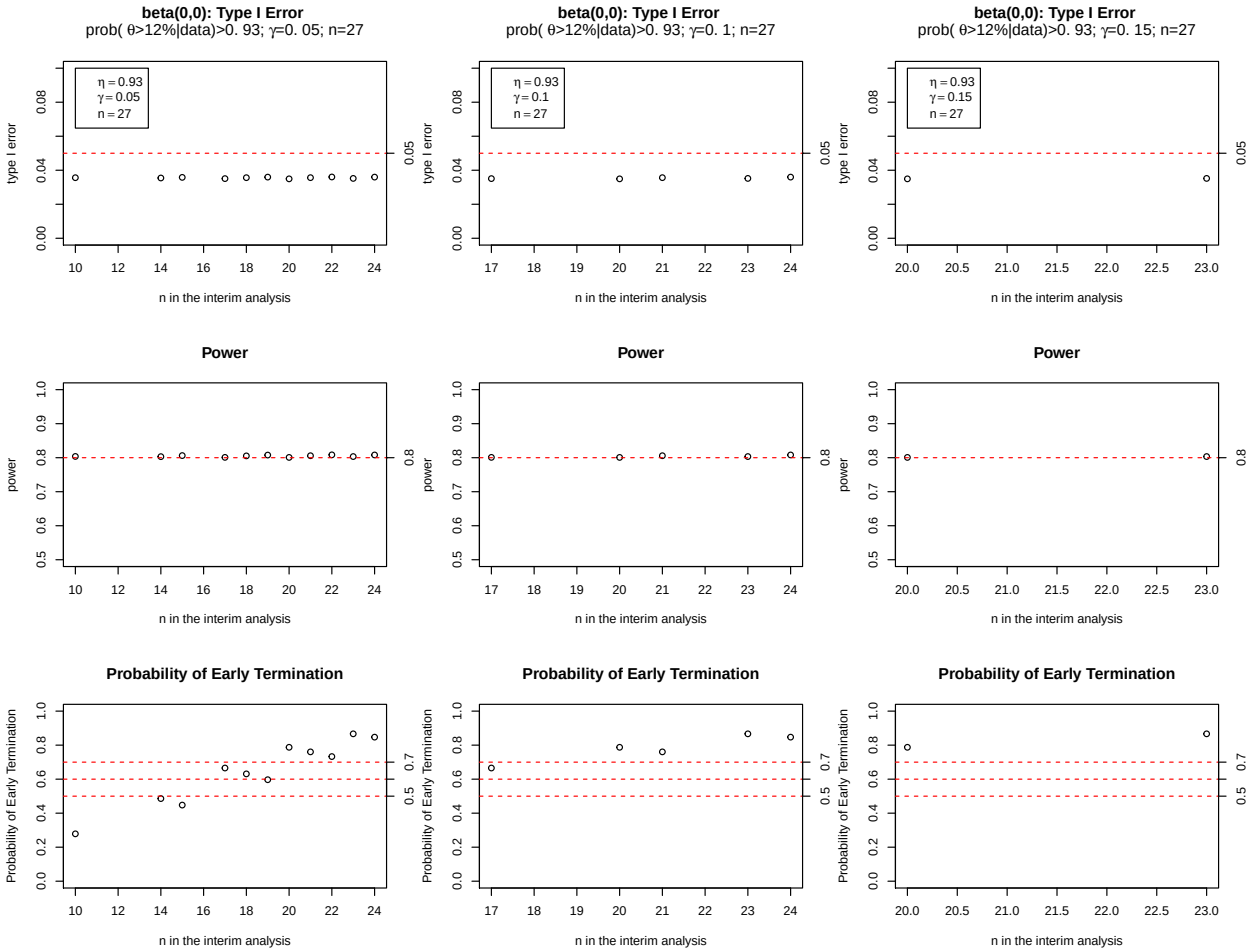

beta(0,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

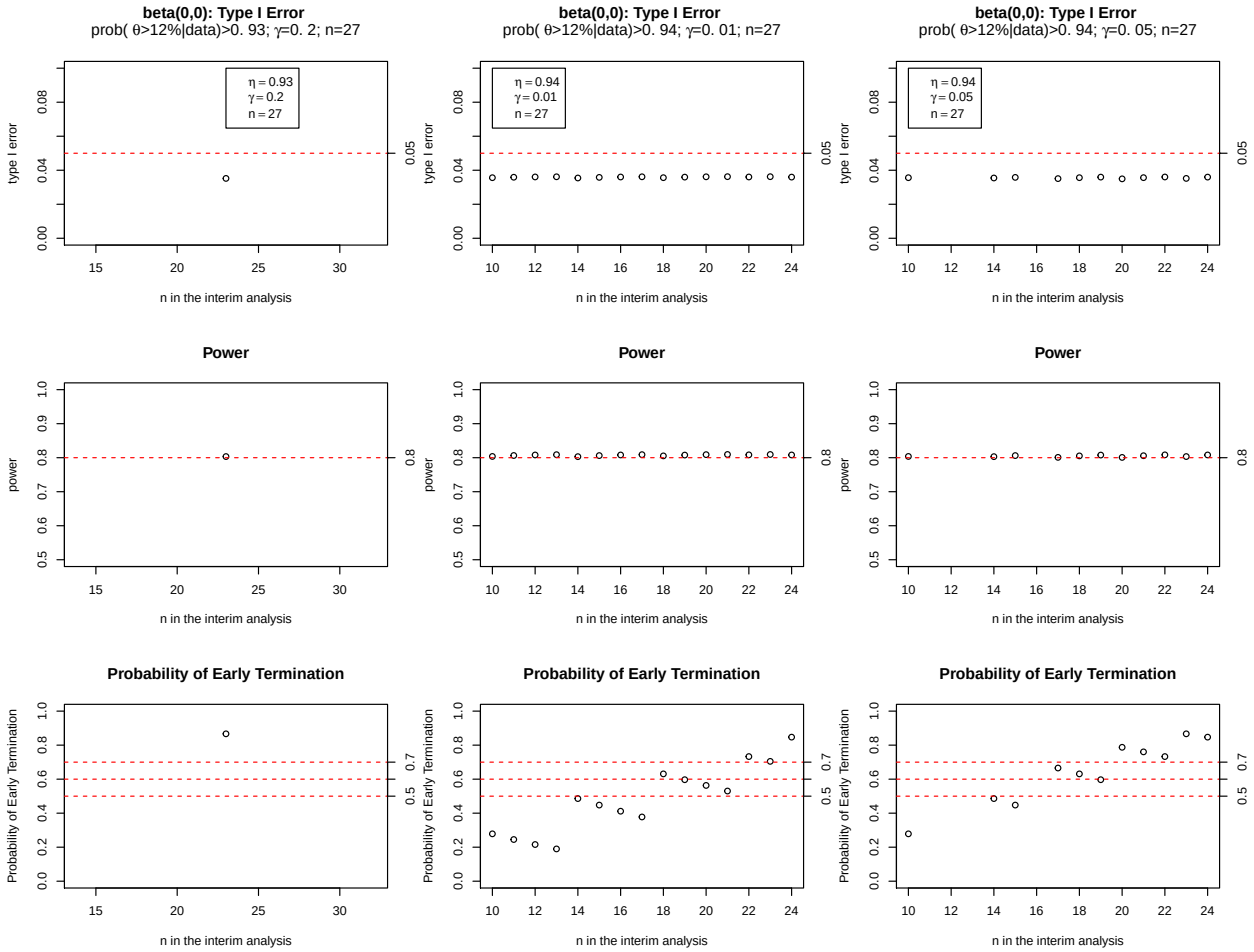

beta(0,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

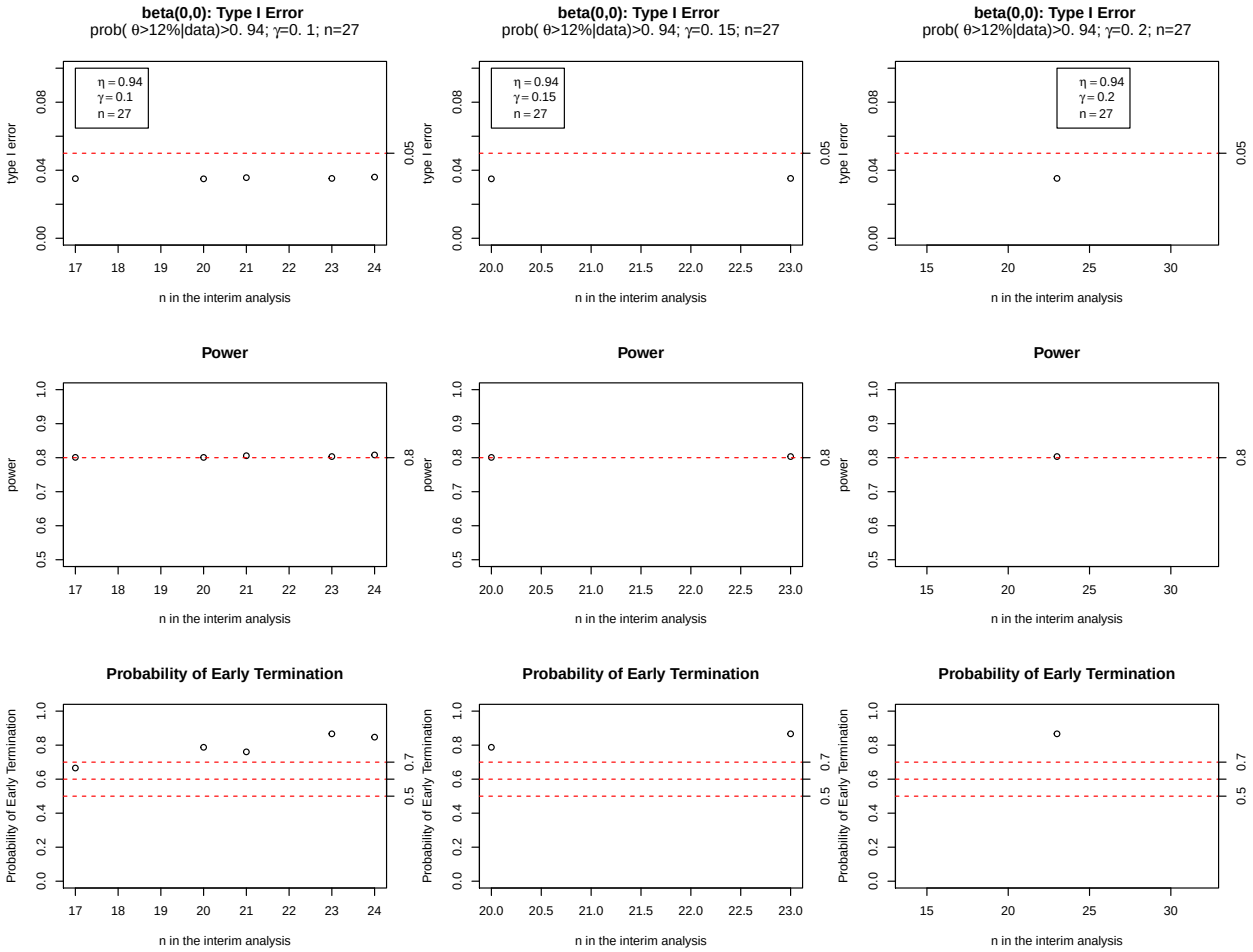

beta(0,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

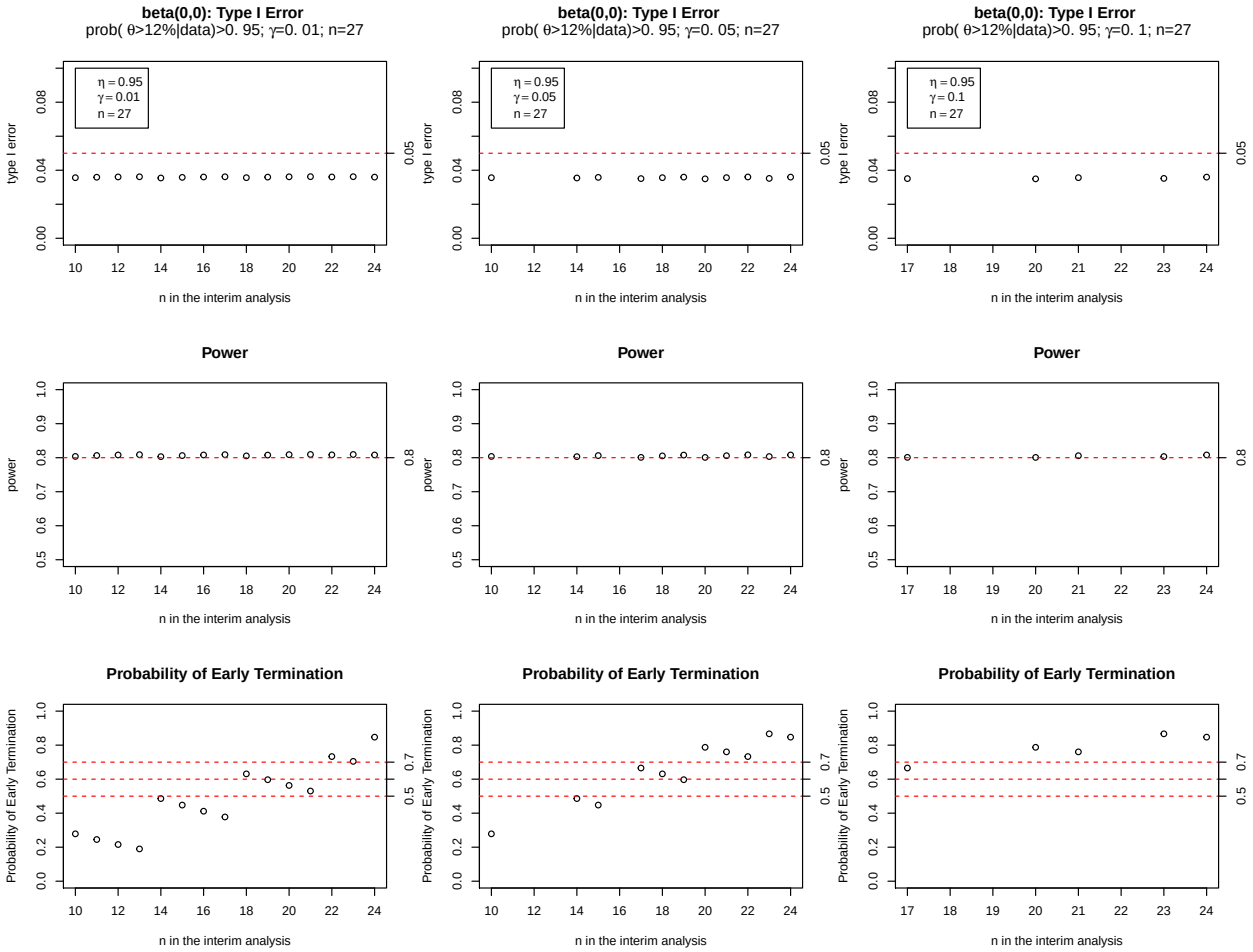

beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=27
η = 0.92
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=27
η = 0.92
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=27
η = 0.92
γ = 0.1
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

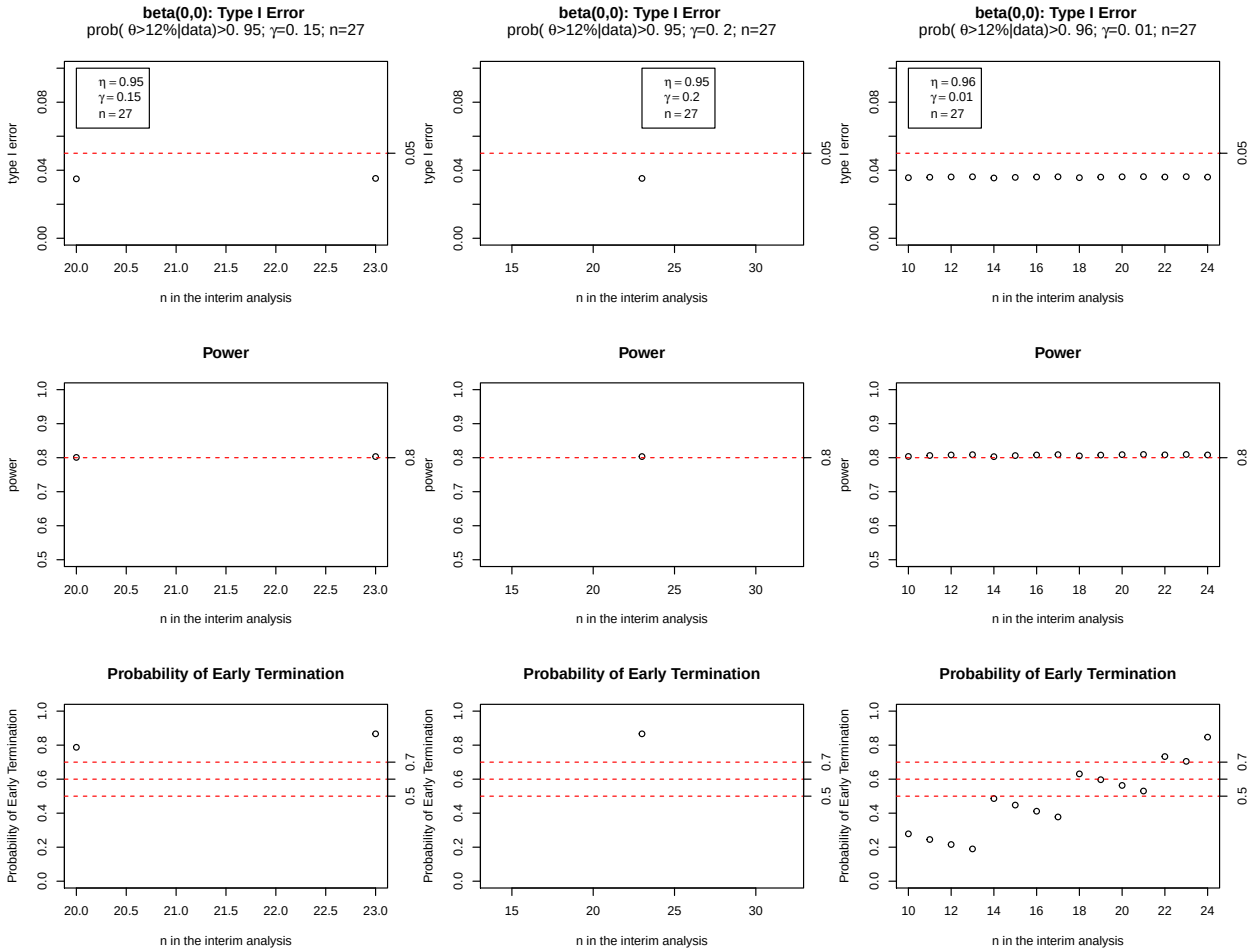

beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=27
η = 0.92
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=27
η = 0.92
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=27
η = 0.93
γ = 0.01
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

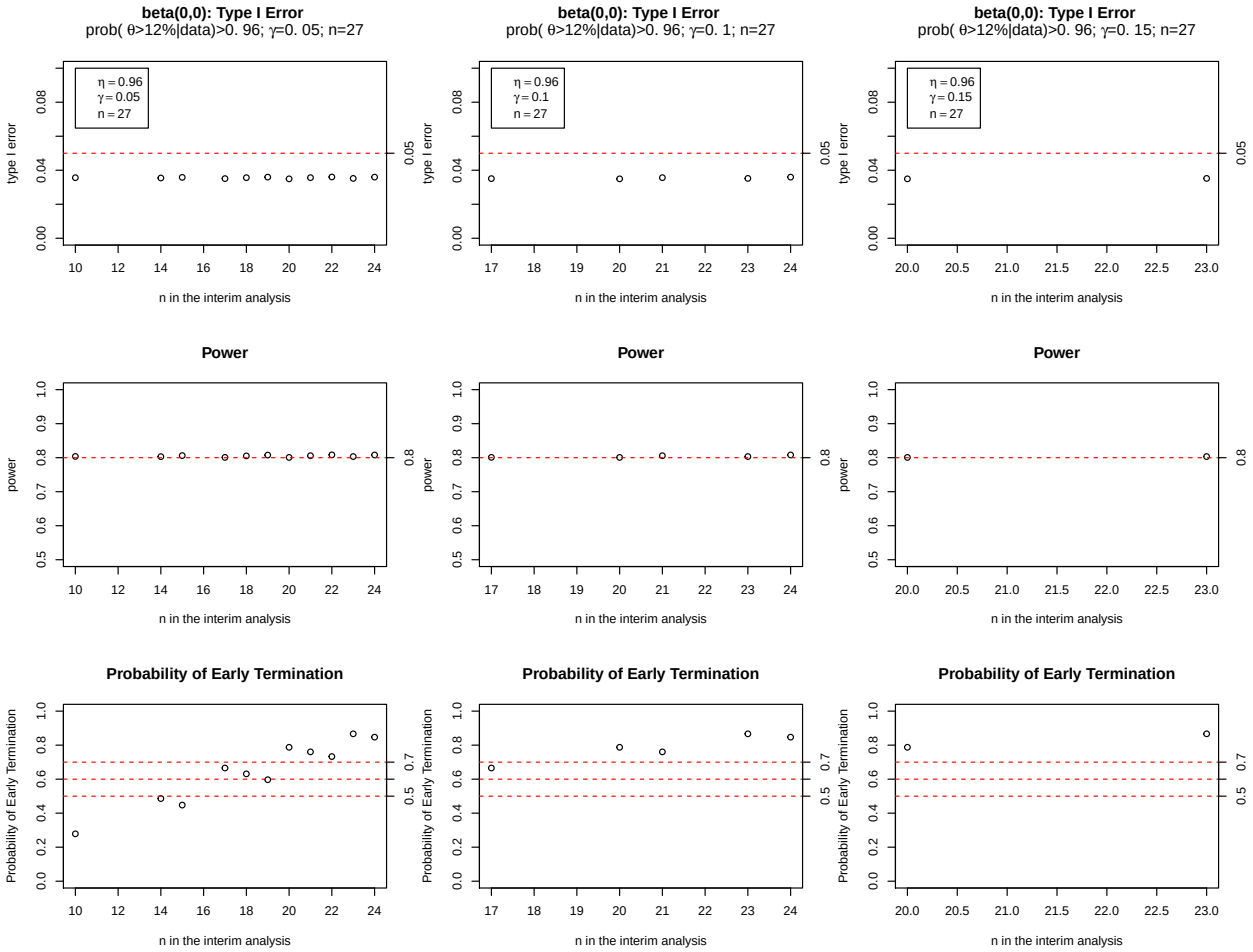

beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=27
η = 0.93
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=27
η = 0.93
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=27
η = 0.93
γ = 0.15
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

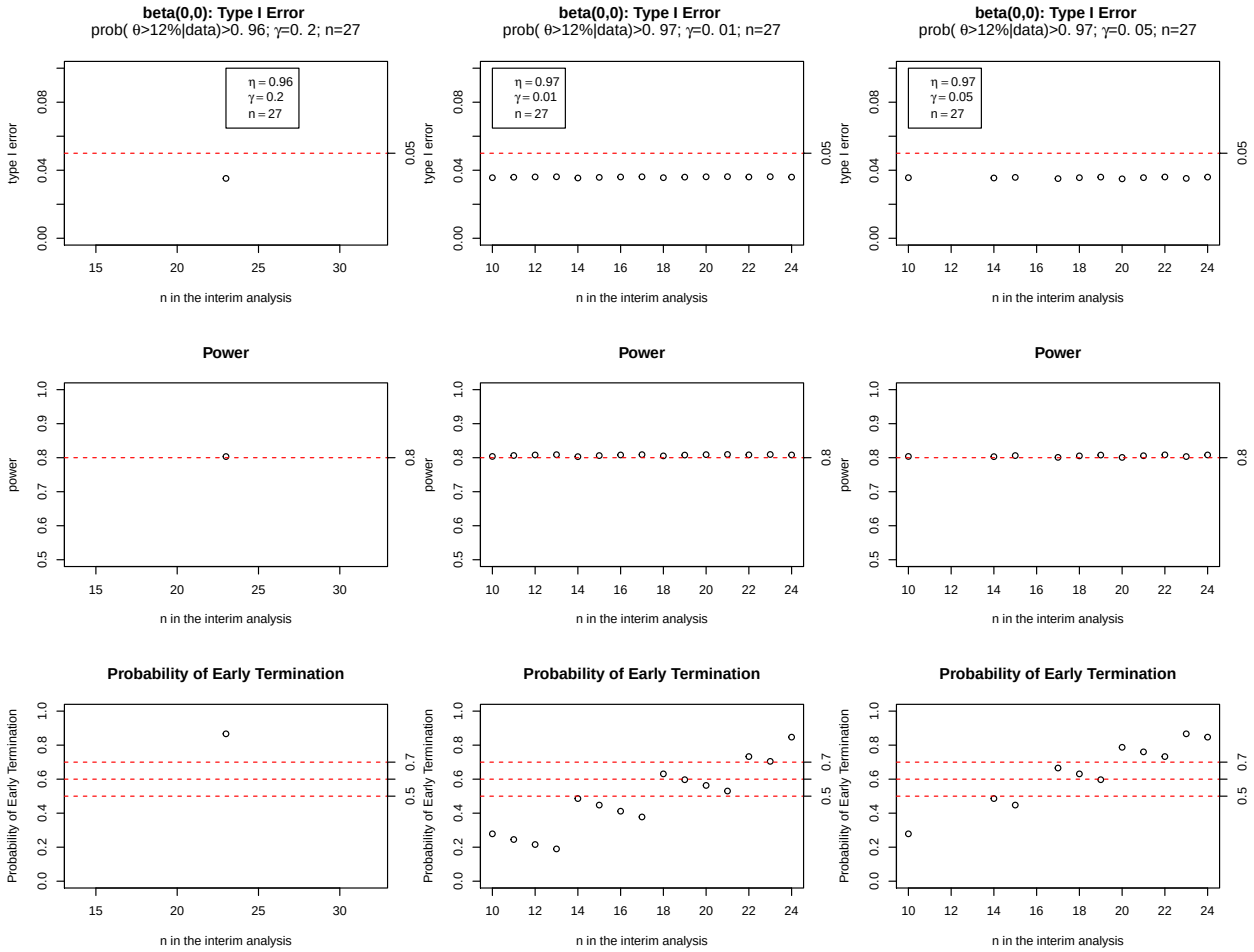

beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=27
η = 0.93
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 01; n=27
η = 0.94
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=27
η = 0.94
γ = 0.05
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

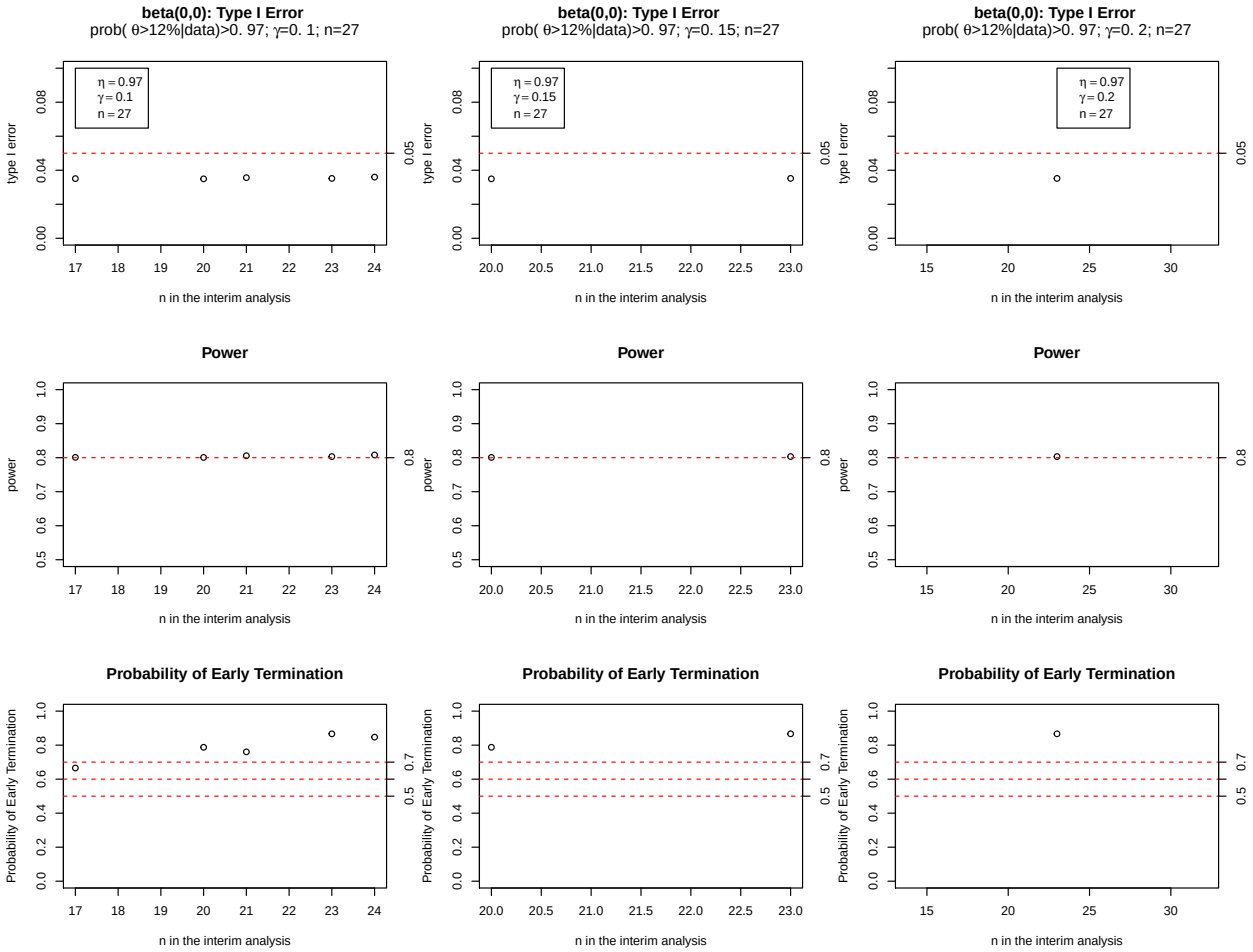

beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=27
η = 0.94
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=27
η = 0.94
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=27
η = 0.94
γ = 0.2
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

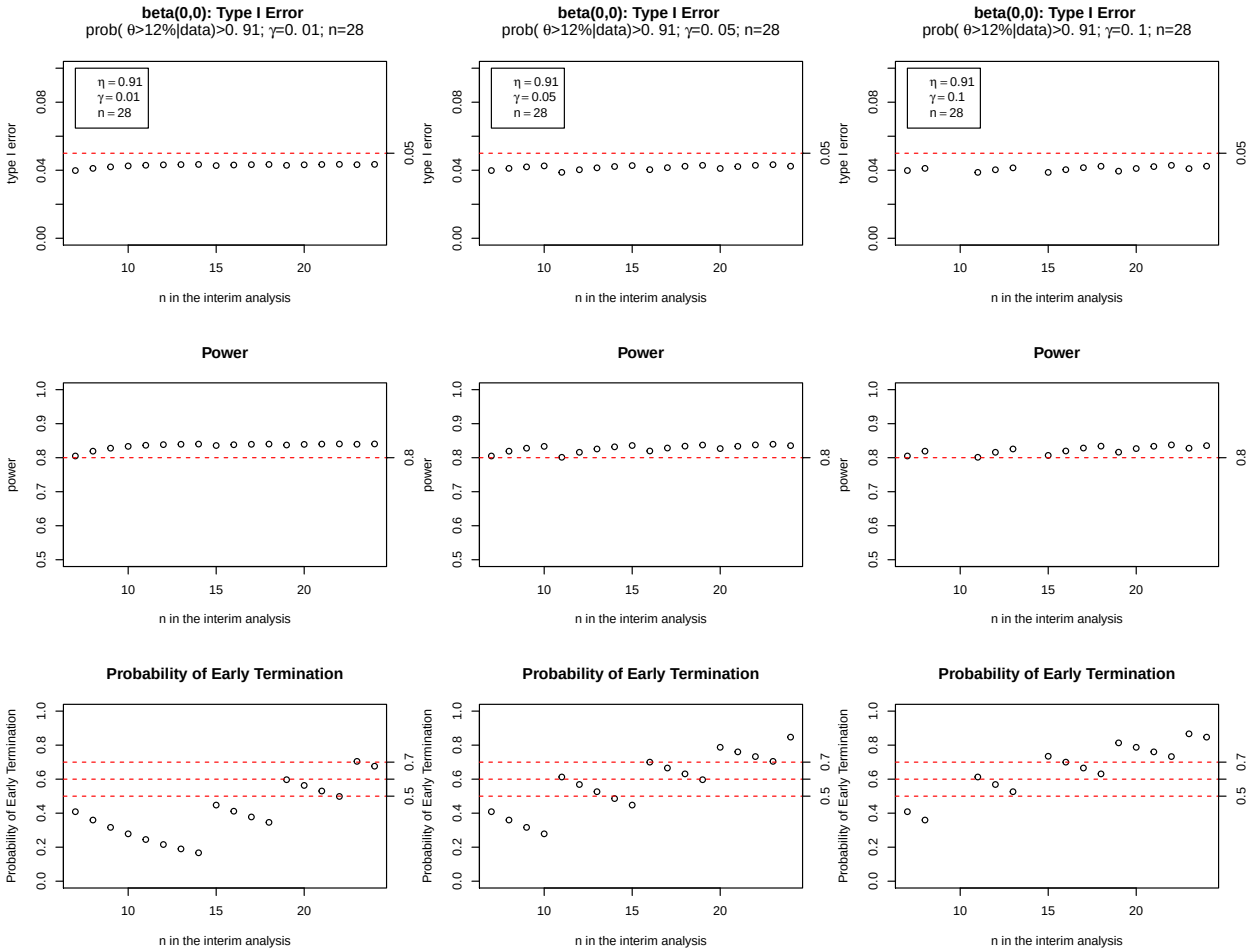

beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 01; n=27
η = 0.95
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=27
η = 0.95
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=27
η = 0.95
γ = 0.1
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

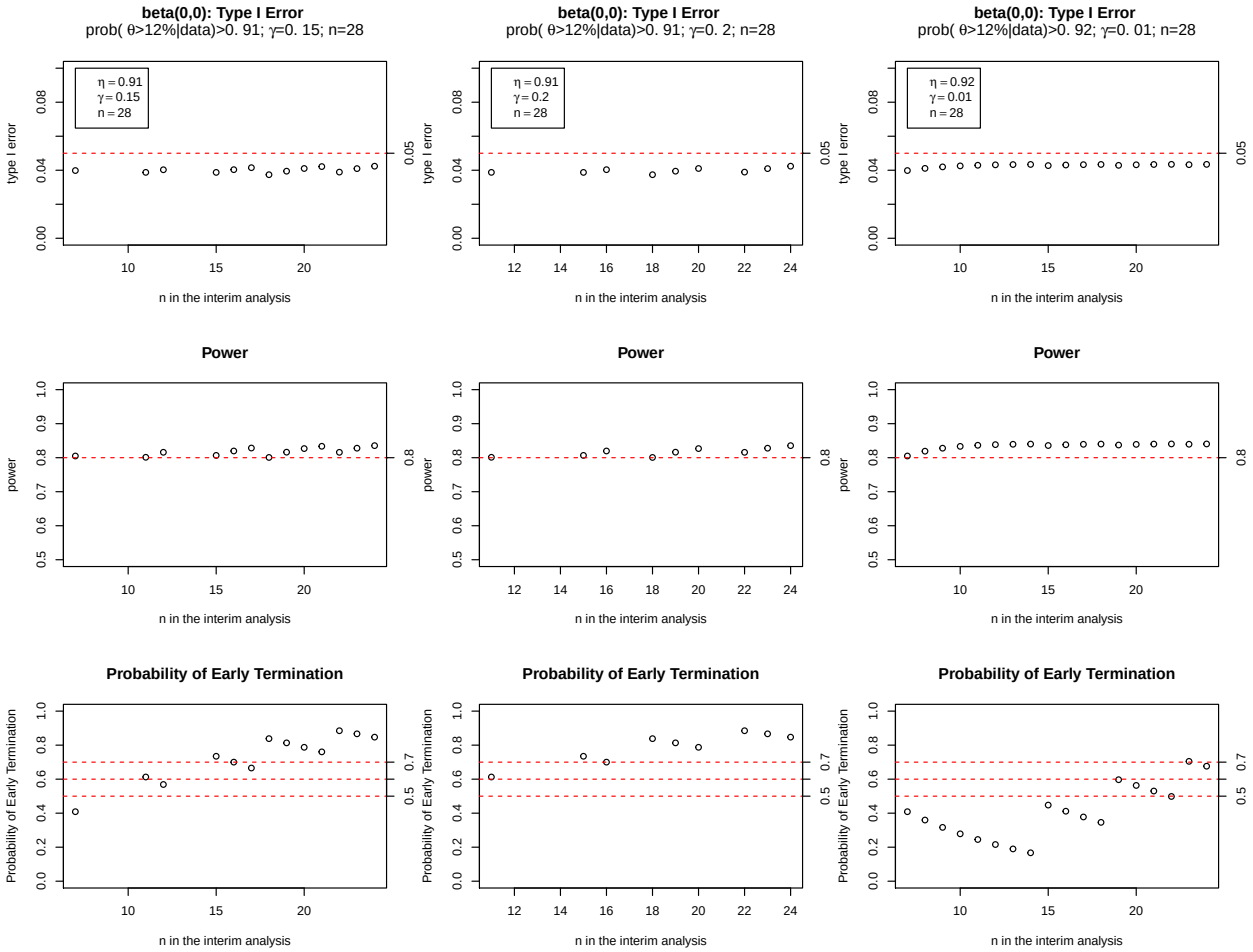

beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=27
η = 0.95
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=27
η = 0.95
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 01; n=27
η = 0.96
γ = 0.01
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

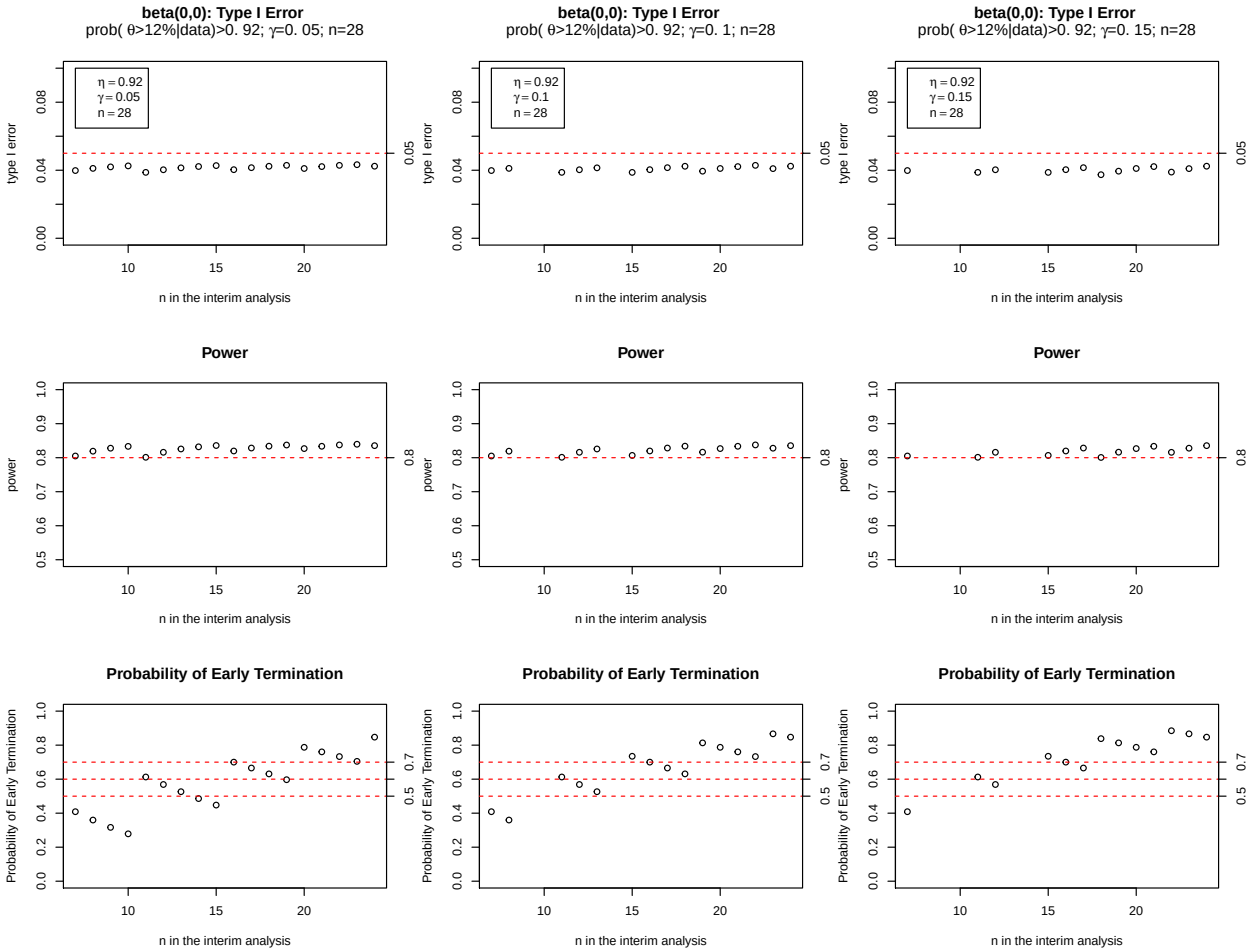

beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 05; n=27
η = 0.96
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 1; n=27
η = 0.96
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 15; n=27
η = 0.96
γ = 0.15
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

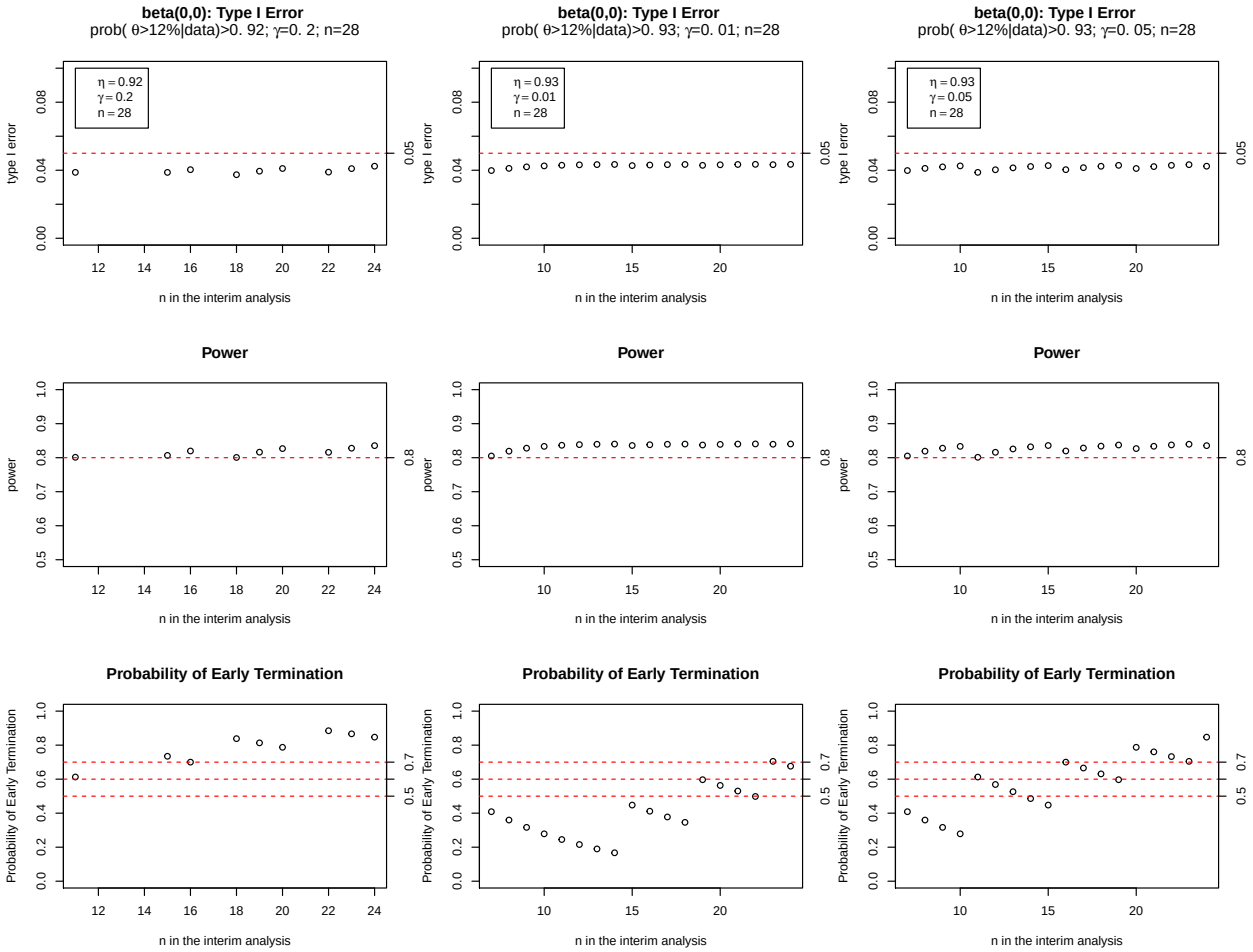

beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=27
η = 0.96
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 01; n=27
η = 0.97
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 05; n=27
η = 0.97
γ = 0.05
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

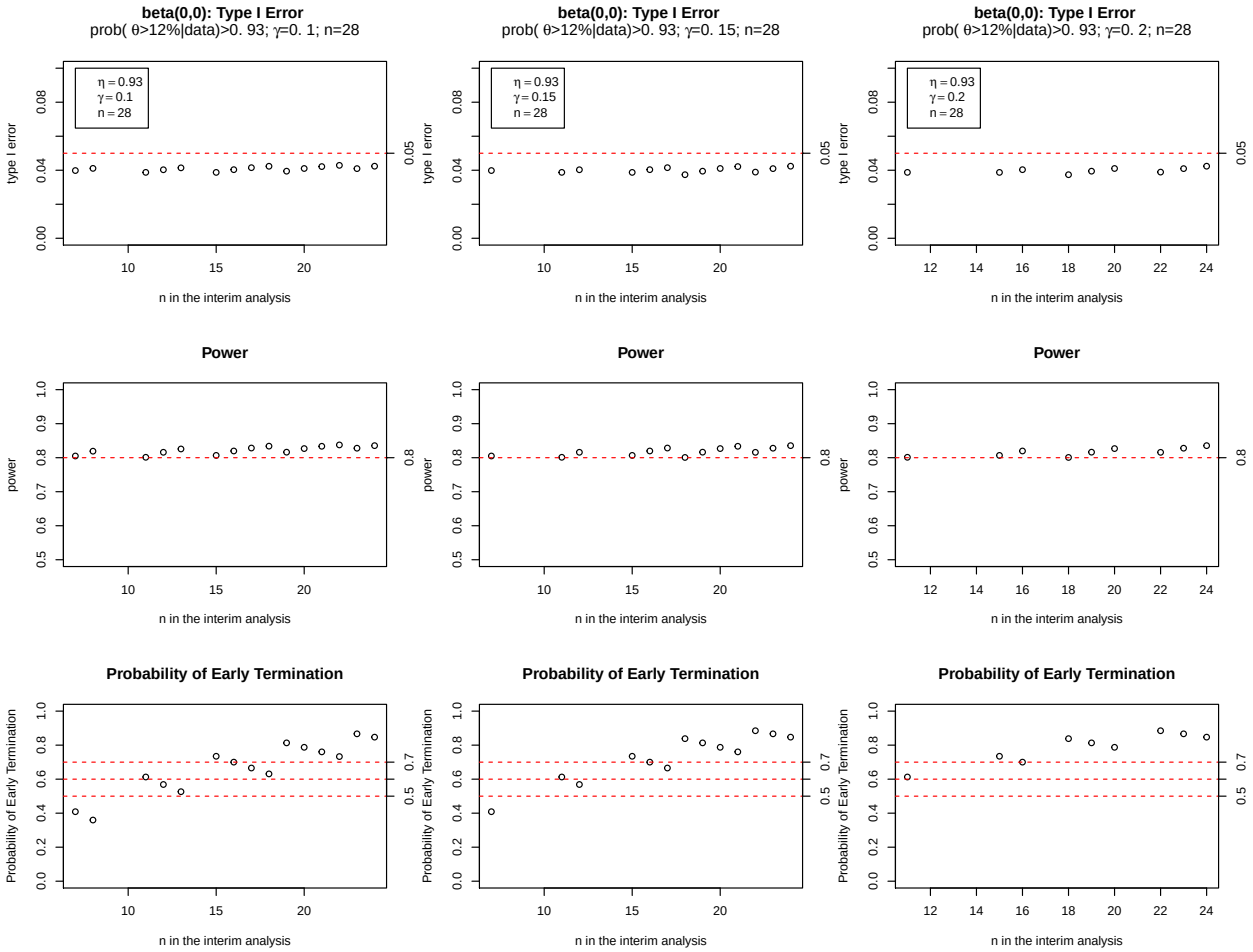

beta(0,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 1; n=27
η = 0.97
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 15; n=27
η = 0.97
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 2; n=27
η = 0.97
γ = 0.2
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

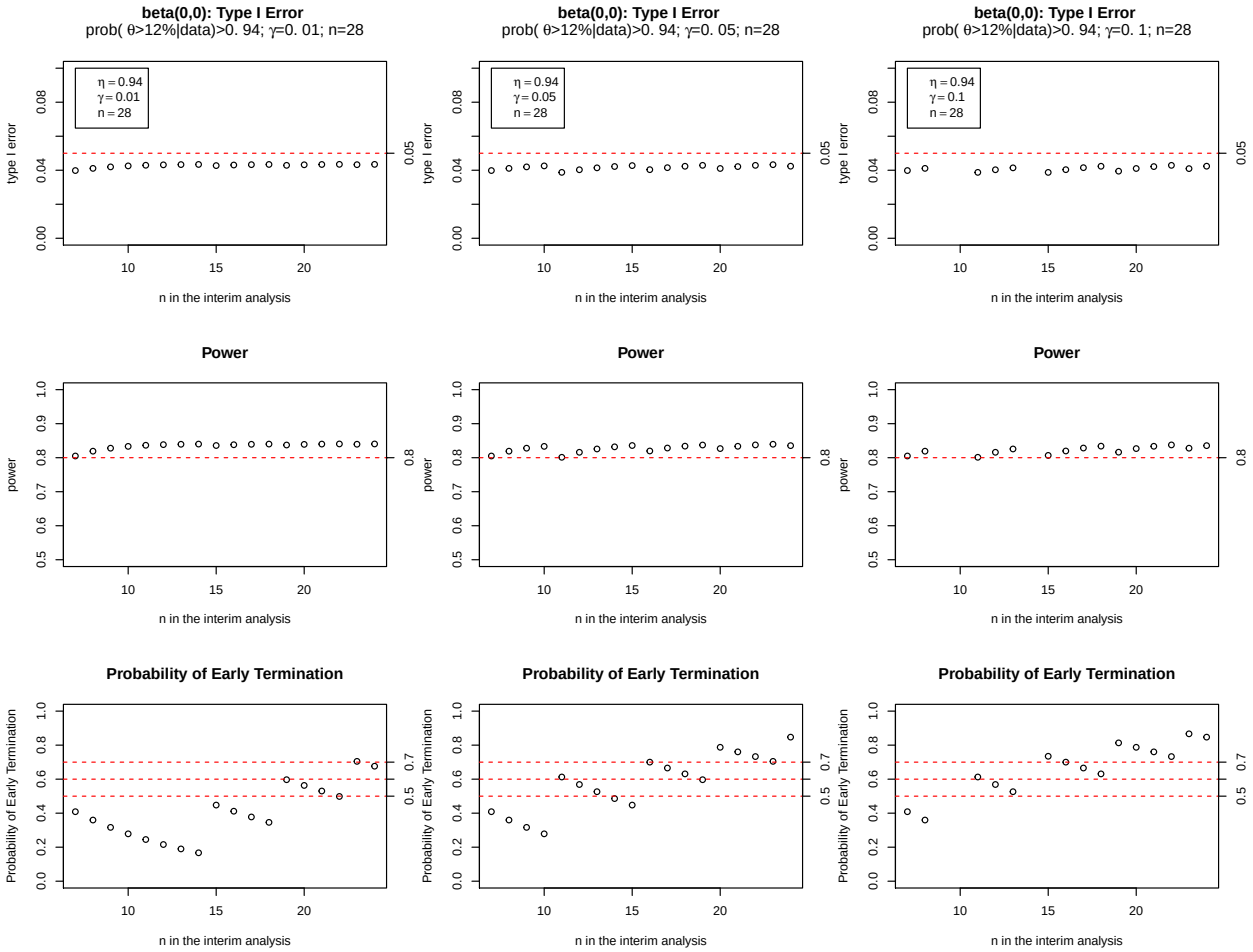

beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 01; n=28
η = 0.91
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 05; n=28
η = 0.91
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=28
η = 0.91
γ = 0.1
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

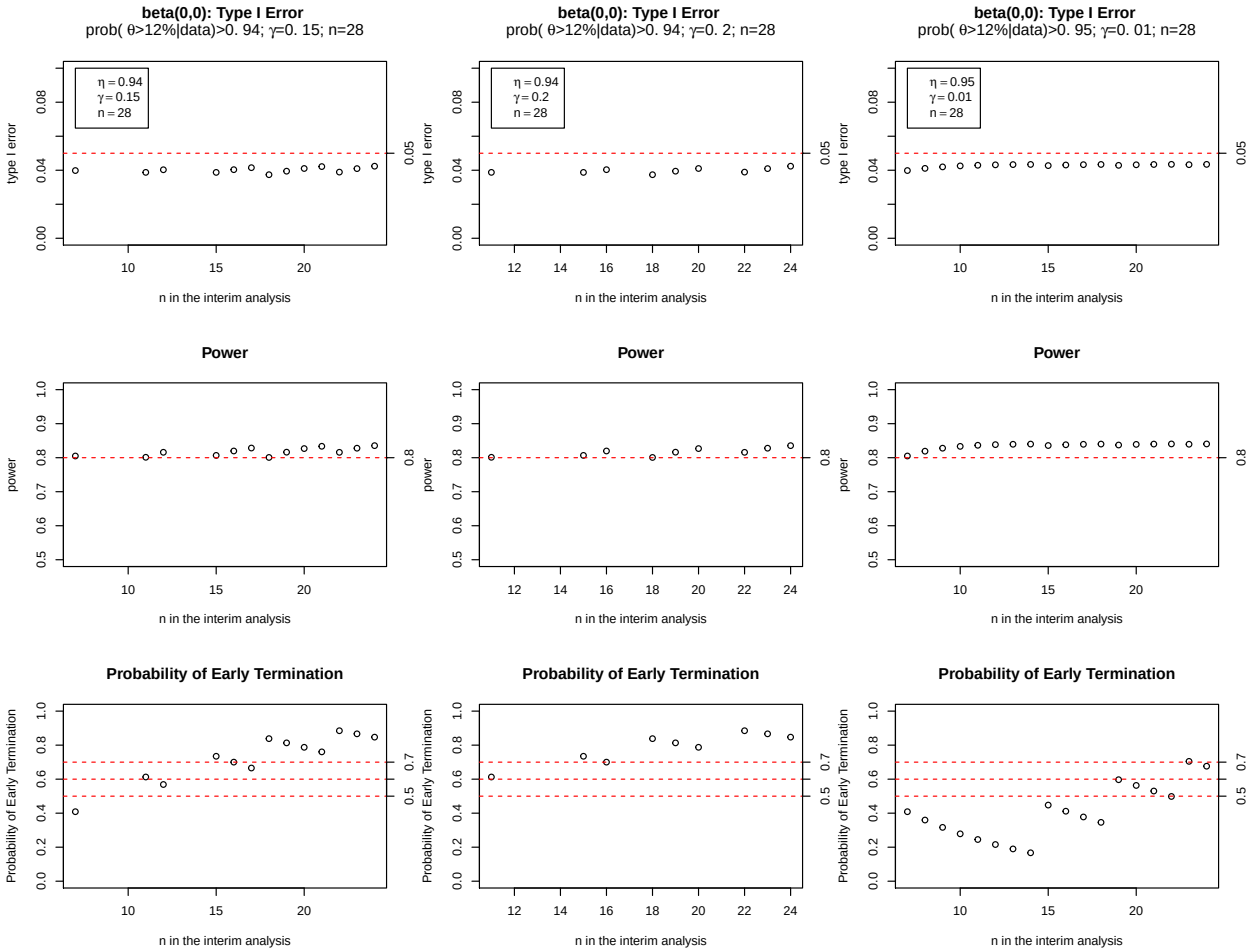

beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=28
η = 0.91
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=28
η = 0.91
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=28
η = 0.92
γ = 0.01
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

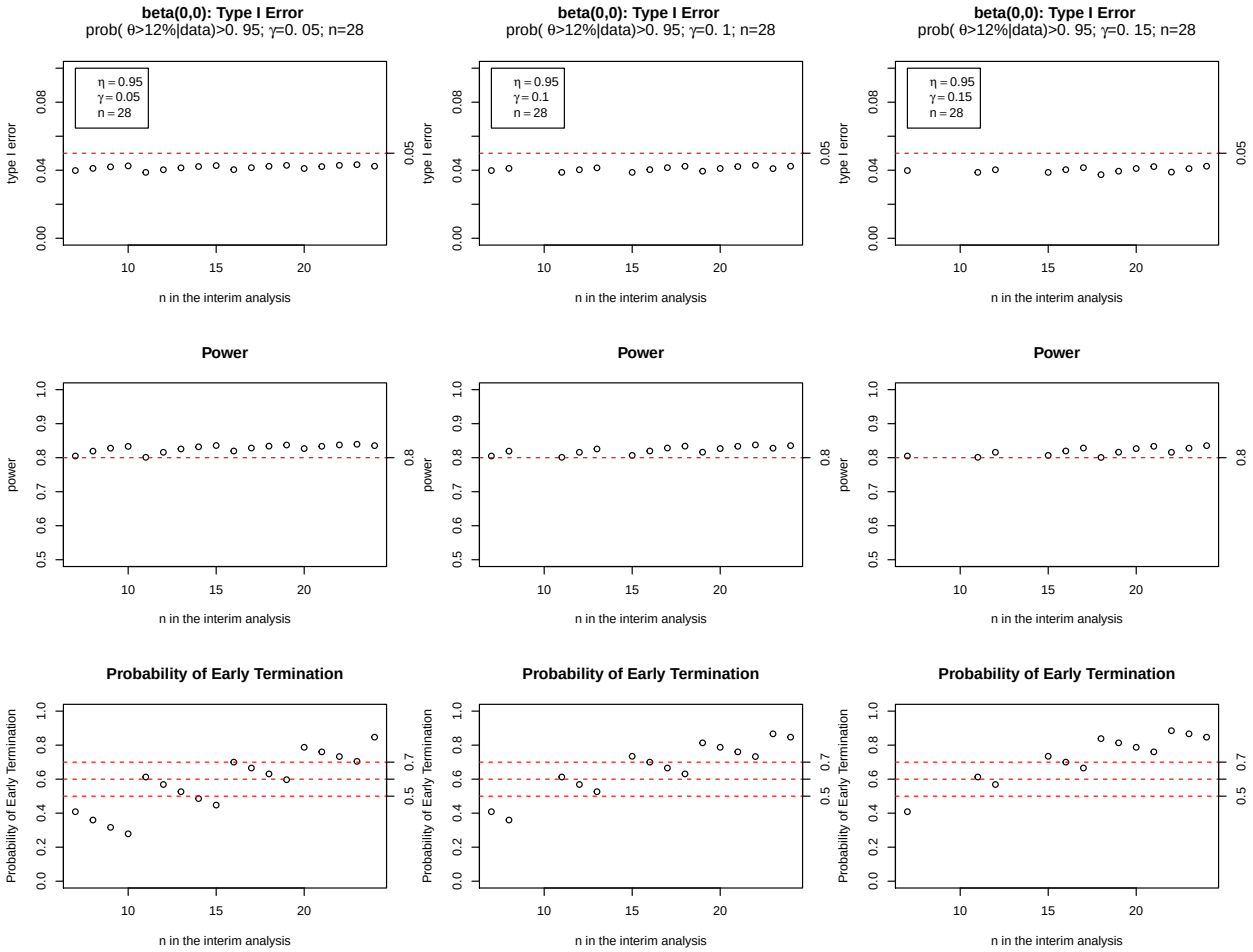

beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=28
η = 0.92
γ = 0.05
n = 28
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=28
η = 0.92
γ = 0.1
n = 28
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=28
η = 0.92
γ = 0.15
n = 28
type I error
Power
power
Probability of Early Termination
n in the interim analysis

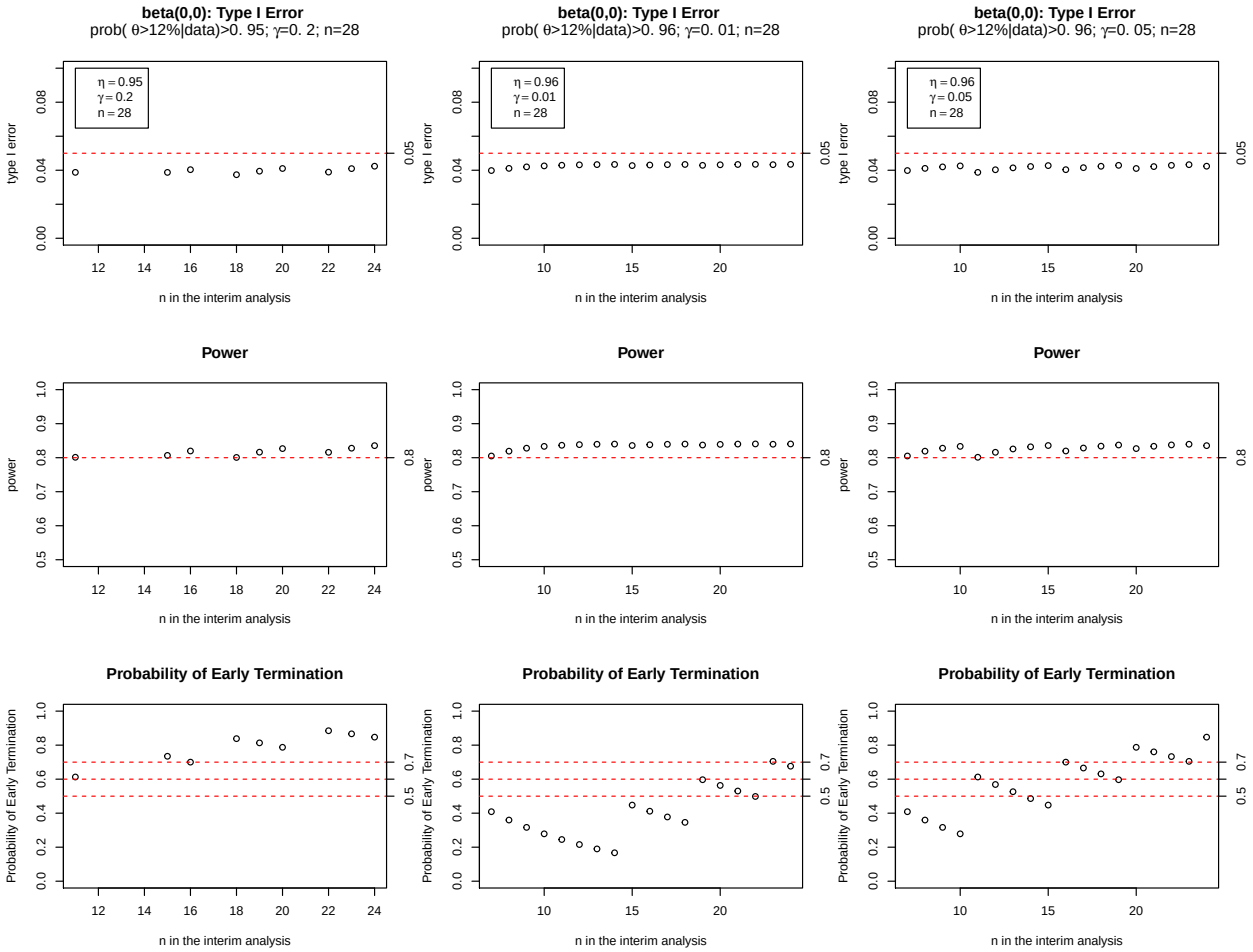

beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=28
η = 0.92
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=28
η = 0.93
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=28
η = 0.93
γ = 0.05
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

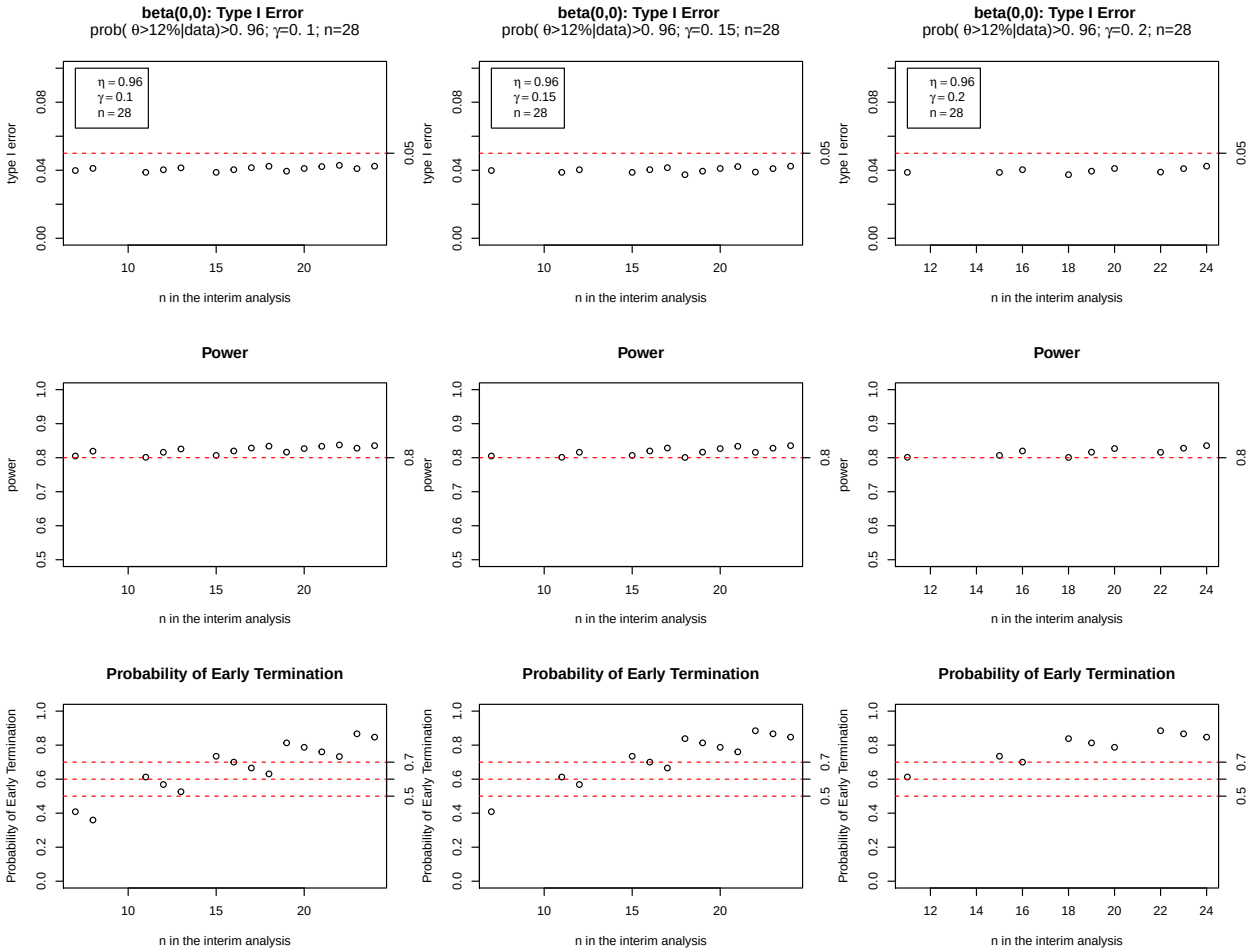

beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=28
η = 0.93
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=28
η = 0.93
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=28
η = 0.93
γ = 0.2
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

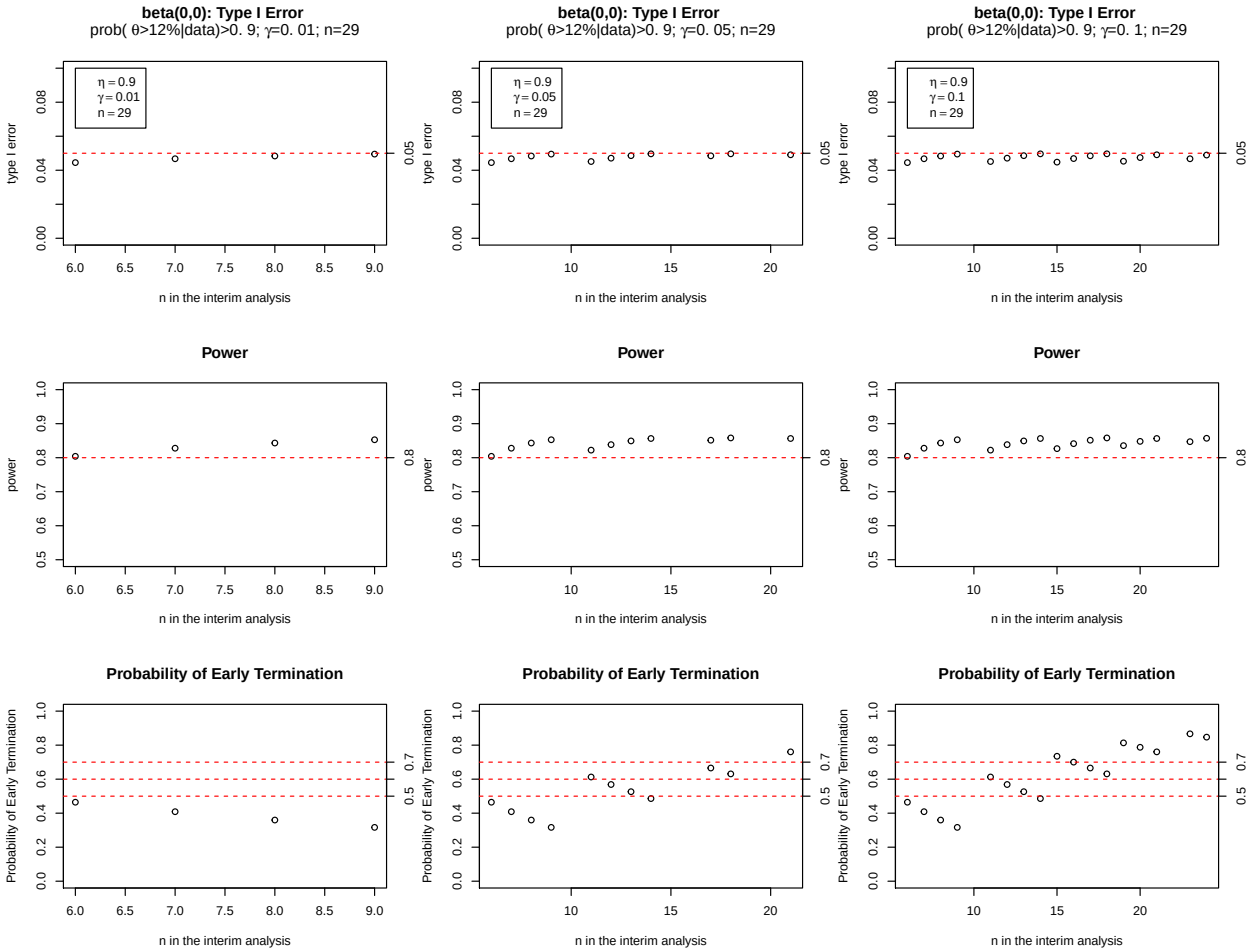

beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 01; n=28
η = 0.94
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=28
η = 0.94
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=28
η = 0.94
γ = 0.1
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

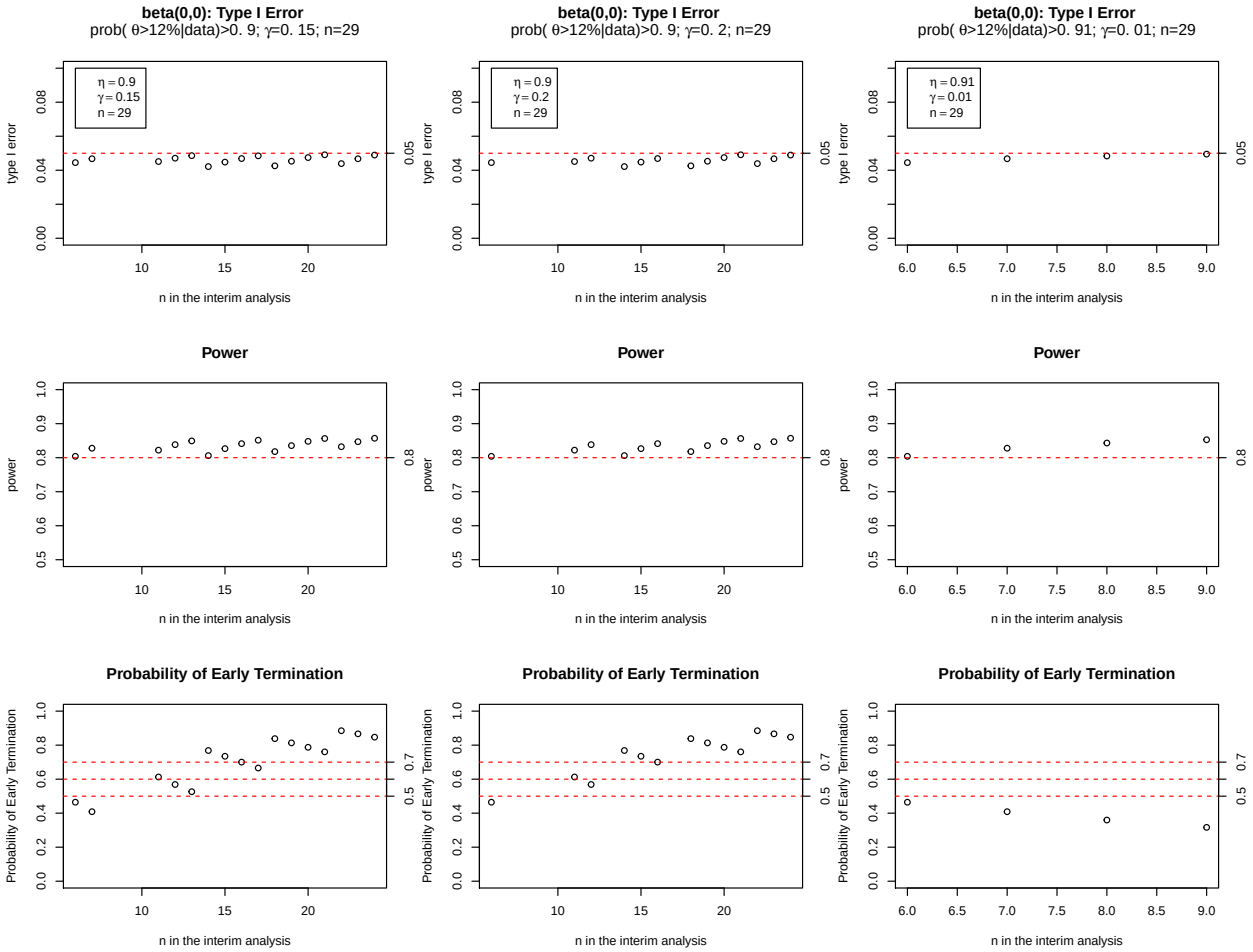

beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=28
η = 0.94
γ = 0.15
n = 28
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=28
η = 0.94
γ = 0.2
n = 28
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 01; n=28
η = 0.95
γ = 0.01
n = 28
type I error
Power
power
Probability of Early Termination
n in the interim analysis

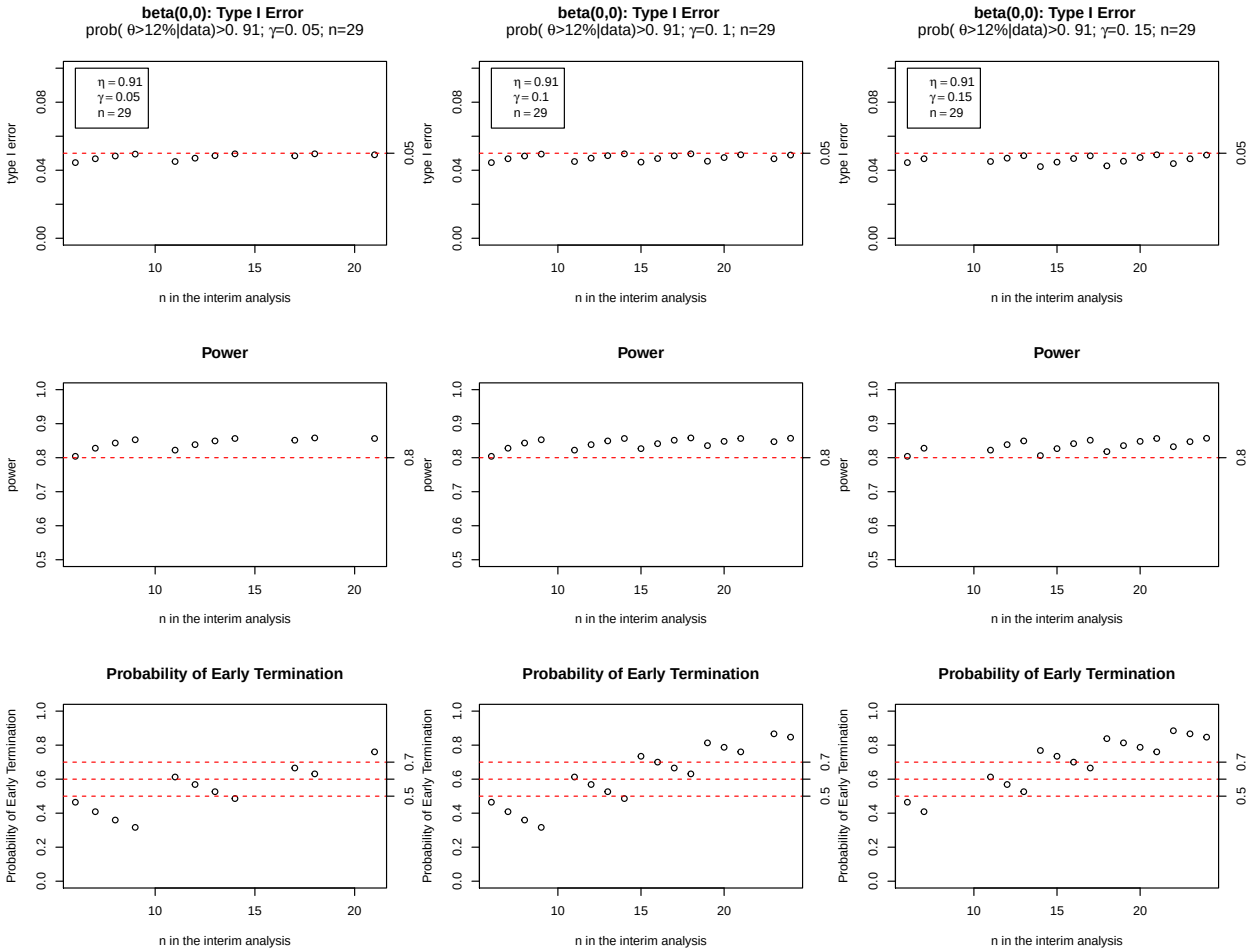

beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=28
η = 0.95
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=28
η = 0.95
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=28
η = 0.95
γ = 0.15
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

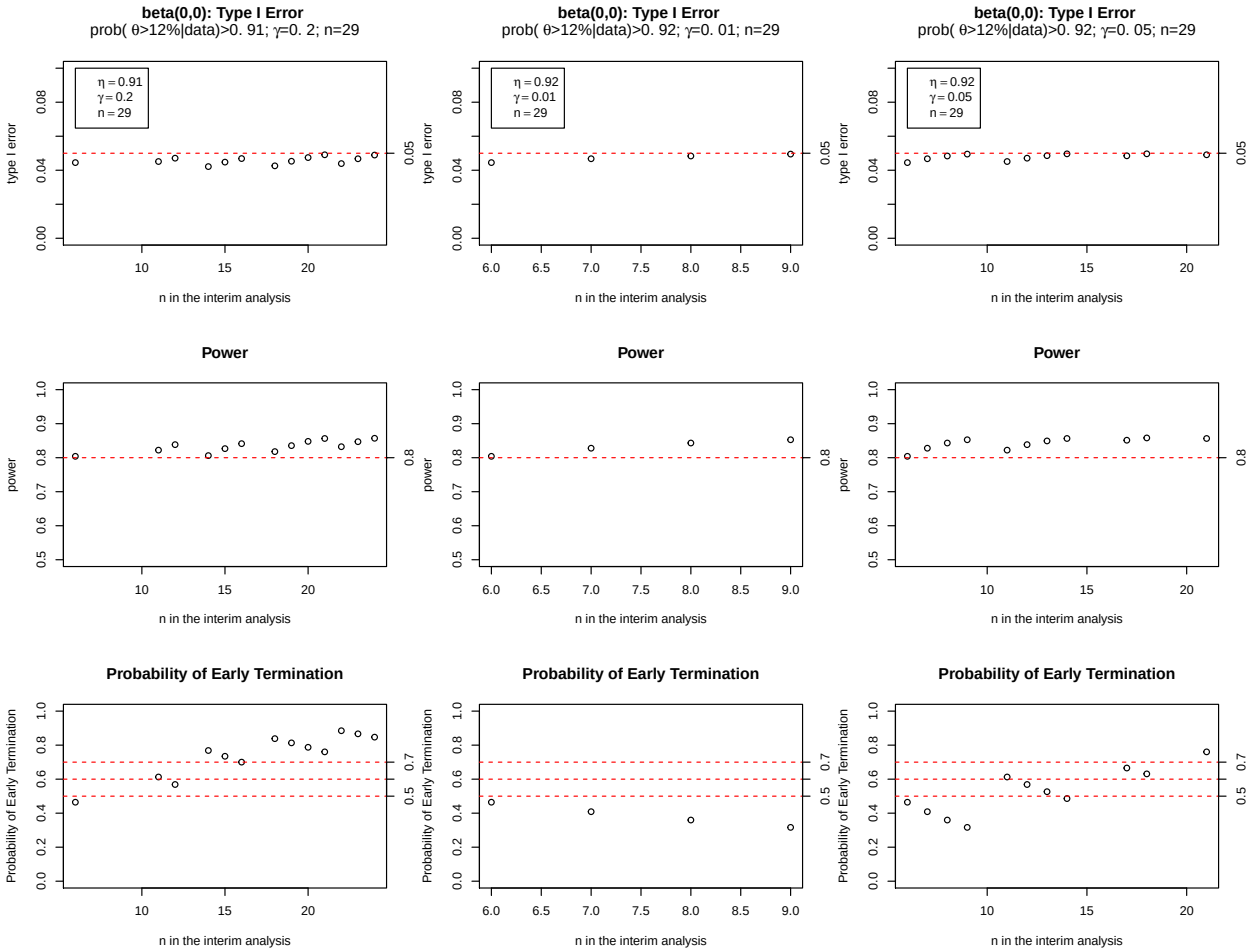

beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=28
η = 0.95
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 01; n=28
η = 0.96
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 05; n=28
η = 0.96
γ = 0.05
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

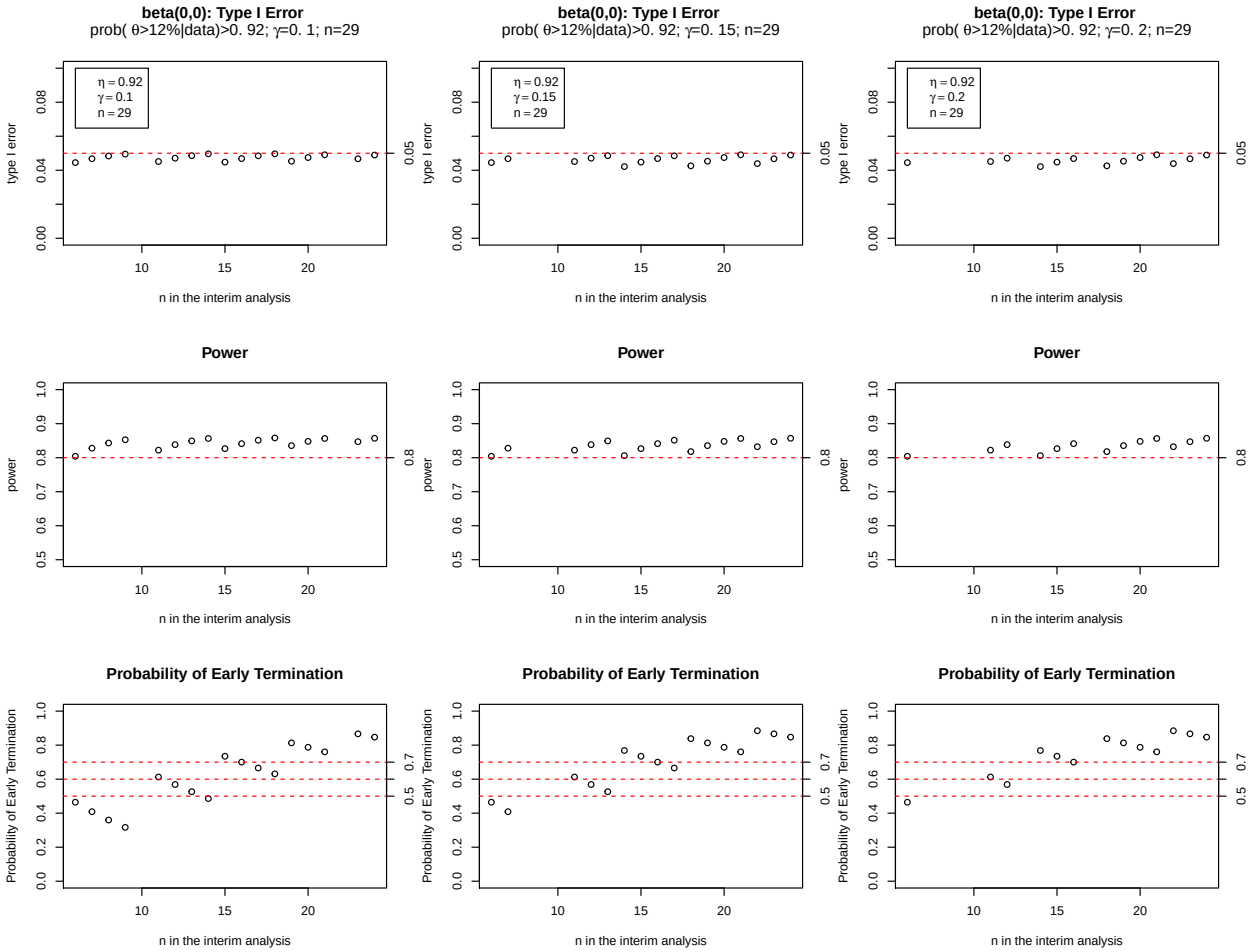

beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 1; n=28
η = 0.96
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 15; n=28
η = 0.96
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=28
η = 0.96
γ = 0.2
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

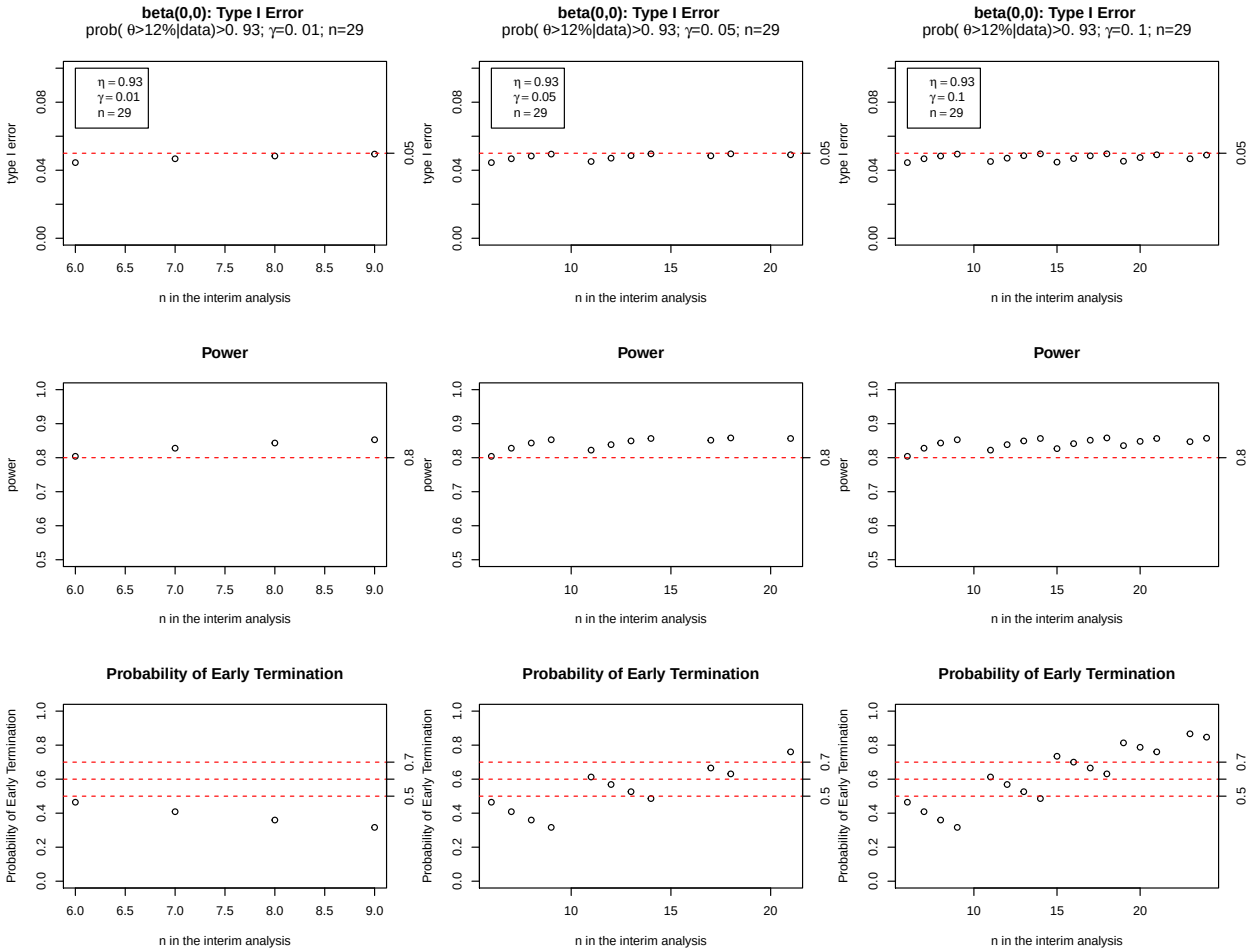

beta(0,0): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 01; n=29
η = 0.9
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 05; n=29
η = 0.9
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=29
η = 0.9
γ = 0.1
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

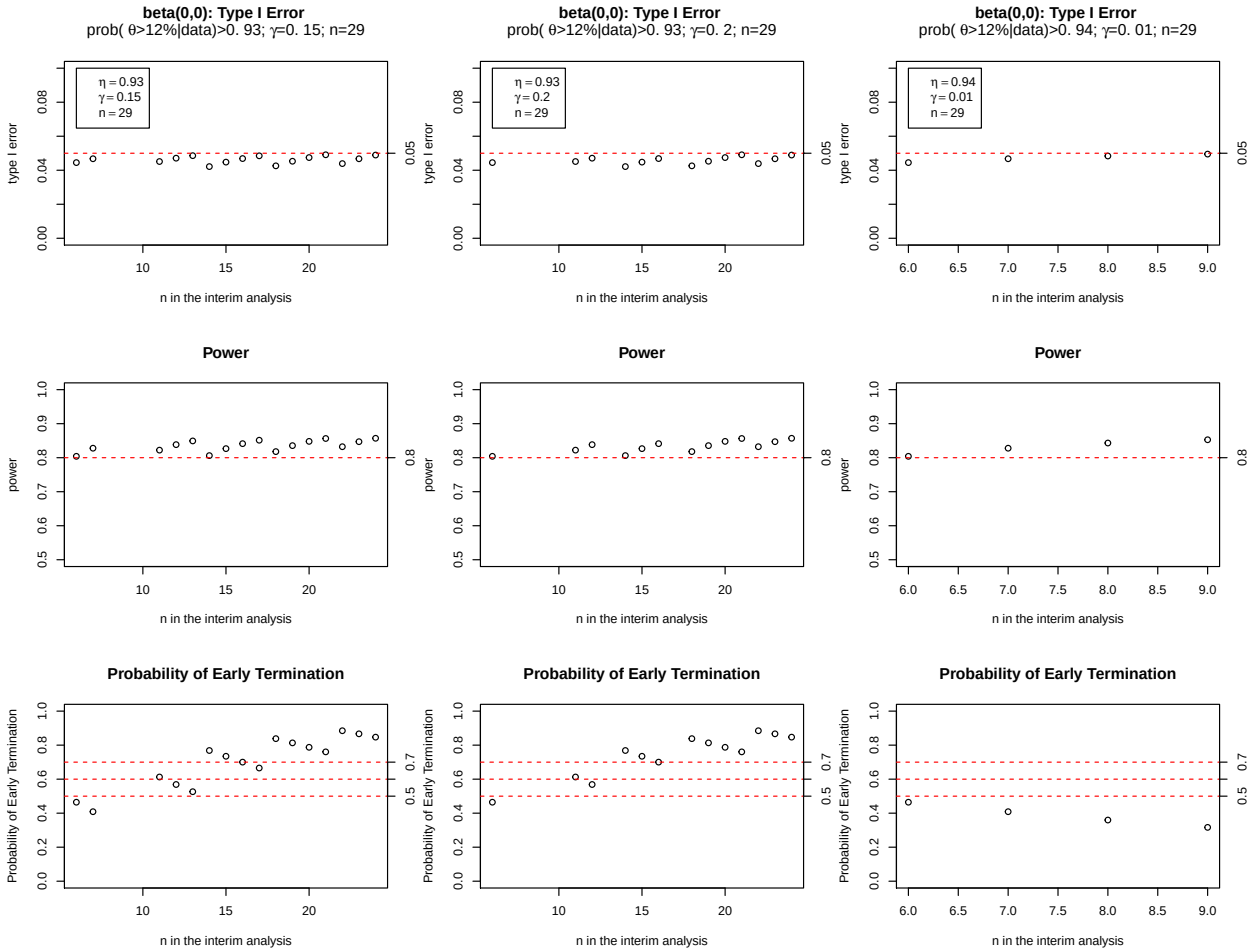

beta(0,0): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=29
η = 0.9
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 2; n=29
η = 0.9
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 01; n=29
η = 0.91
γ = 0.01
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

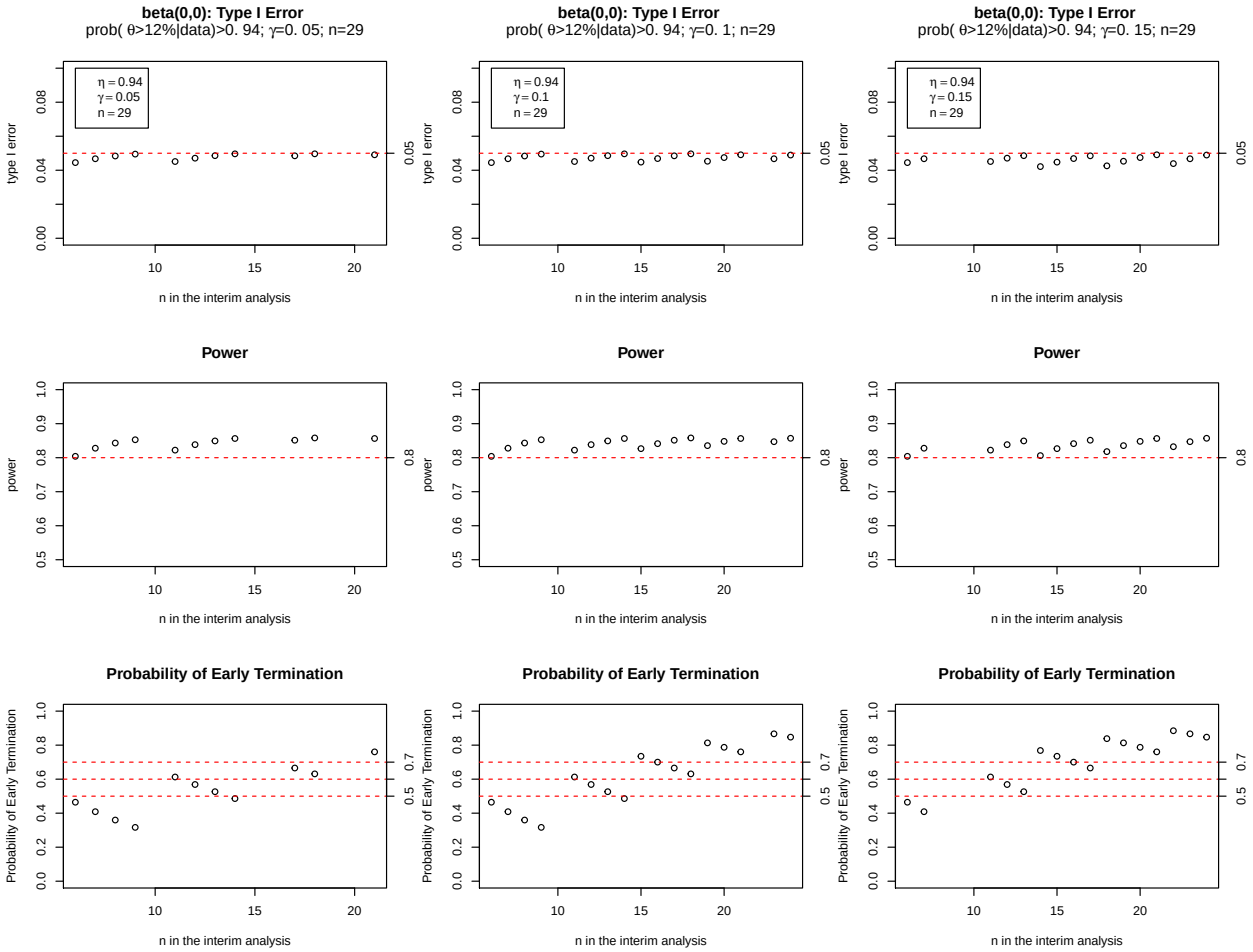

beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 05; n=29
η = 0.91
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=29
η = 0.91
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=29
η = 0.91
γ = 0.15
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

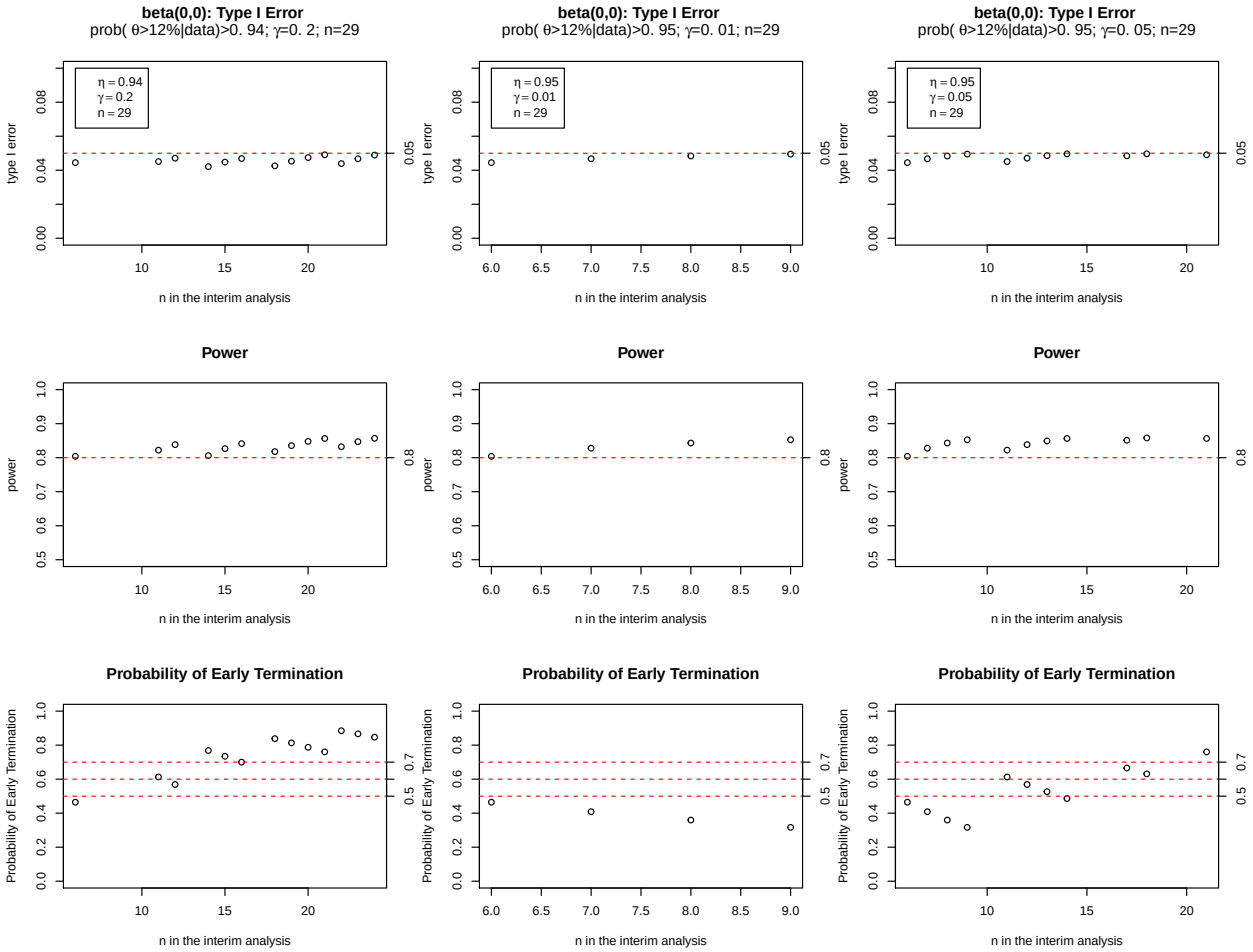

beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=29
η = 0.91
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=29
η = 0.92
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=29
η = 0.92
γ = 0.05
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

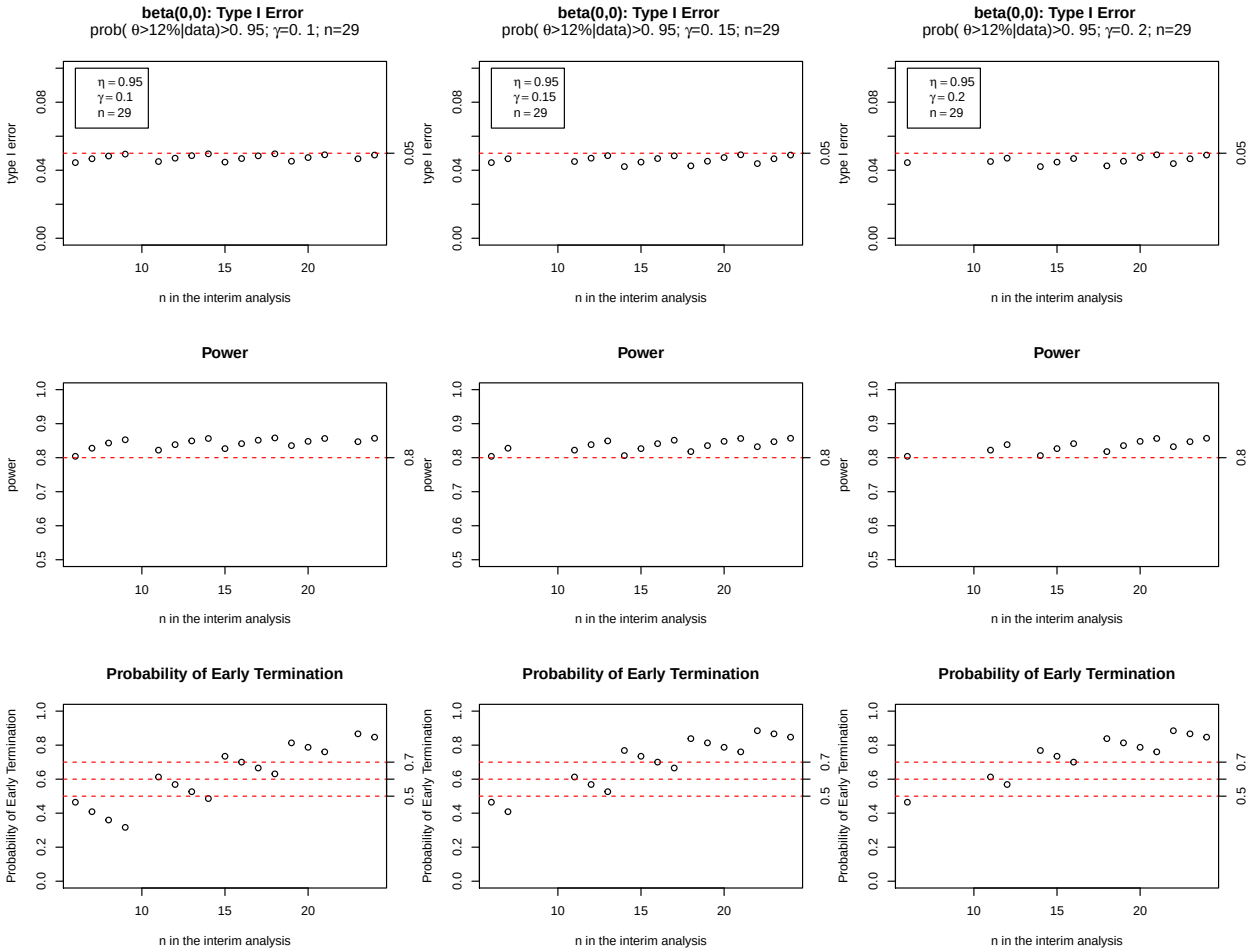

beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=29
η = 0.92
γ = 0.1
n = 29
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=29
η = 0.92
γ = 0.15
n = 29
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=29
η = 0.92
γ = 0.2
n = 29
type I error
Power
power
Probability of Early Termination
n in the interim analysis

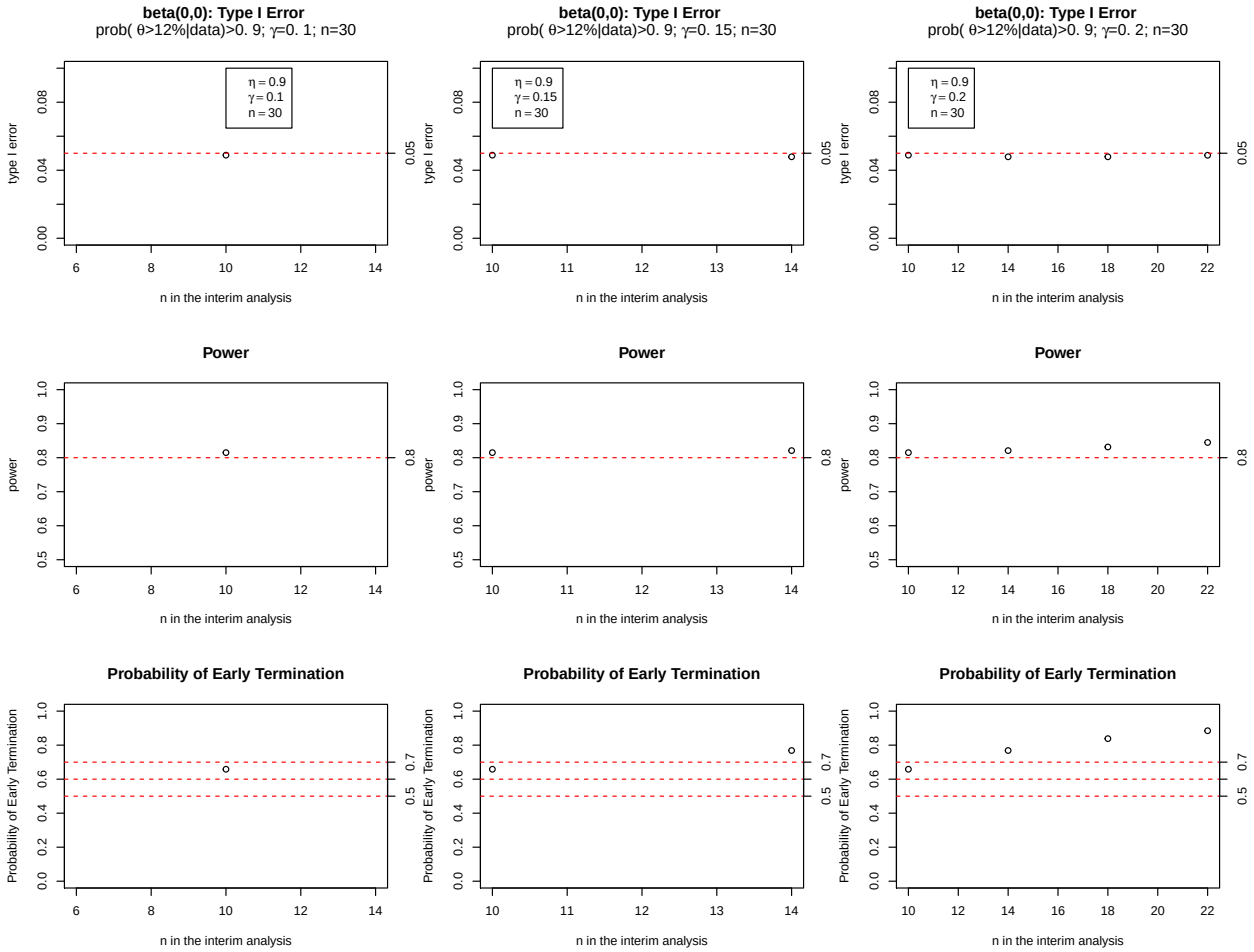

beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=29
η = 0.93
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=29
η = 0.93
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=29
η = 0.93
γ = 0.1
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

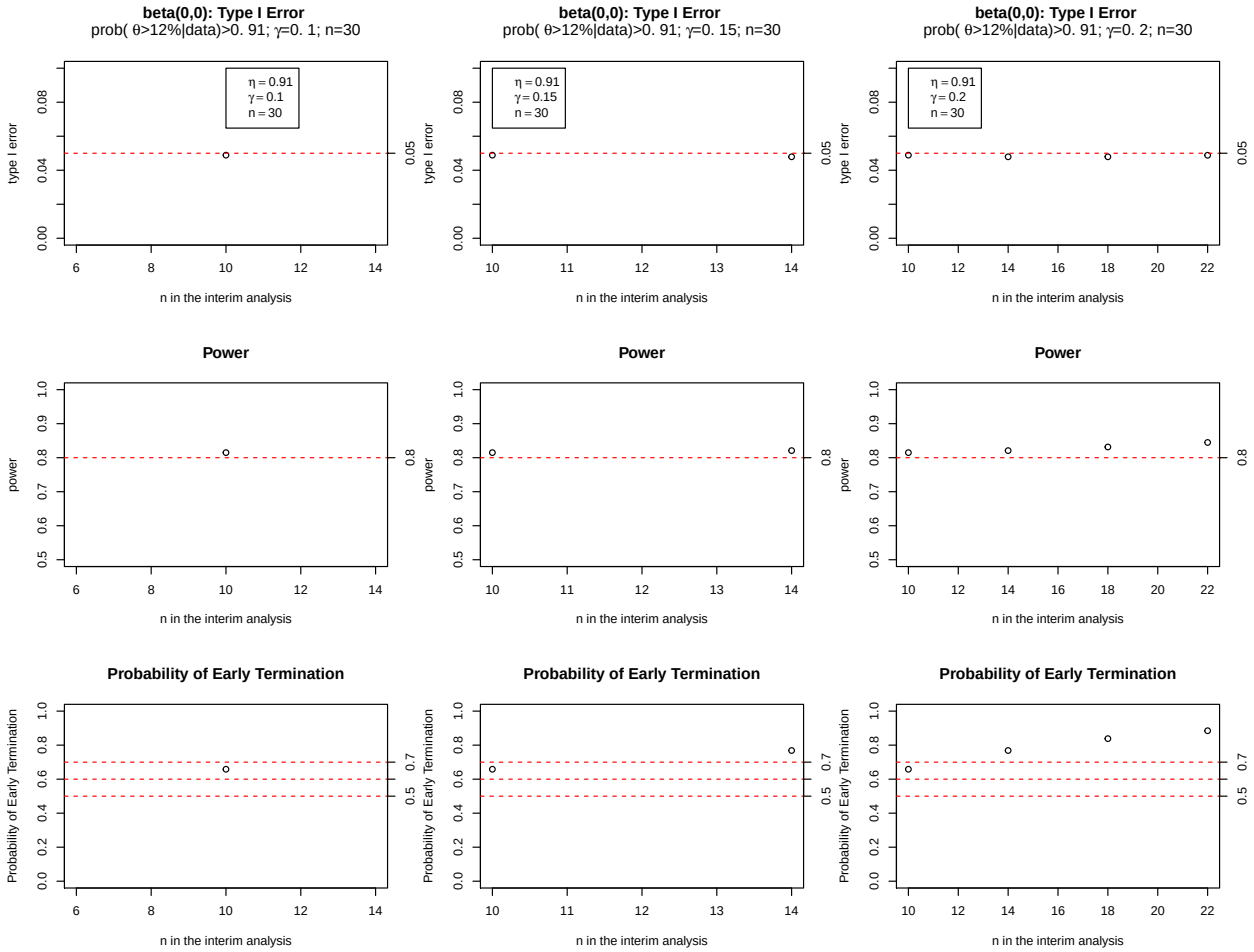

beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=29
η = 0.93
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=29
η = 0.93
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 01; n=29
η = 0.94
γ = 0.01
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

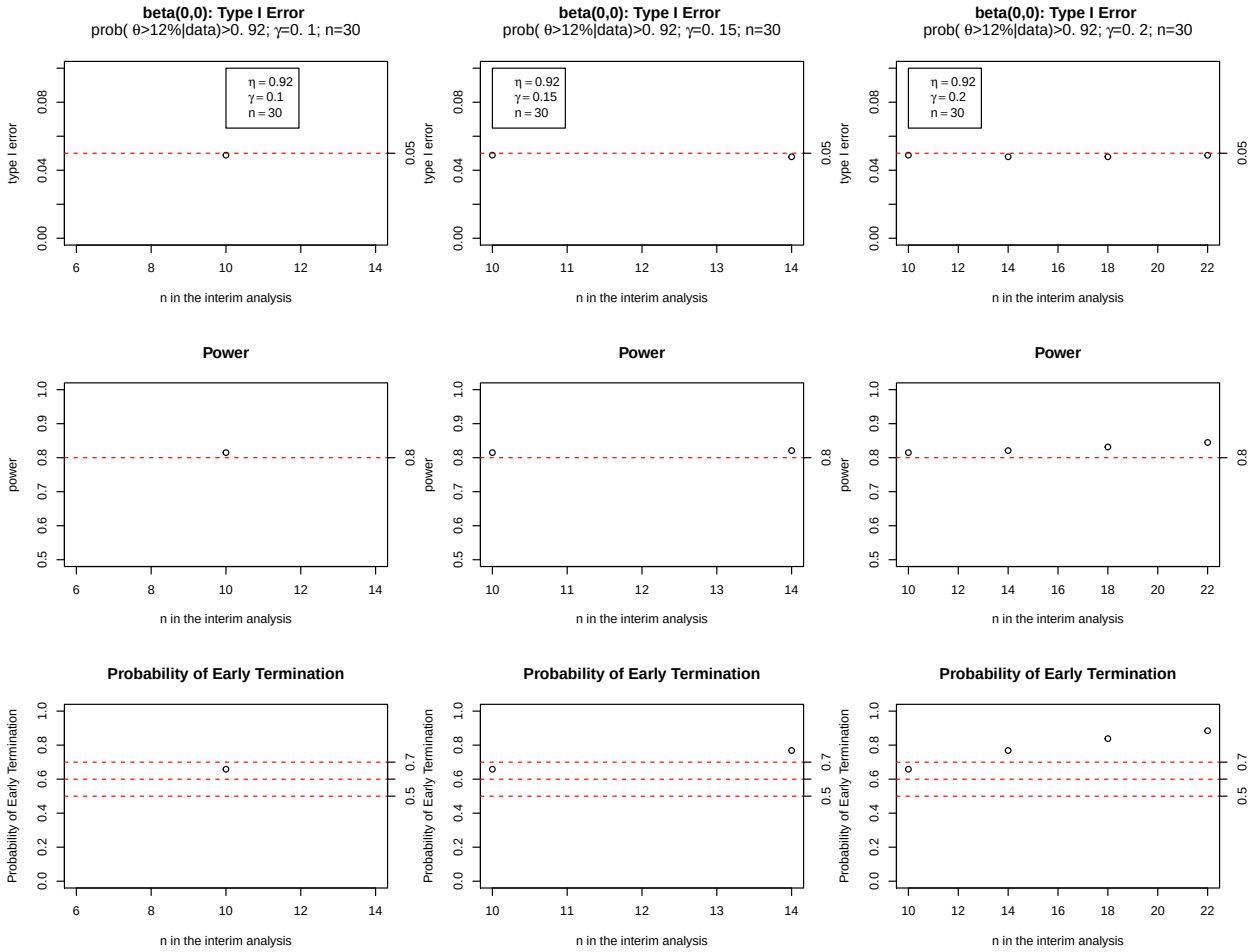

beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=29
η = 0.94
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=29
η = 0.94
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=29
η = 0.94
γ = 0.15
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

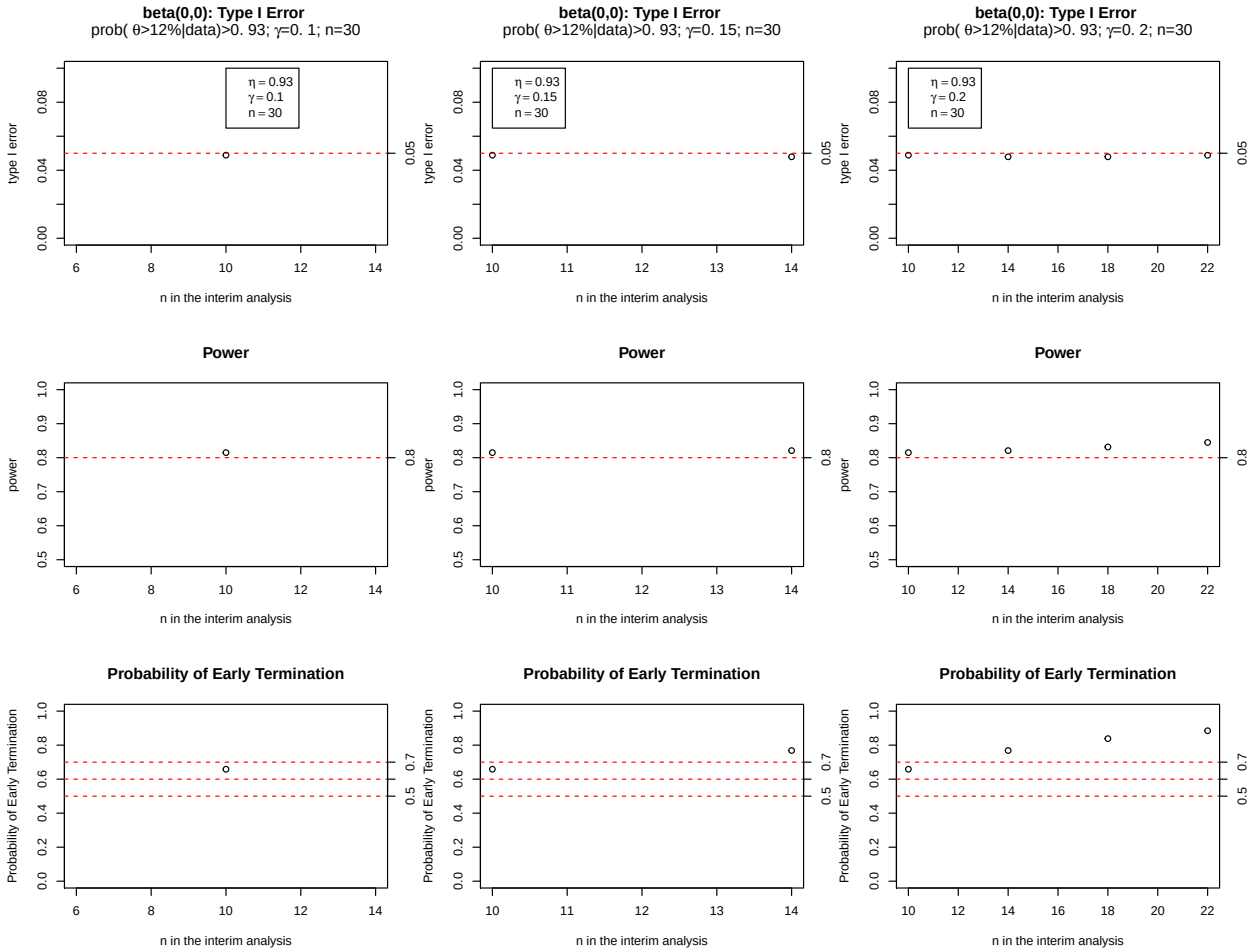

beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=29
η = 0.94
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 01; n=29
η = 0.95
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=29
η = 0.95
γ = 0.05
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

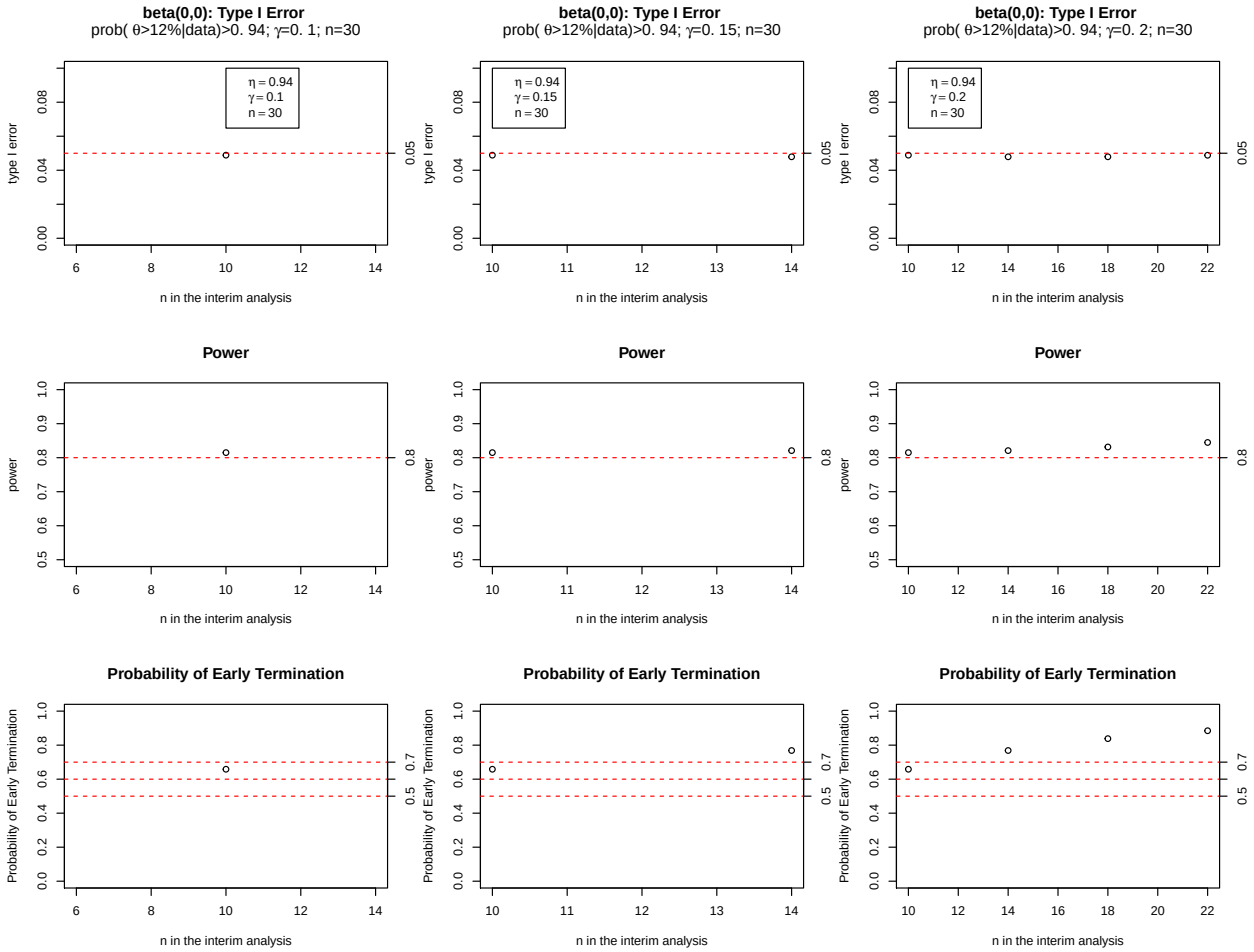

beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=29
η = 0.95
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=29
η = 0.95
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=29
η = 0.95
γ = 0.2
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis


beta(0,0): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=30
η = 0.9
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=30
η = 0.9
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 2; n=30
η = 0.9
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

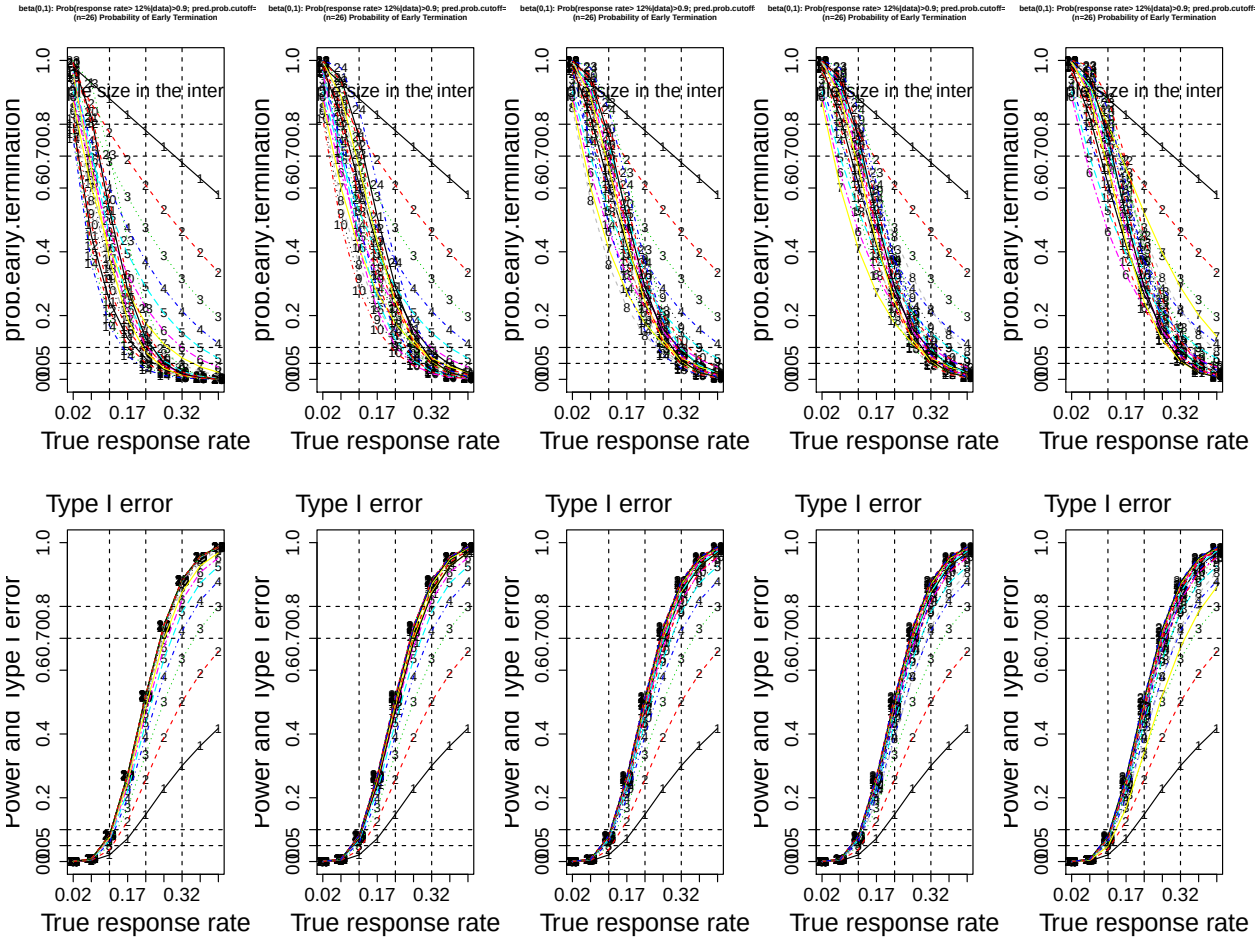

beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=30
η = 0.91
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=30
η = 0.91
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=30
η = 0.91
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

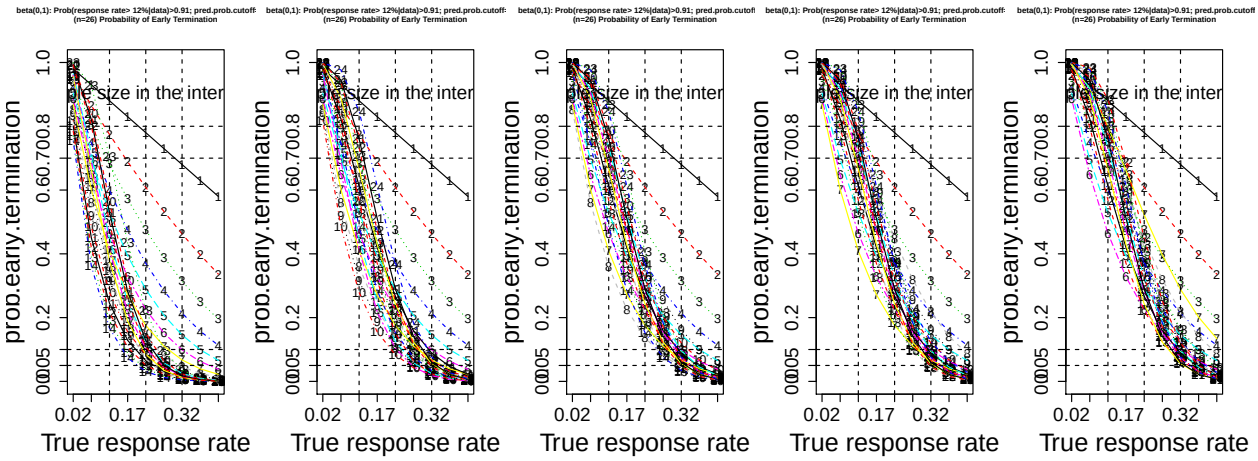

beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=30
η = 0.92
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=30
η = 0.92
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=30
η = 0.92
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

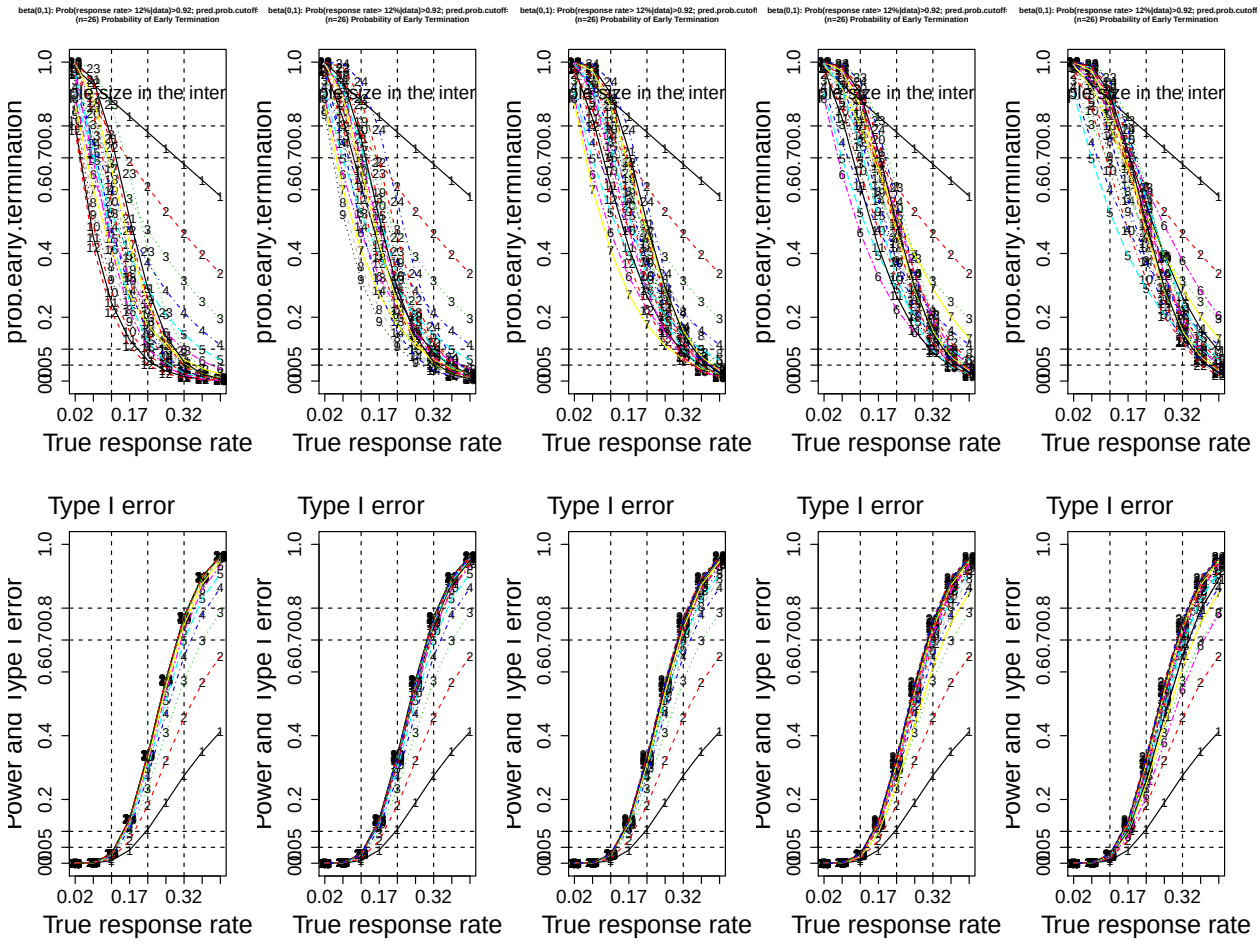

beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=30
η = 0.93
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=30
η = 0.93
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=30
η = 0.93
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

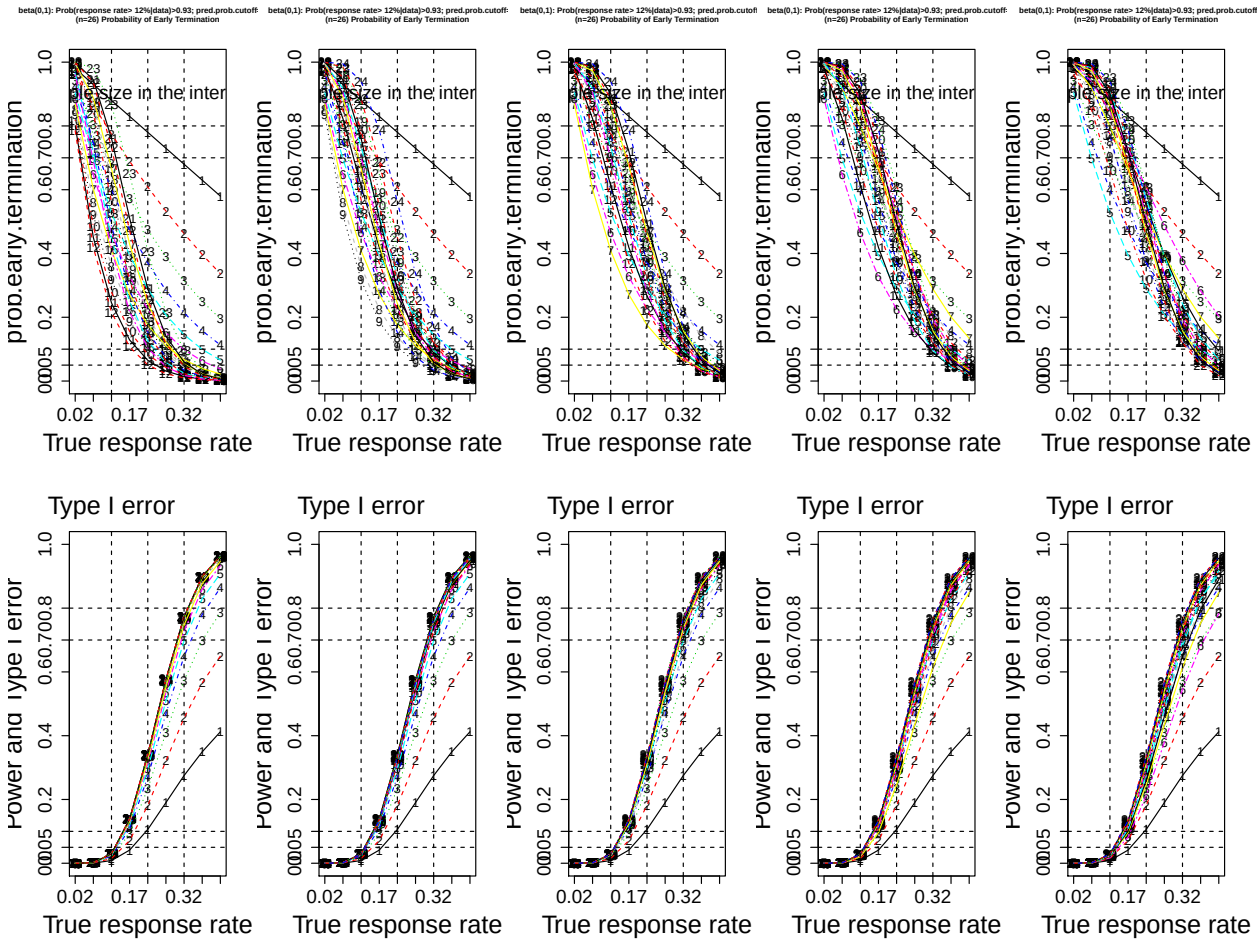

beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=30
η = 0.94
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=30
η = 0.94
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,0): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=30
η = 0.94
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

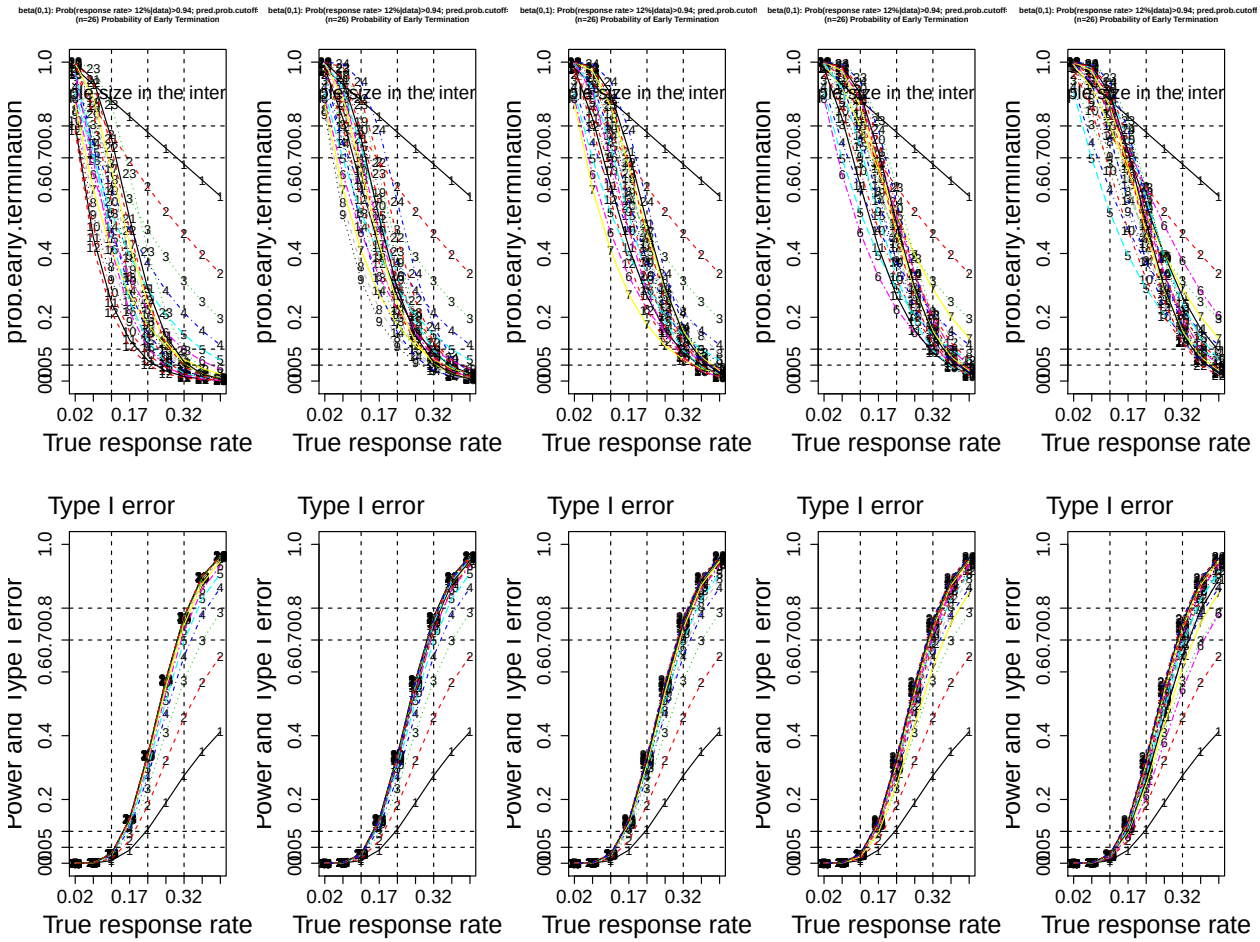
Prior Distribution: beta(0,1)

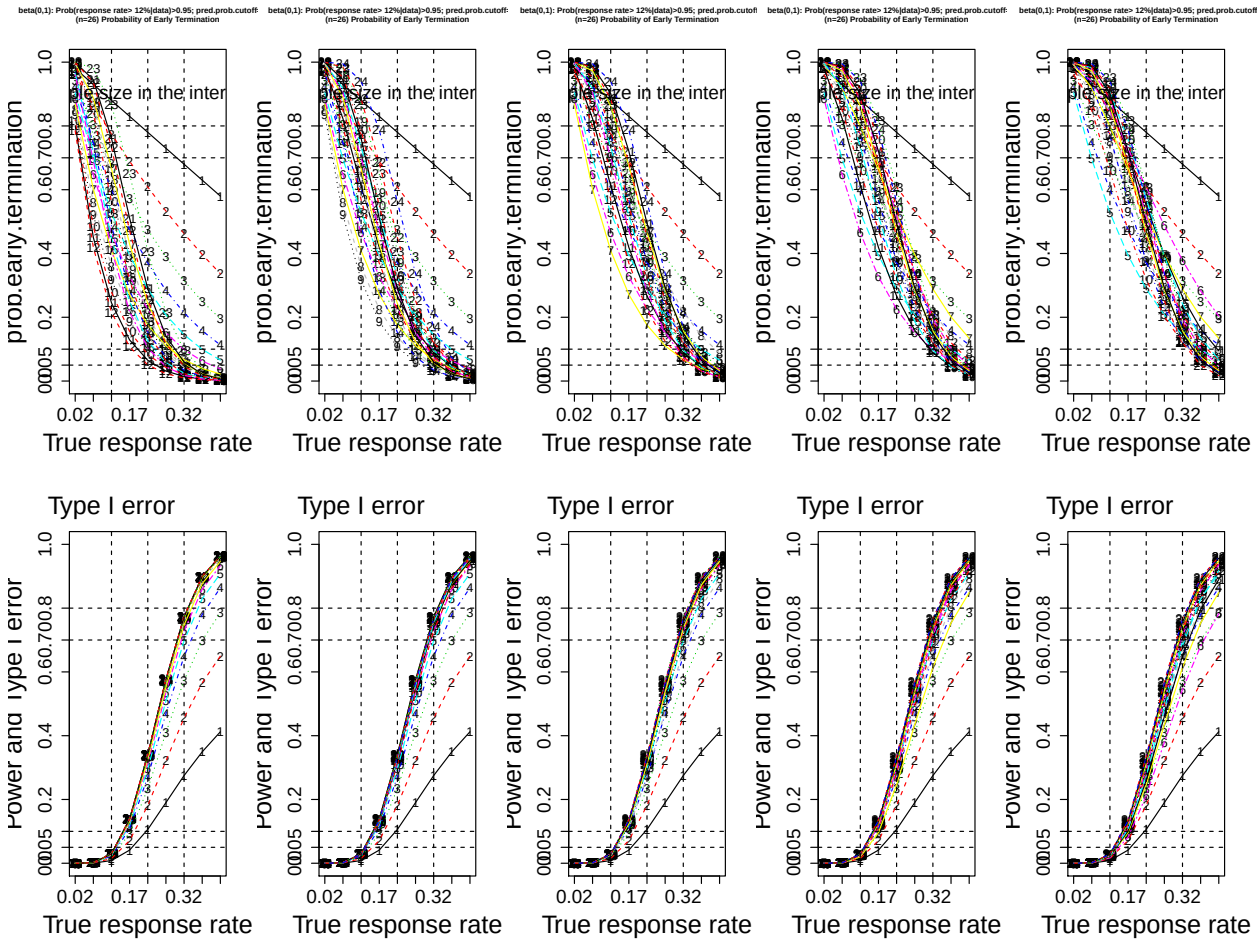


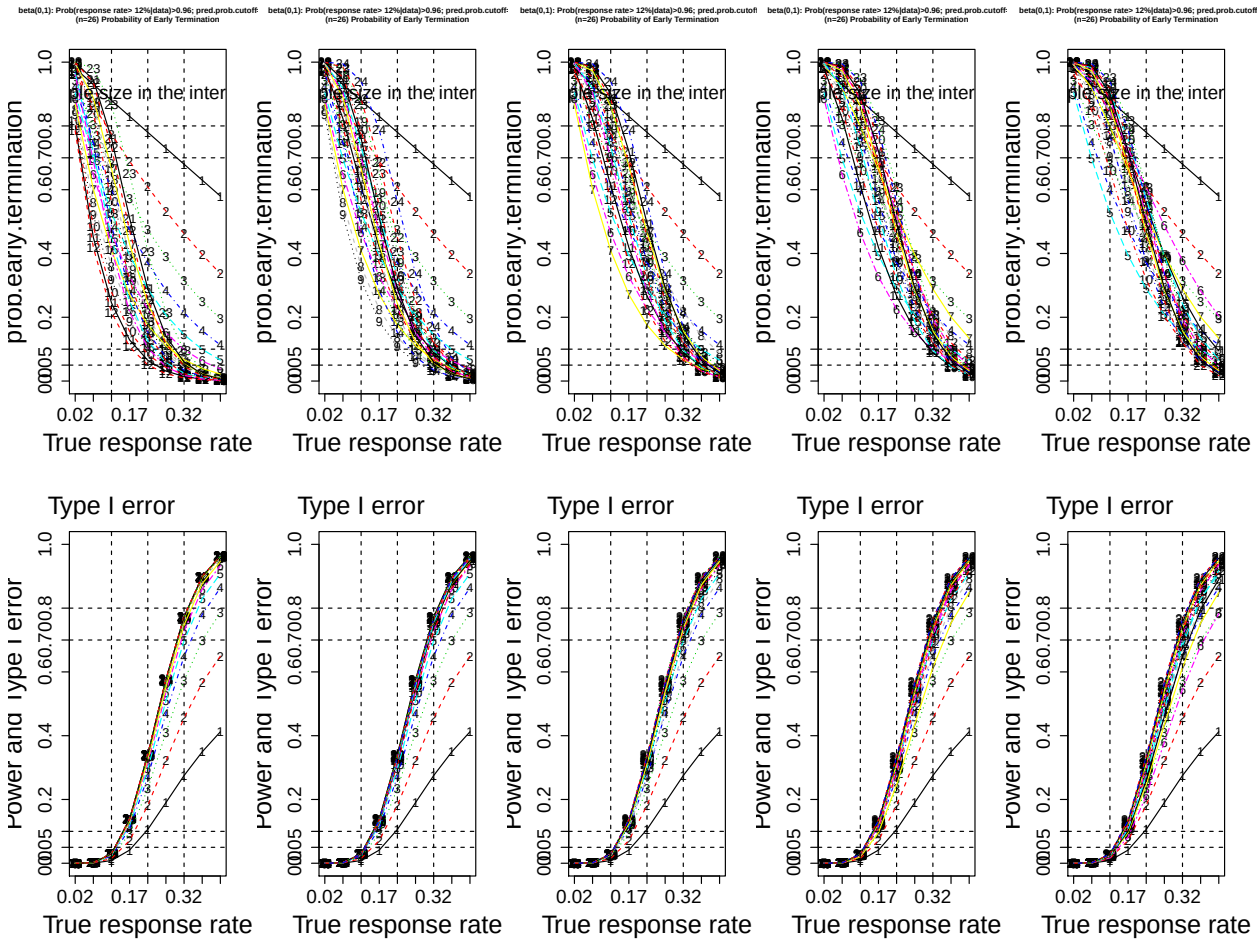


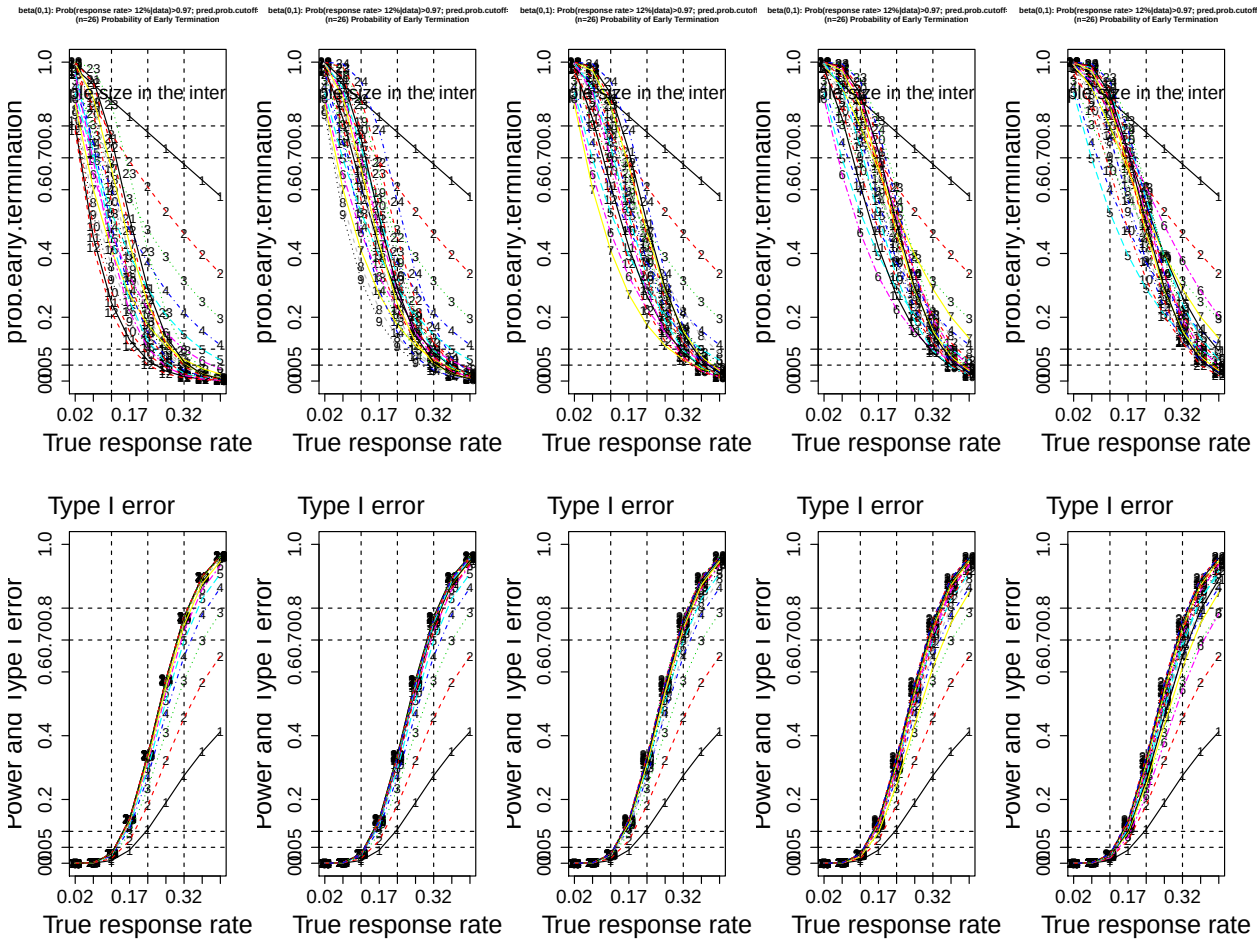

beta(0,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

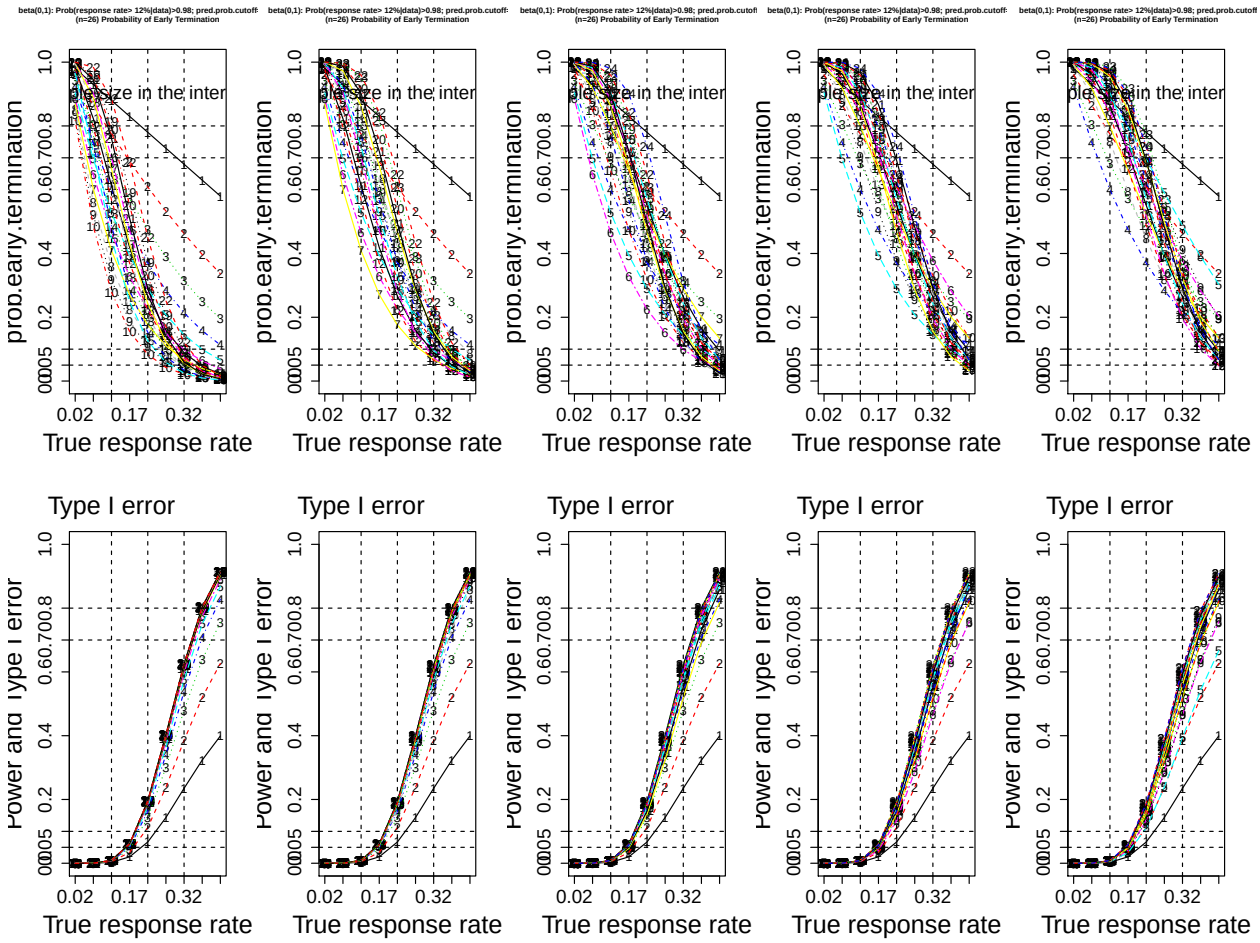

beta(0,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

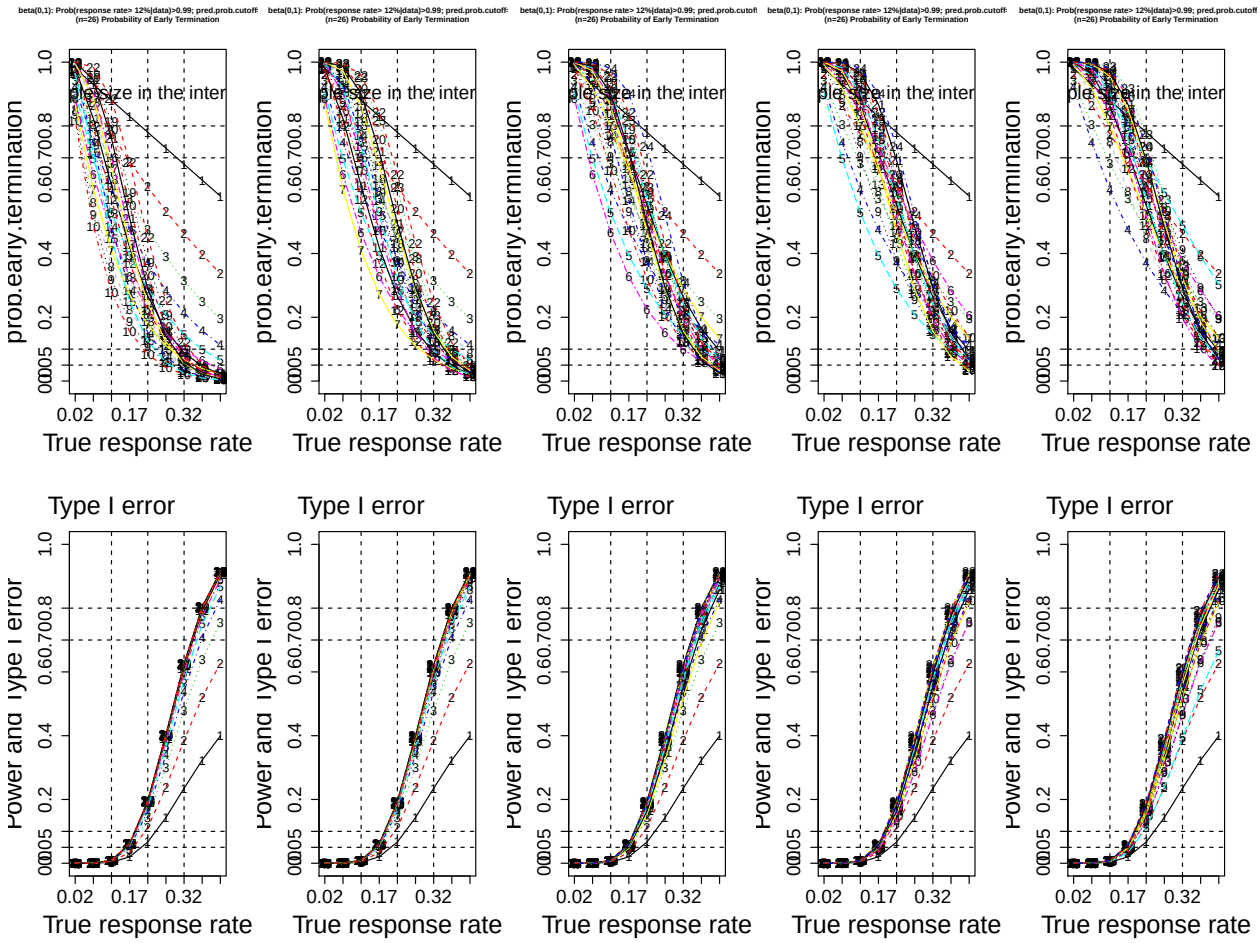

beta(0,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

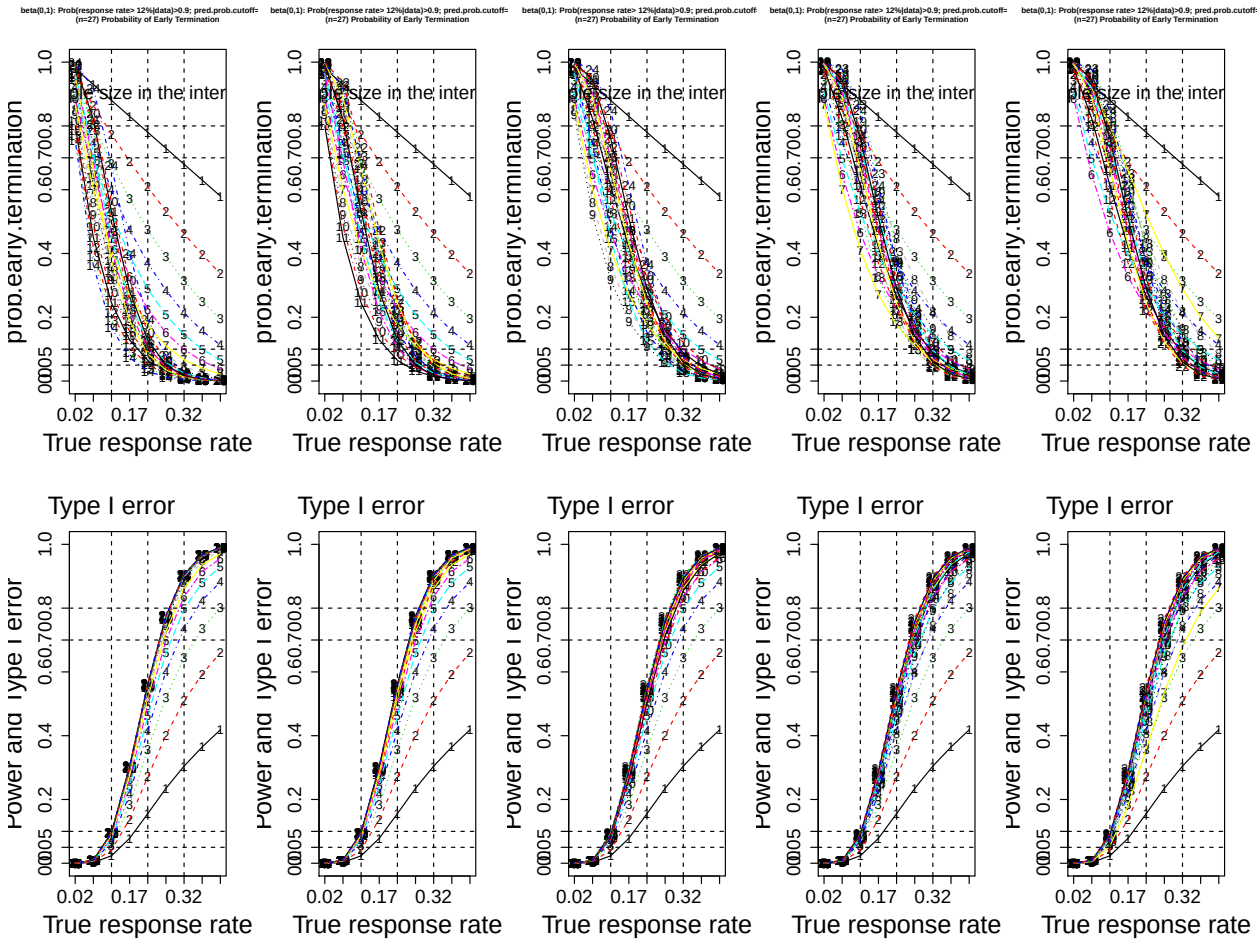

beta(0,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

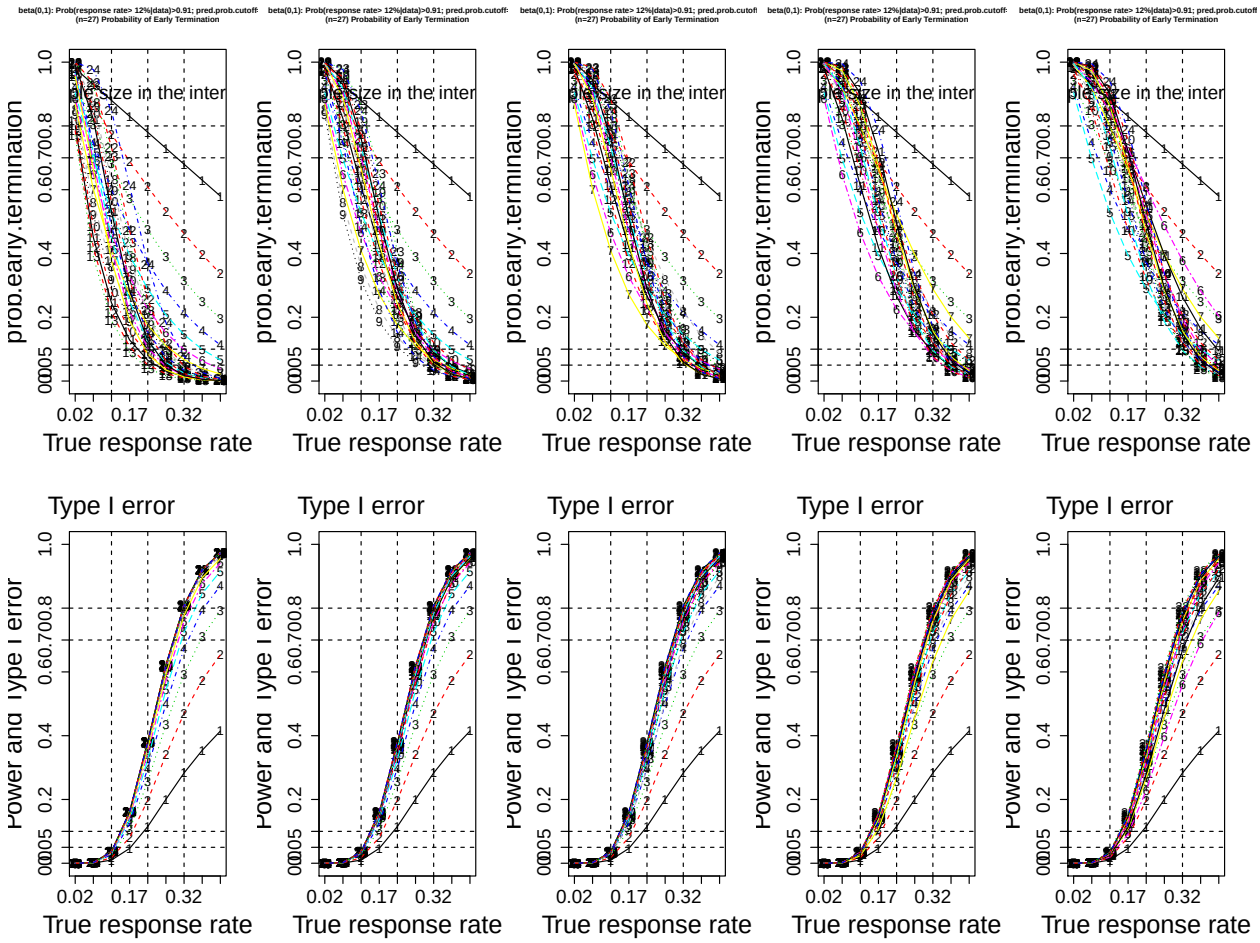

beta(0,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

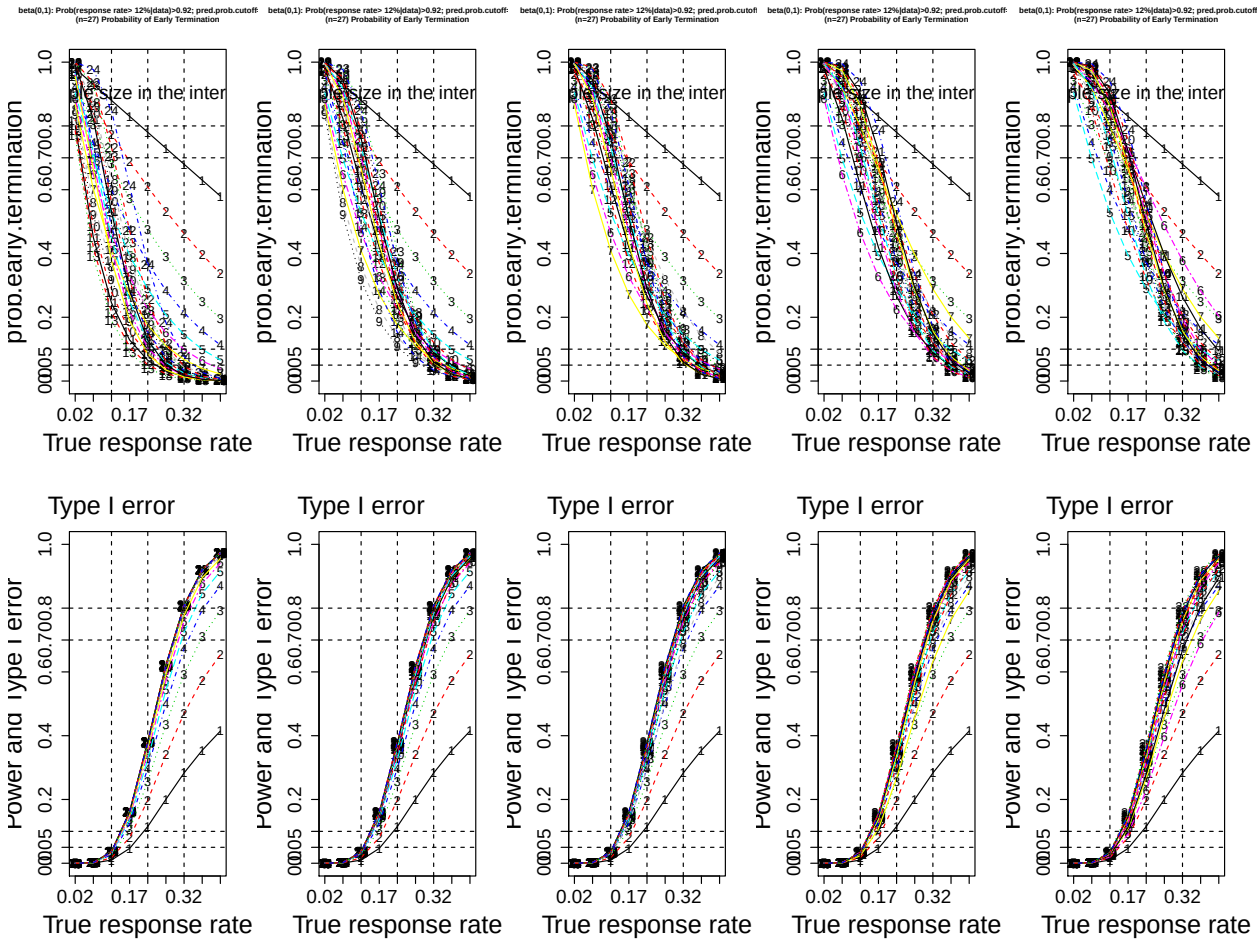

beta(0,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

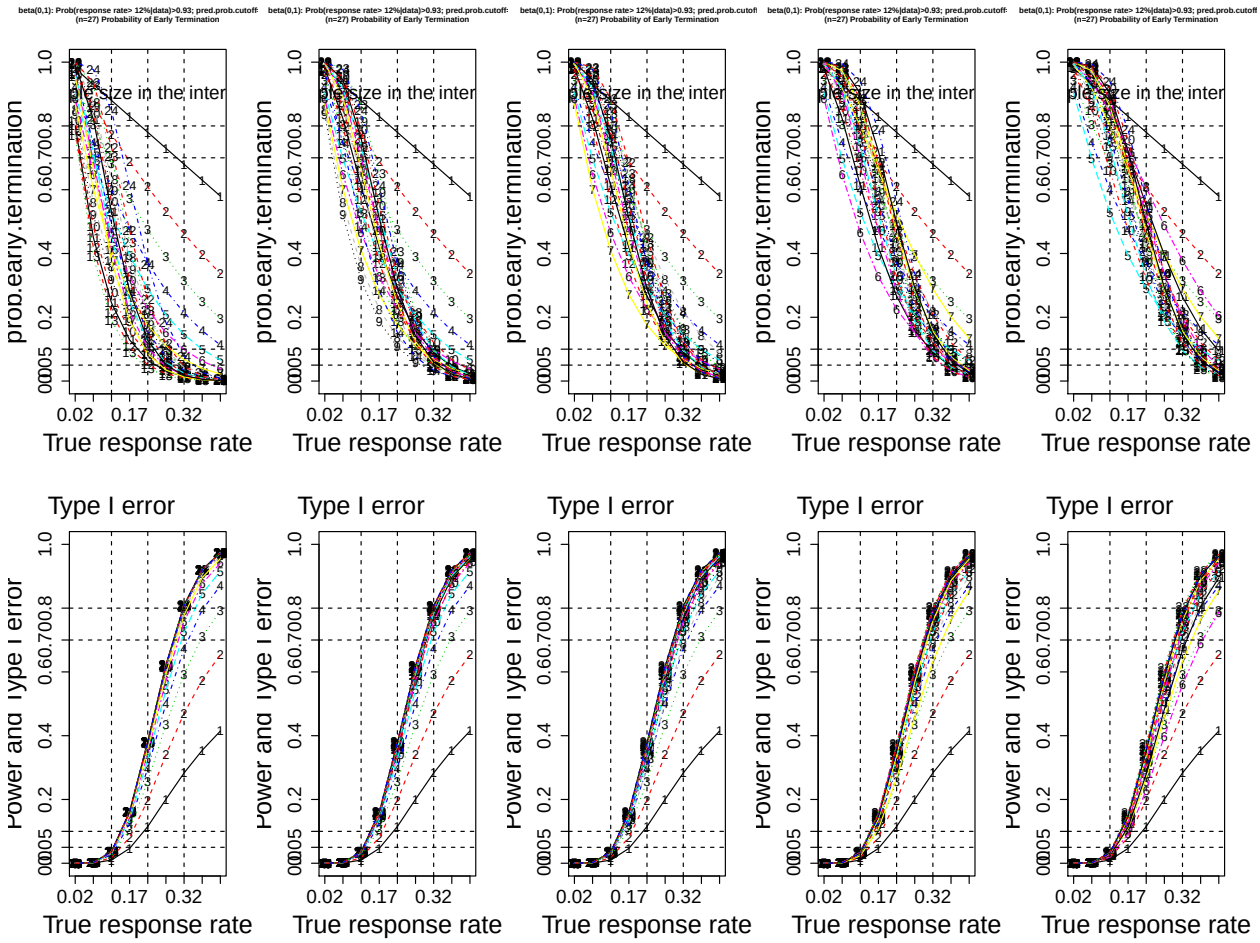

beta(0,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

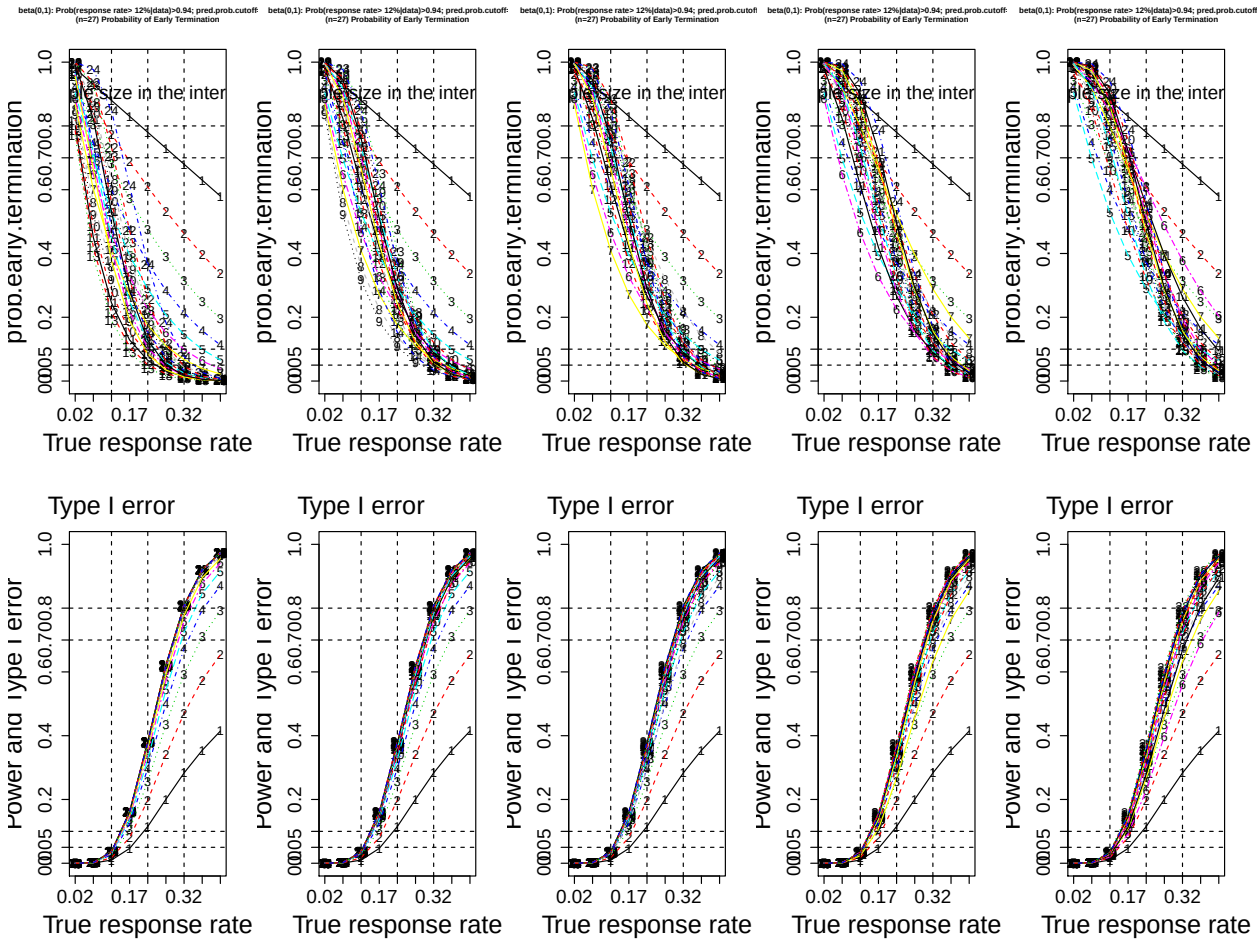

beta(0,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

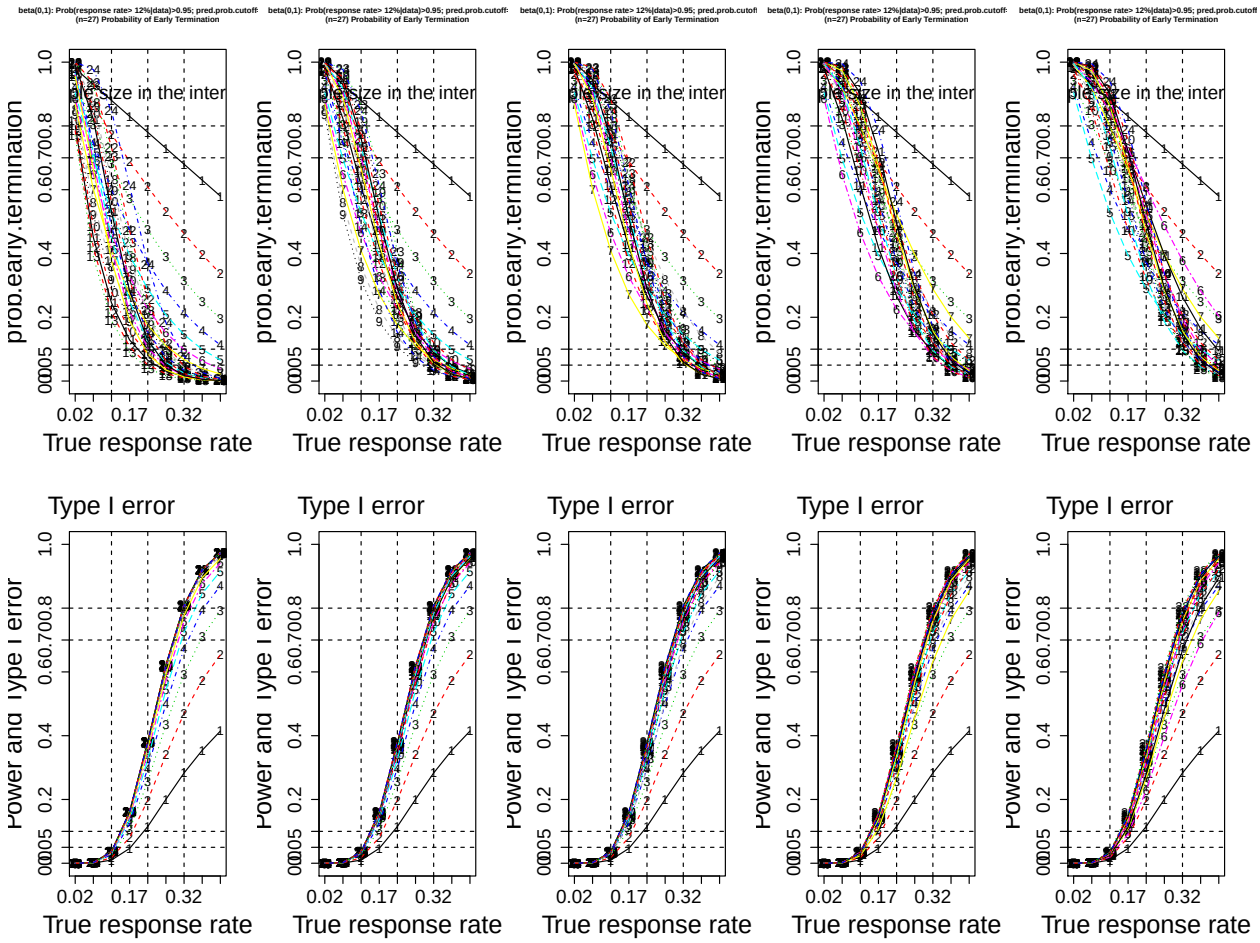

beta(0,1): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

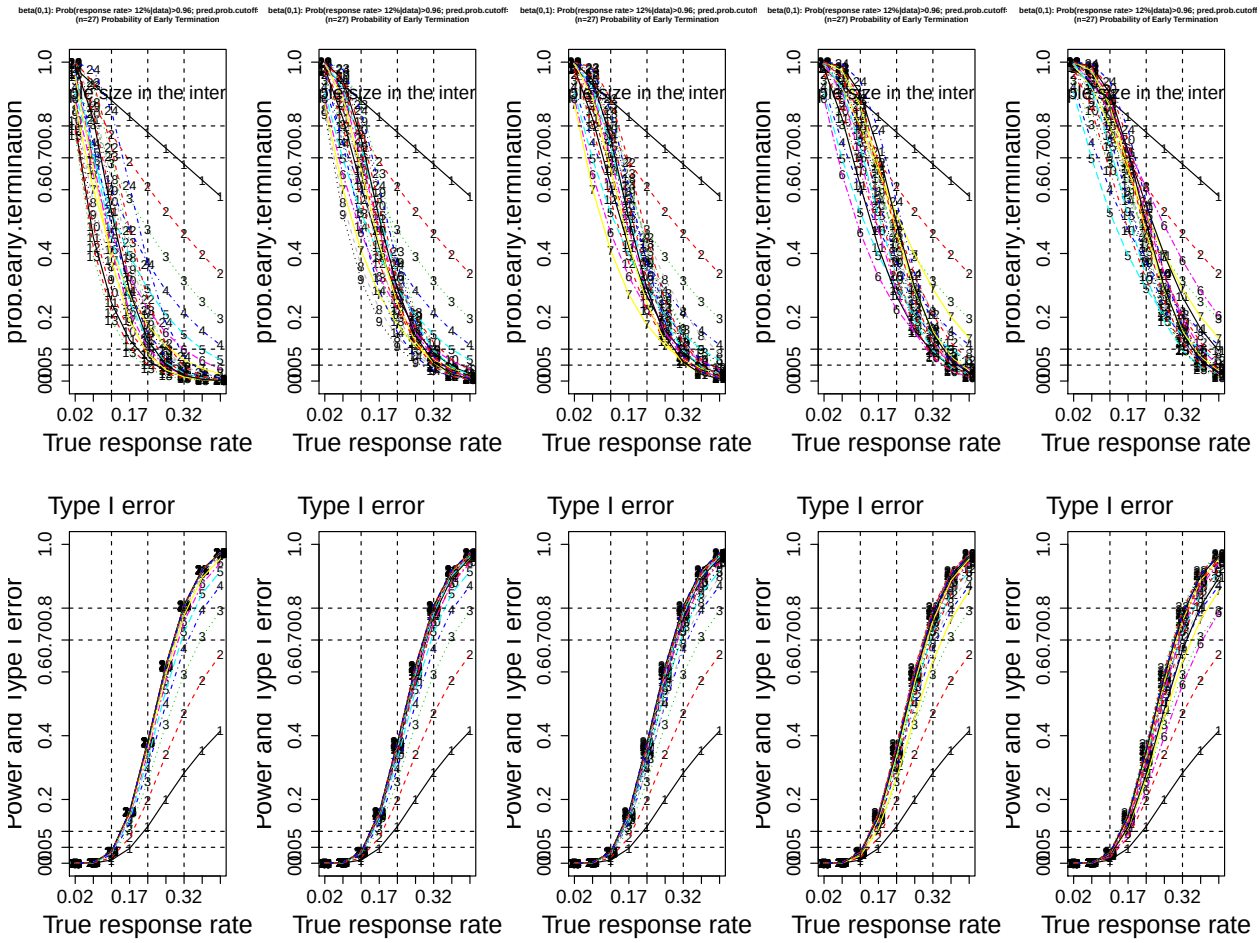

beta(0,1): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

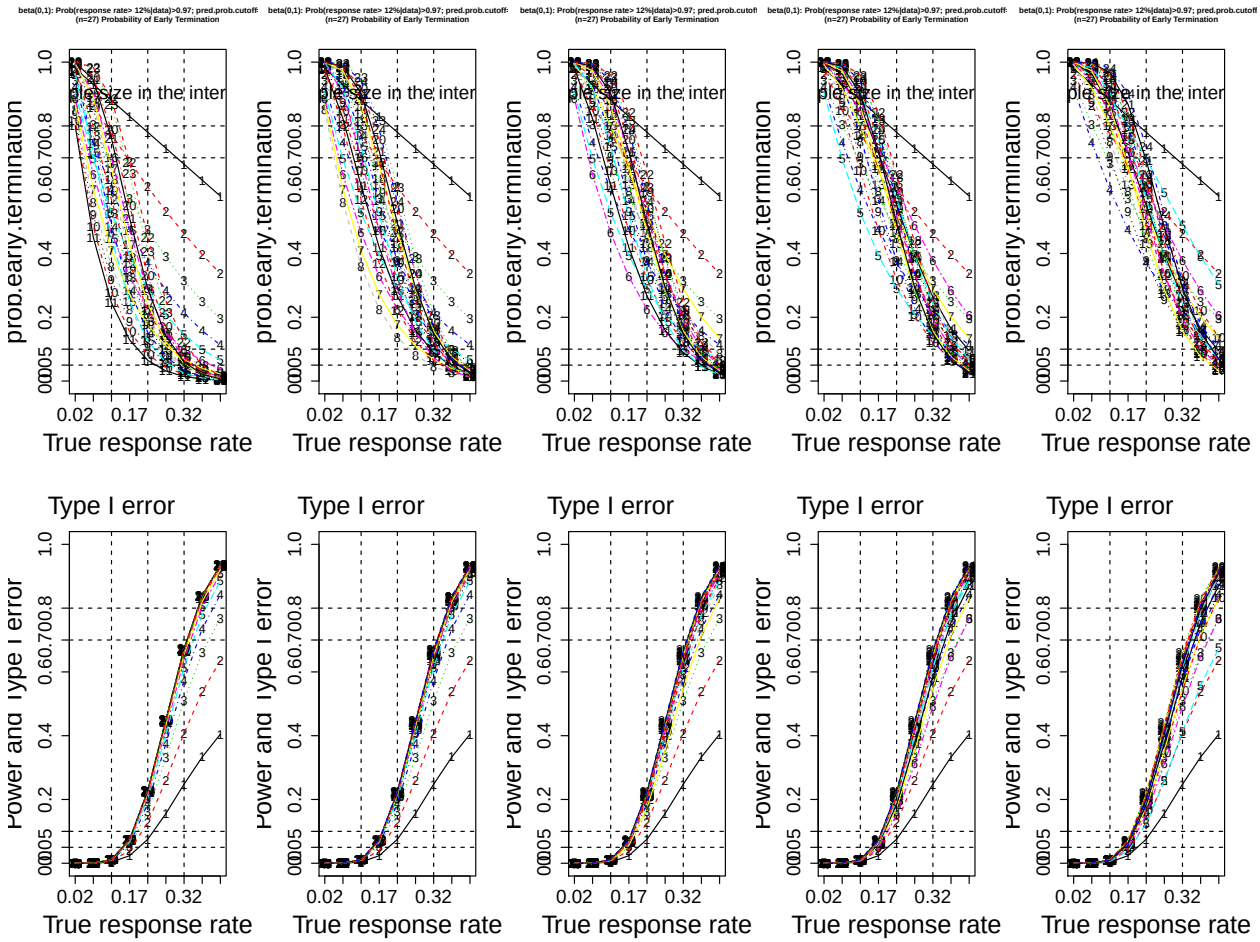

beta(0,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

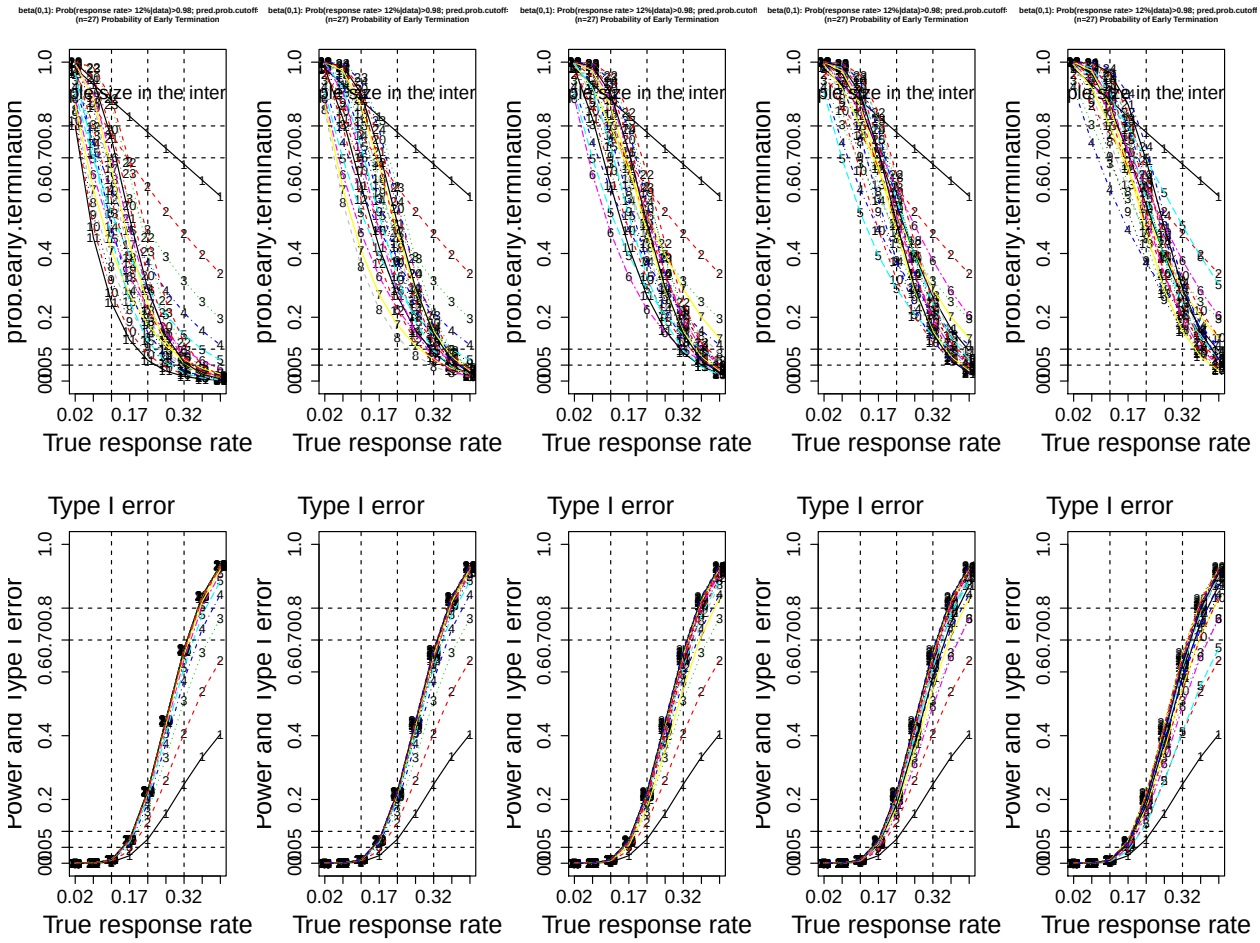

beta(0,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

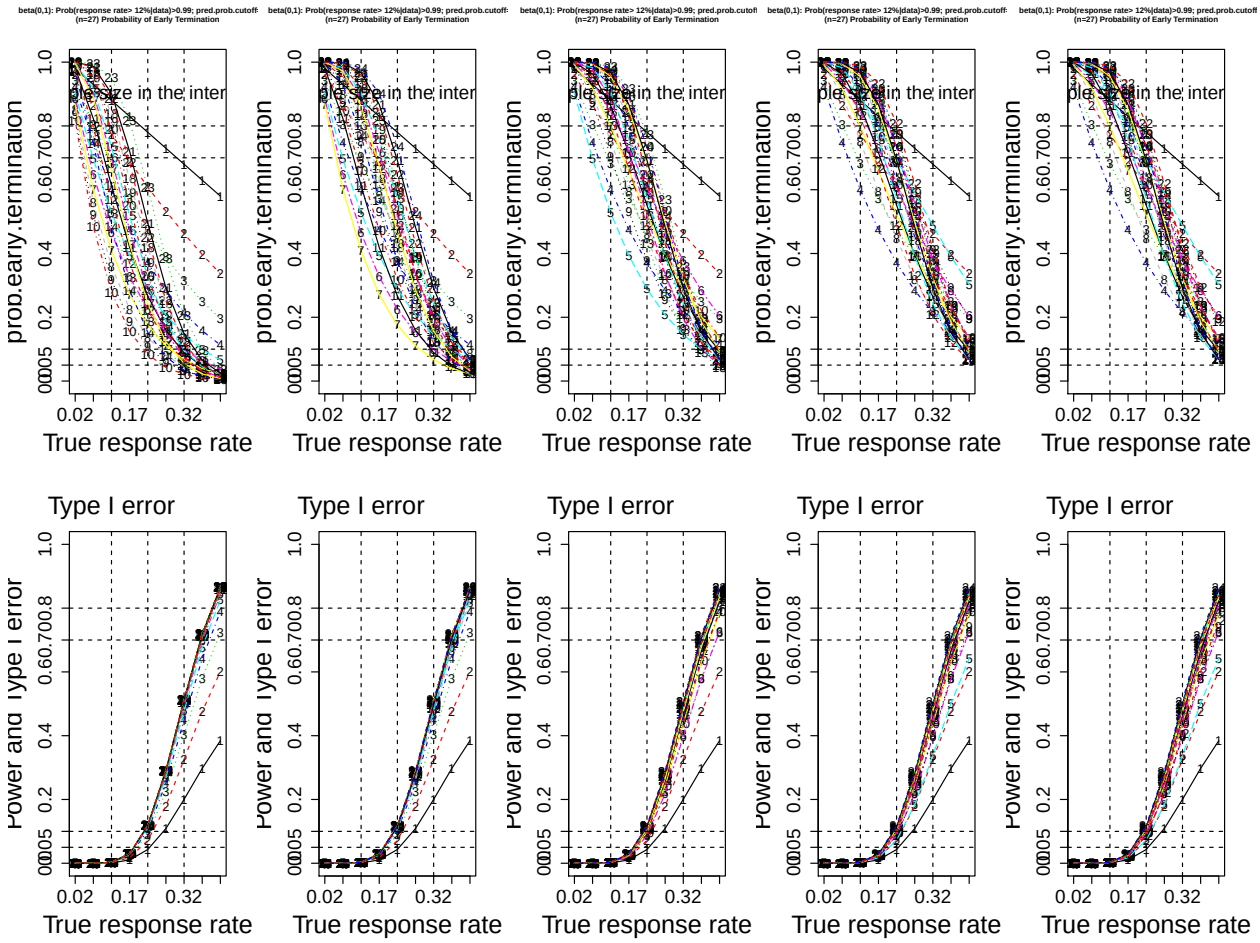

beta(0,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

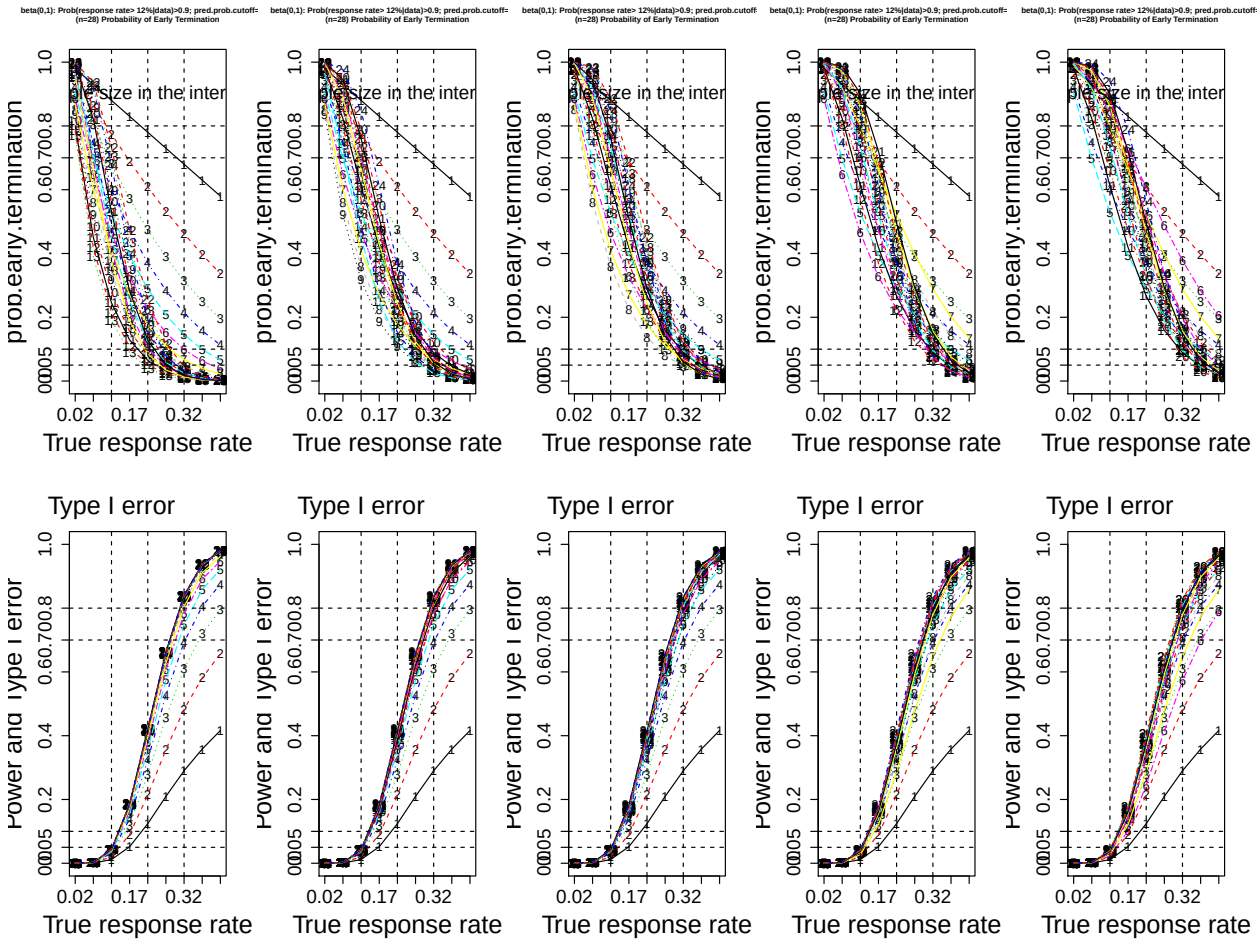

beta(0,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

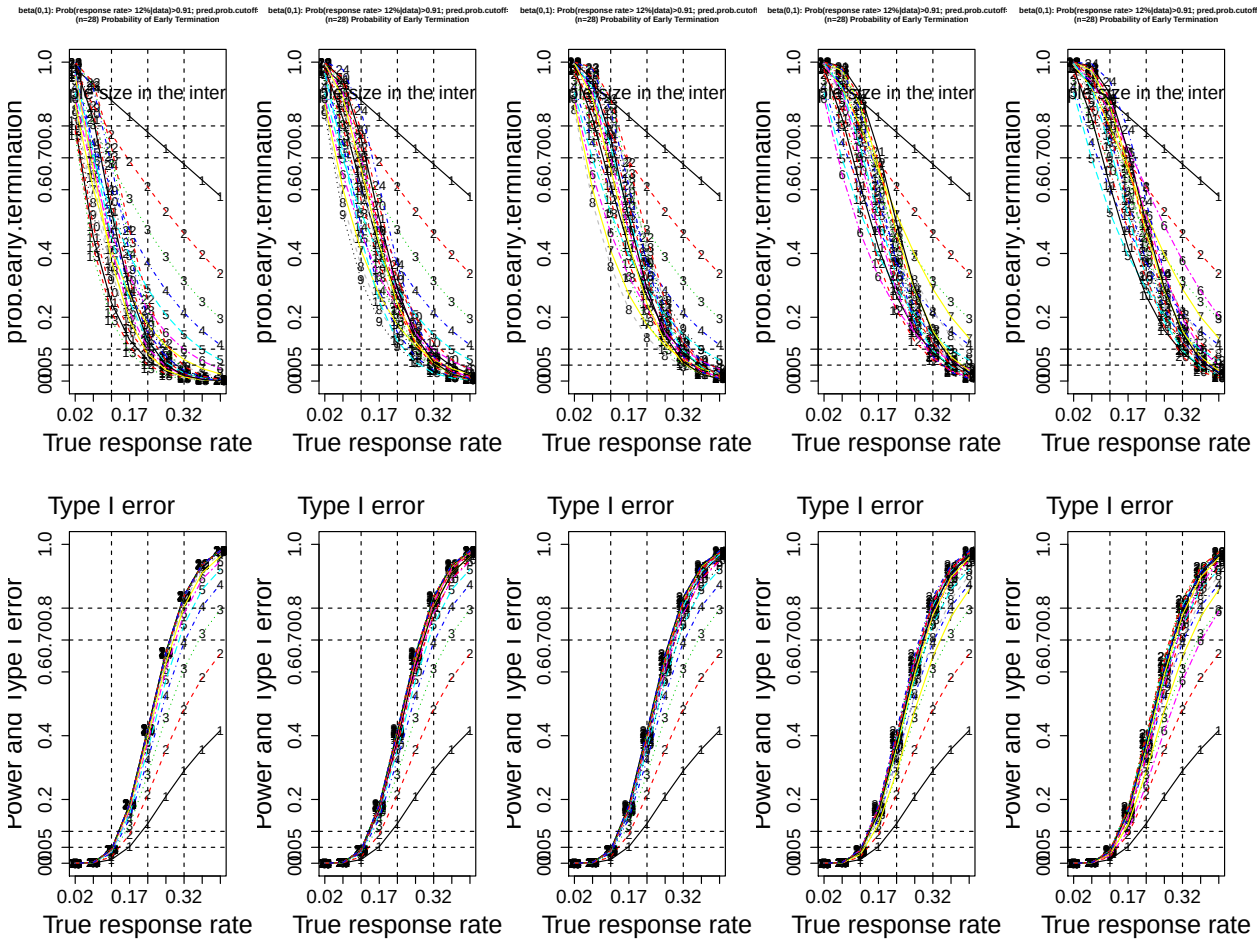

beta(0,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

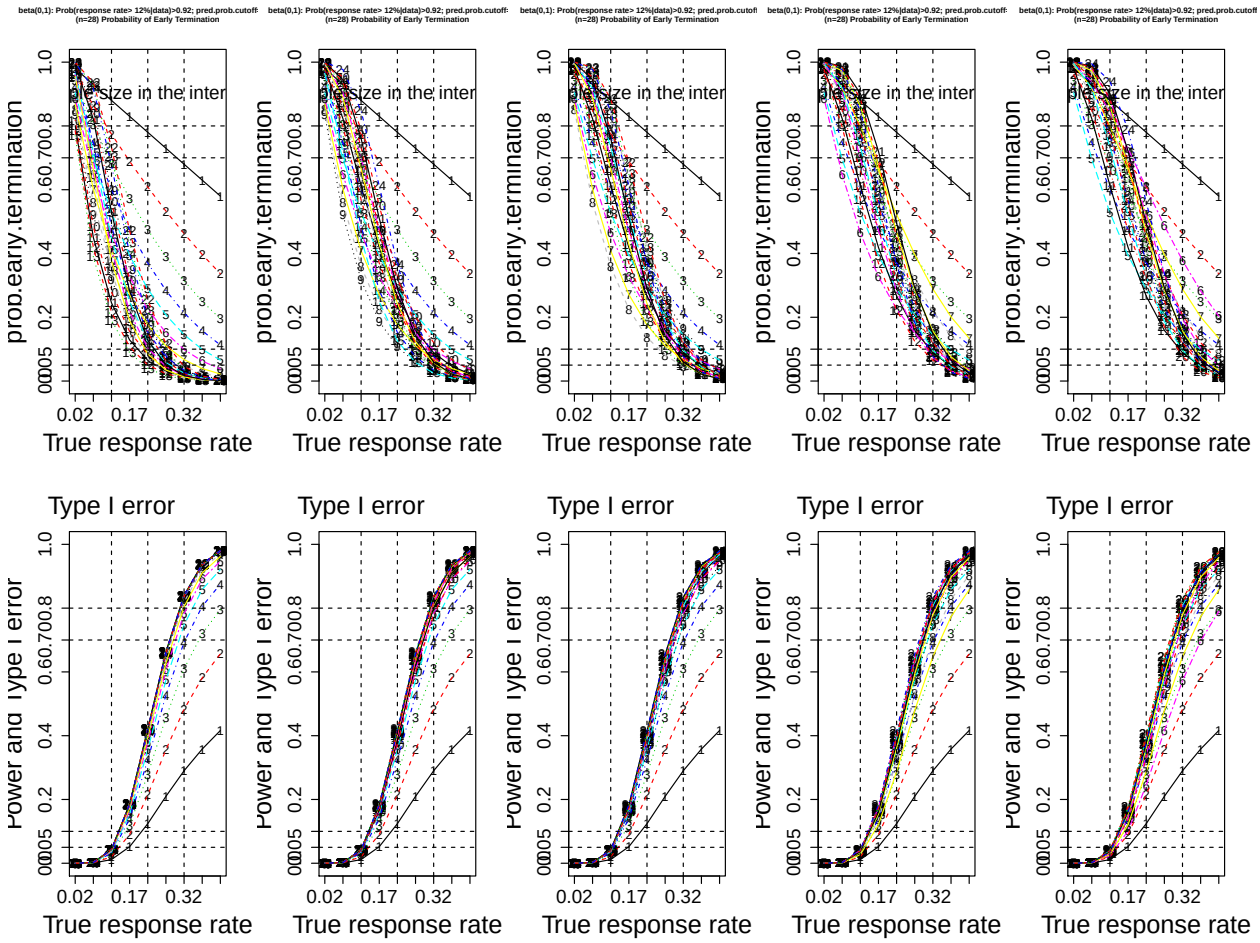

beta(0,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

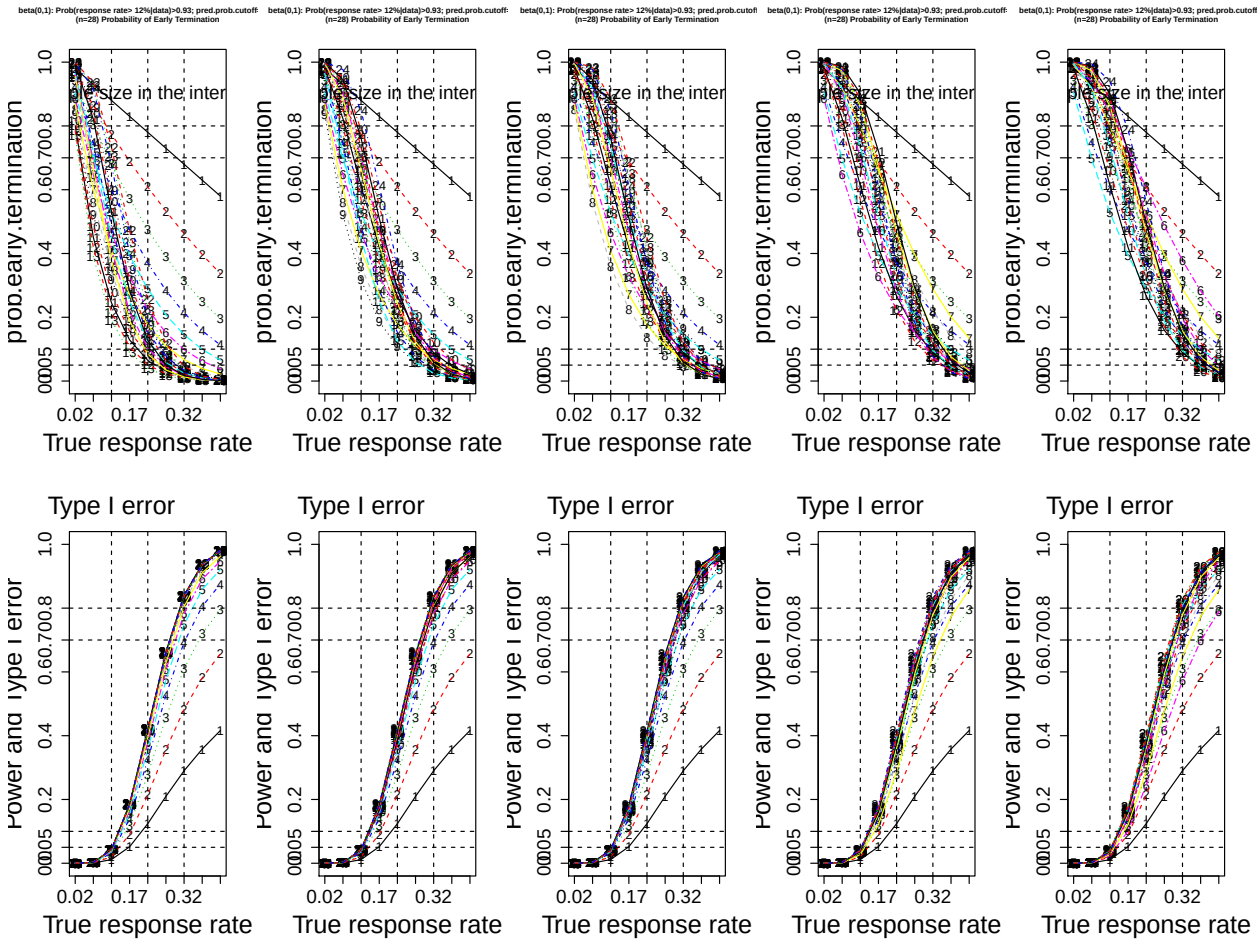

beta(0,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

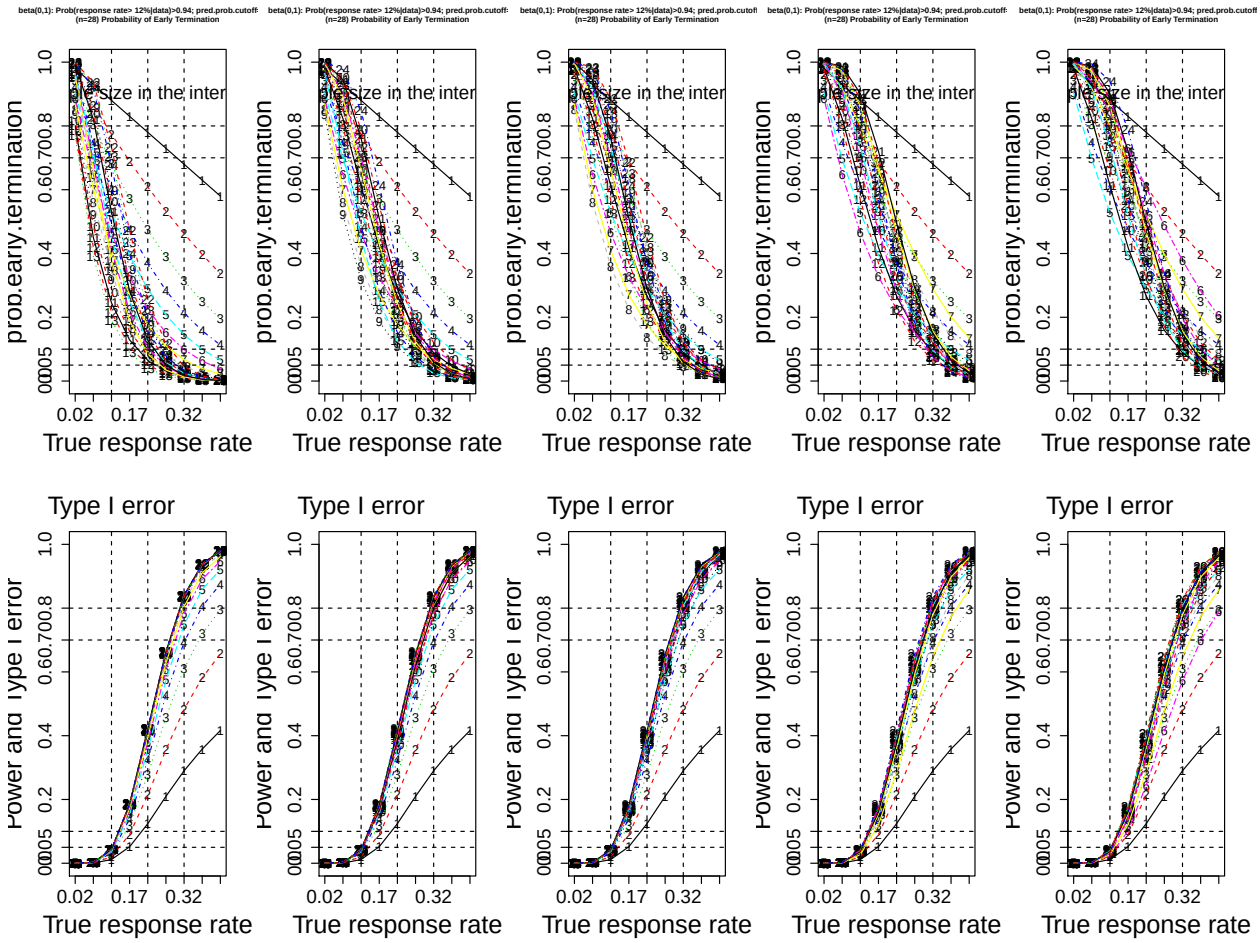

beta(0,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

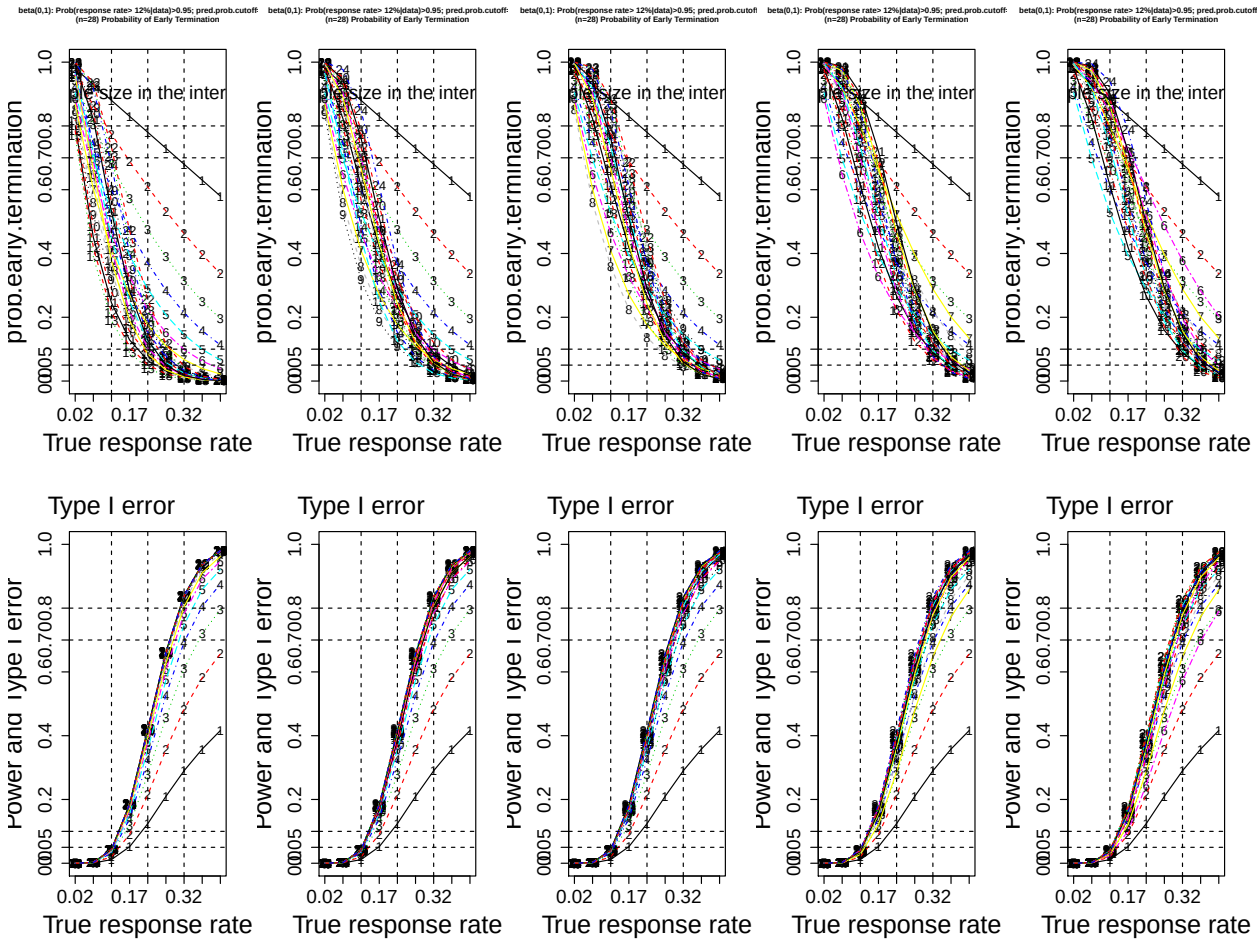

beta(0,1): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

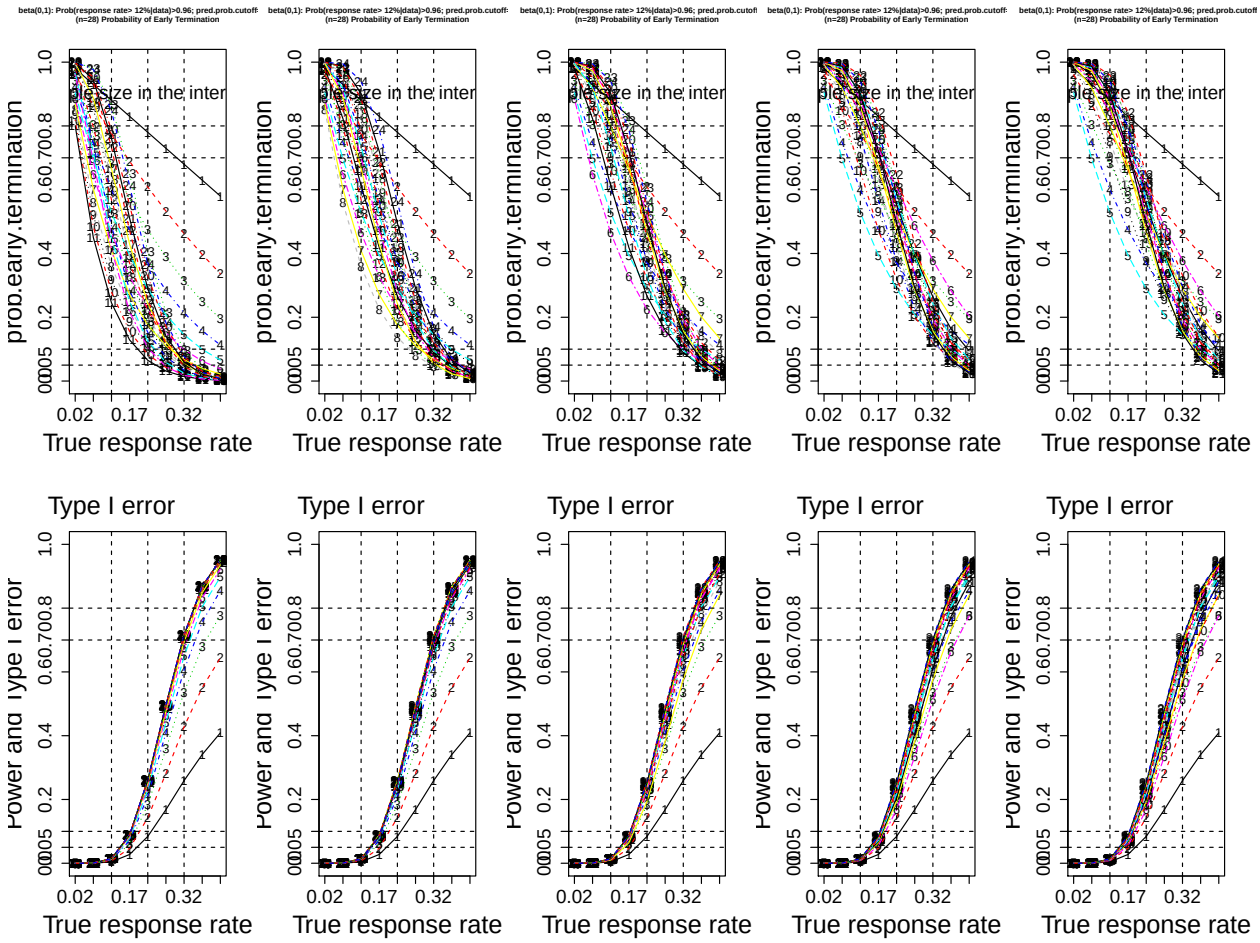

beta(0,1): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

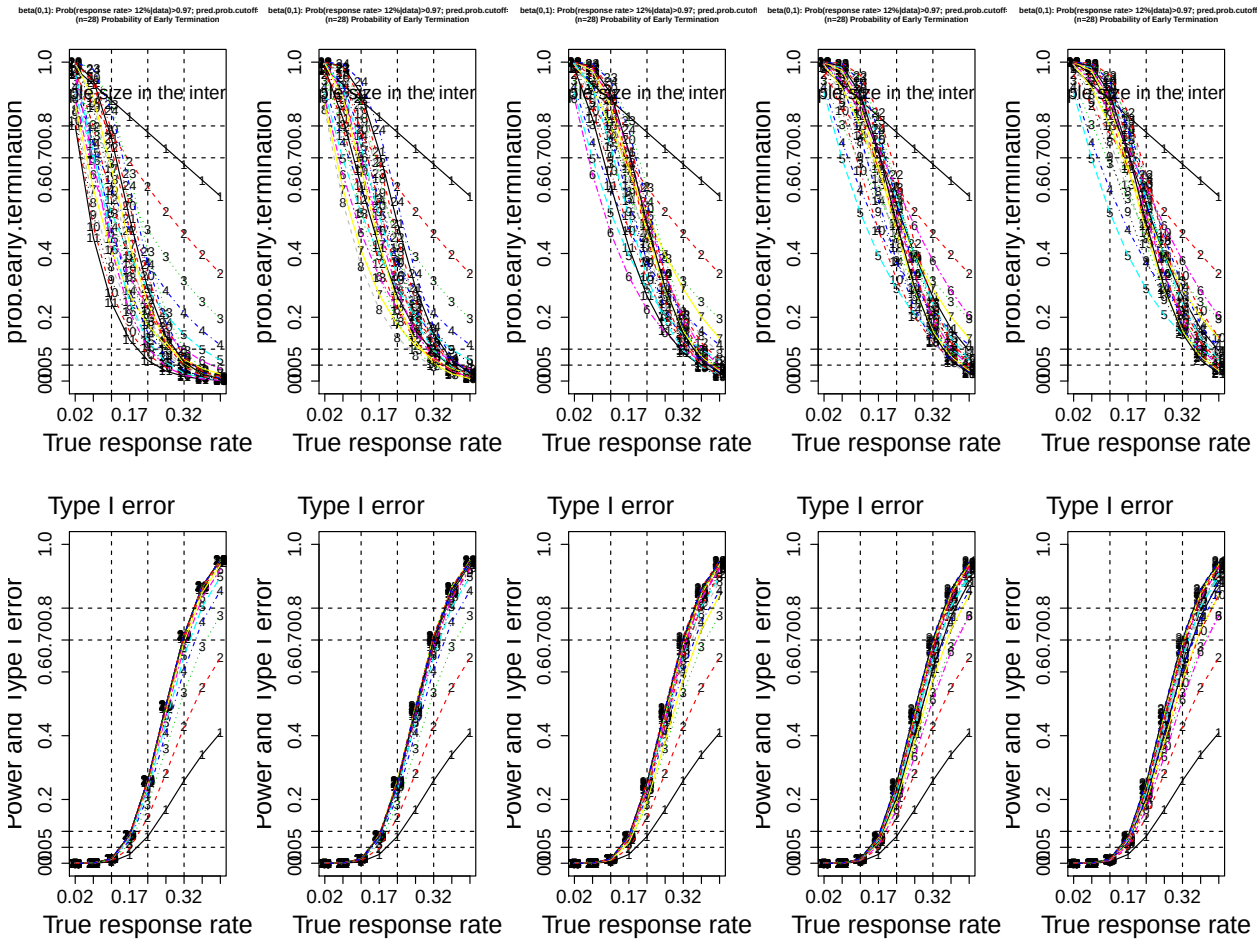

beta(0,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

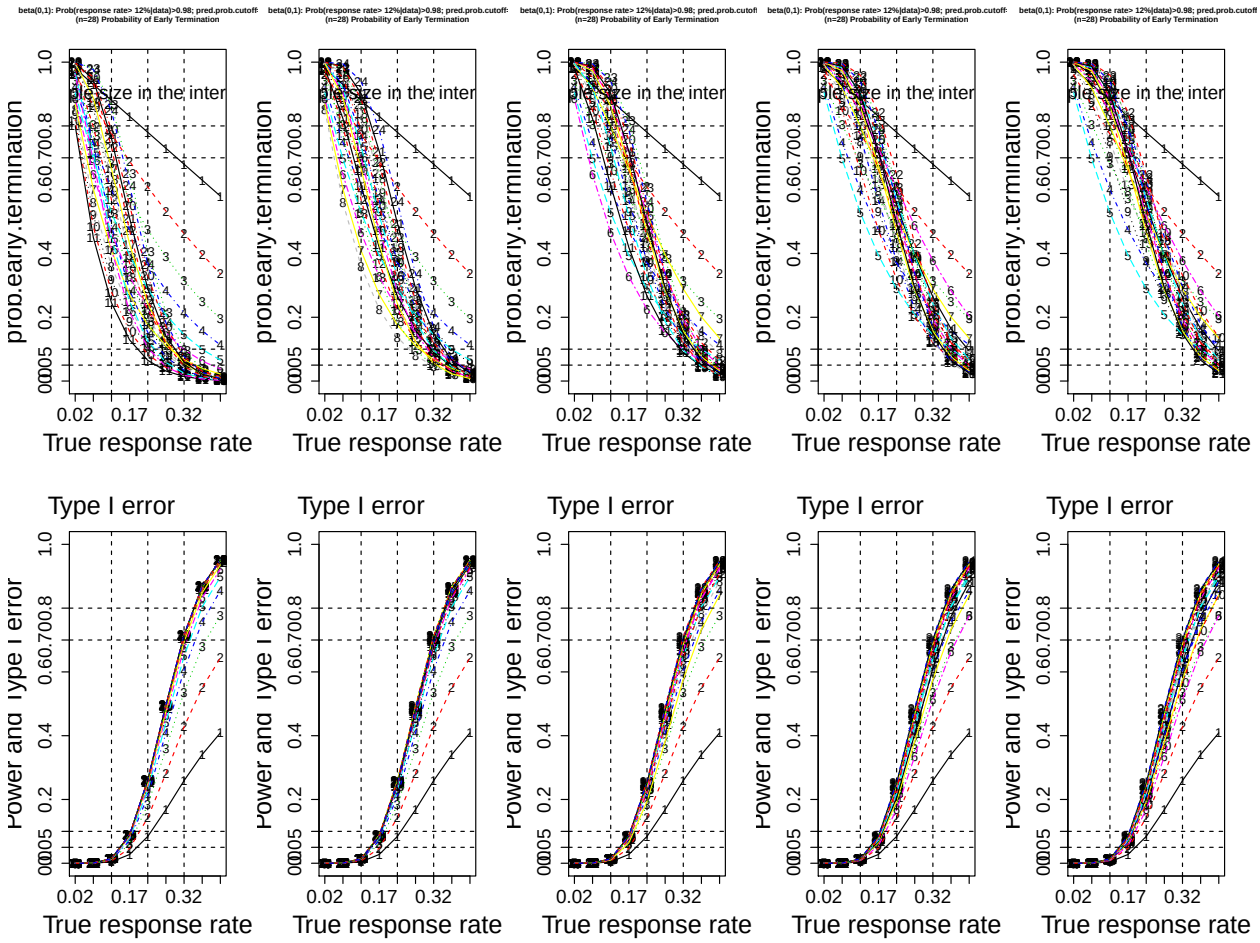

beta(0,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

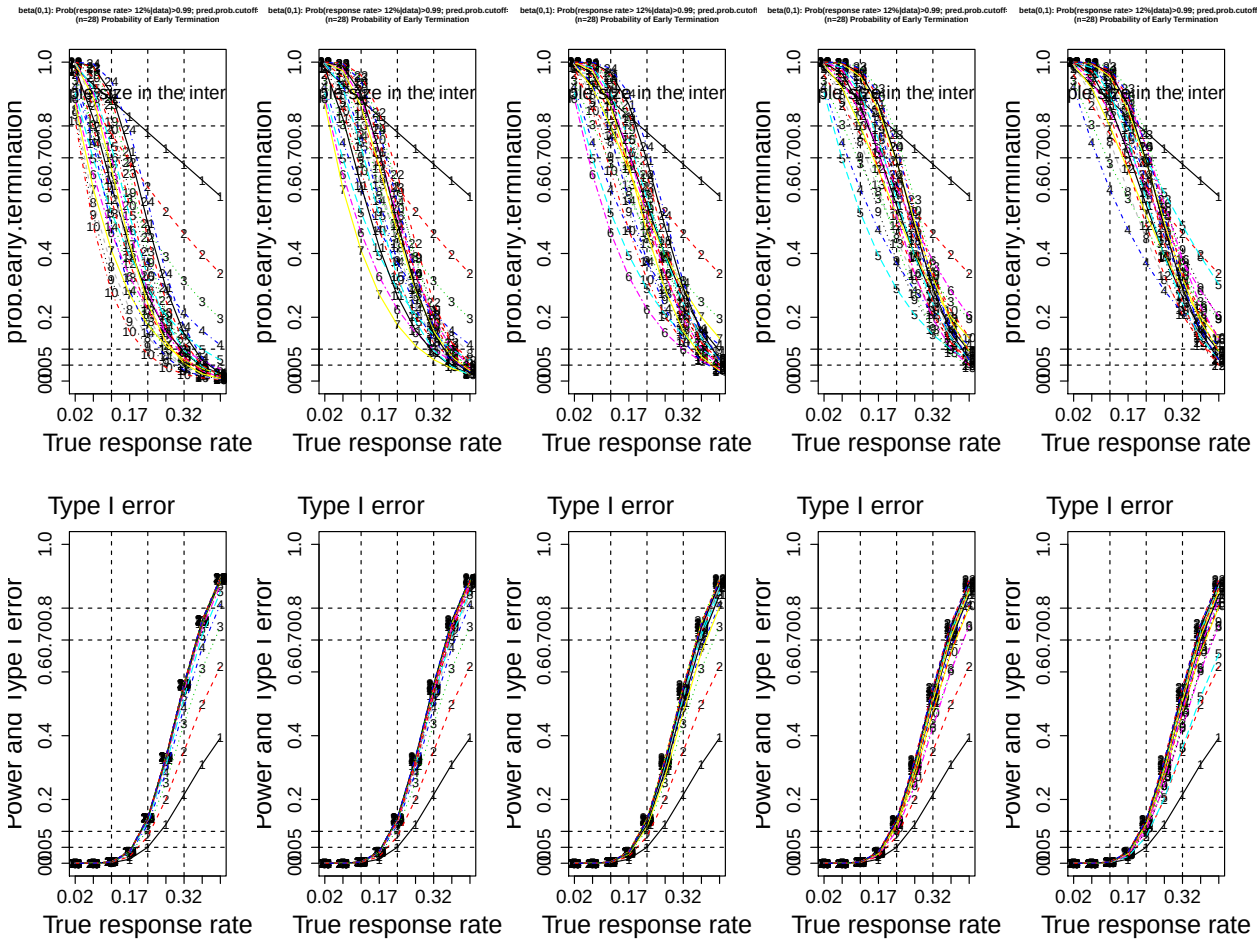

beta(0,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

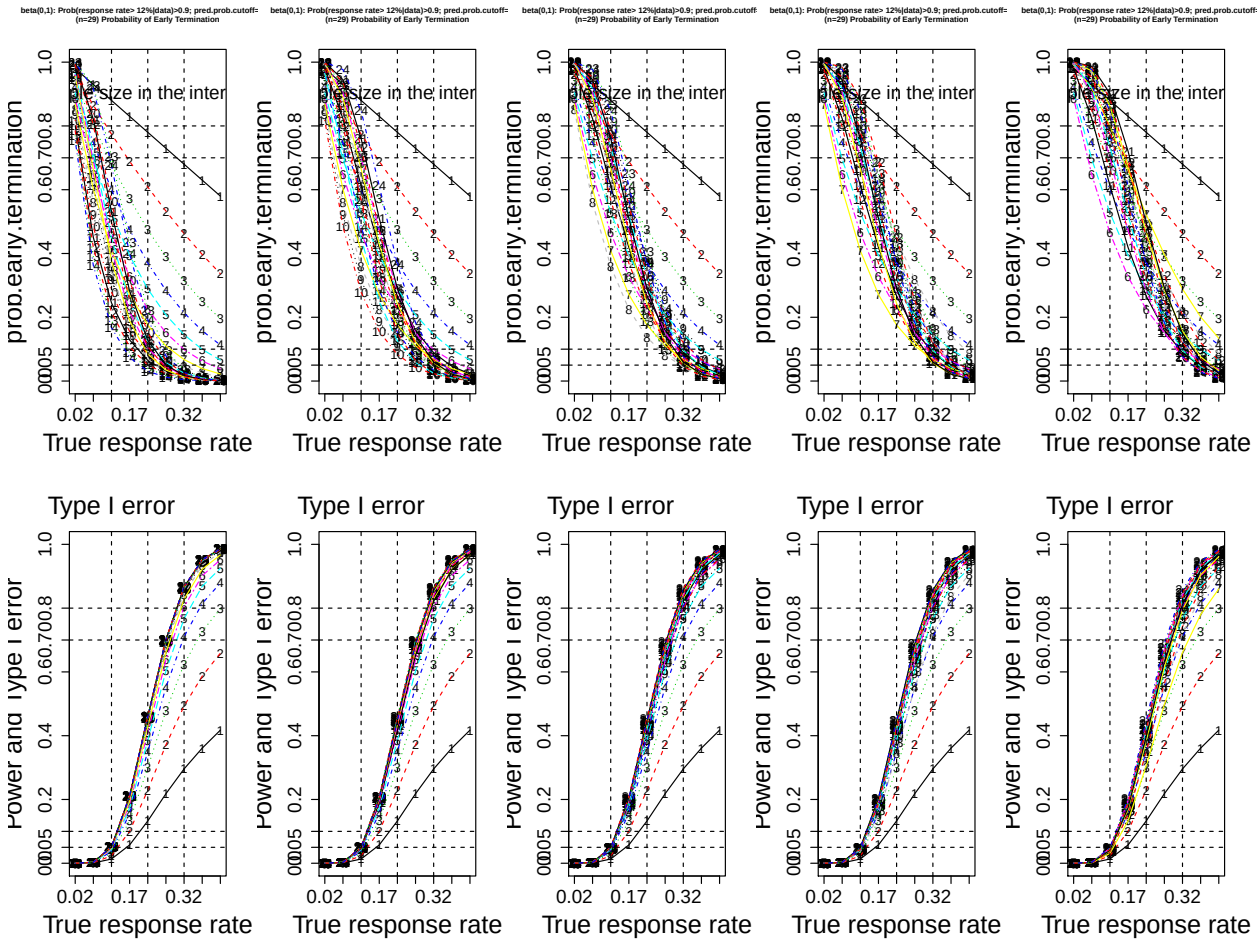

beta(0,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

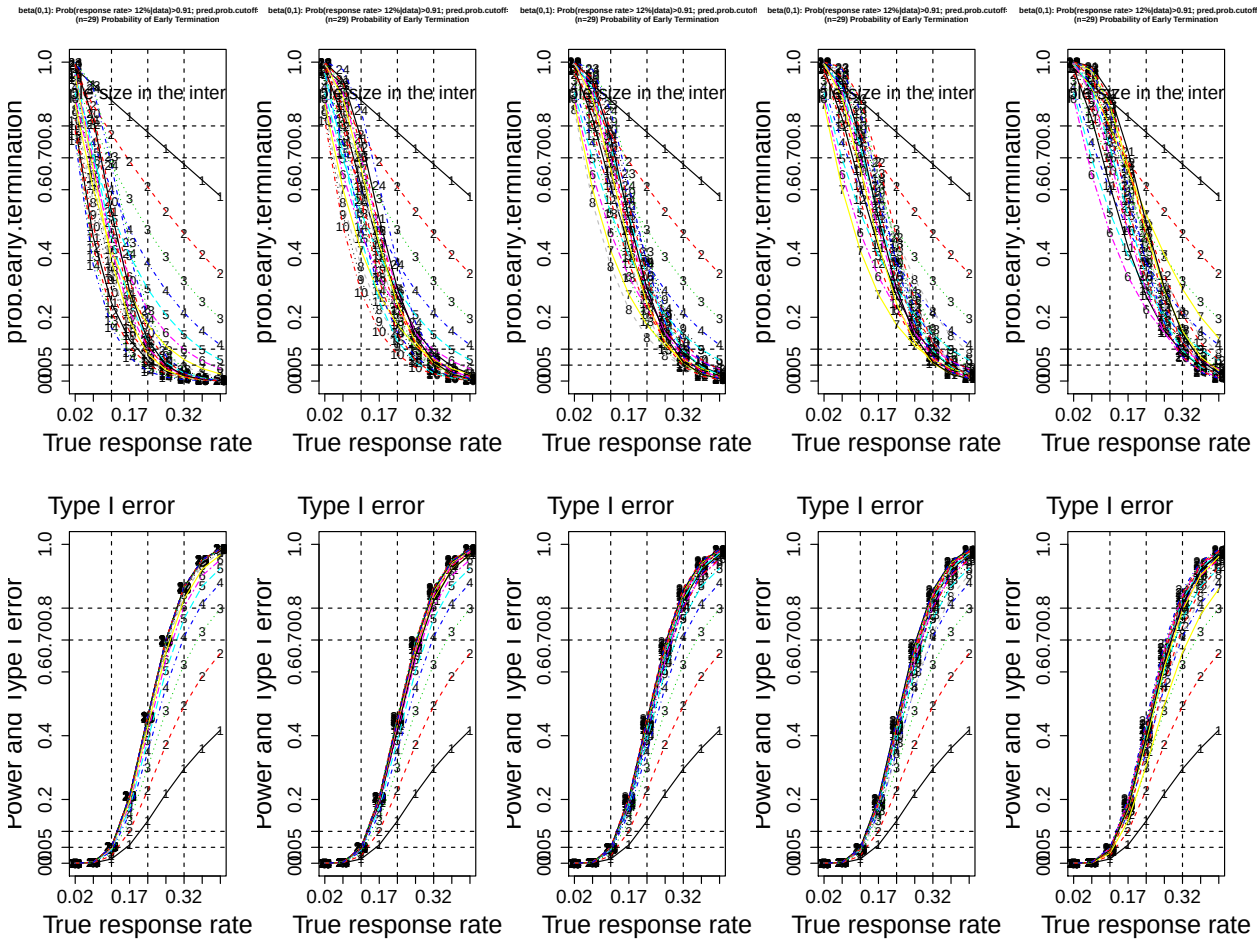

beta(0,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

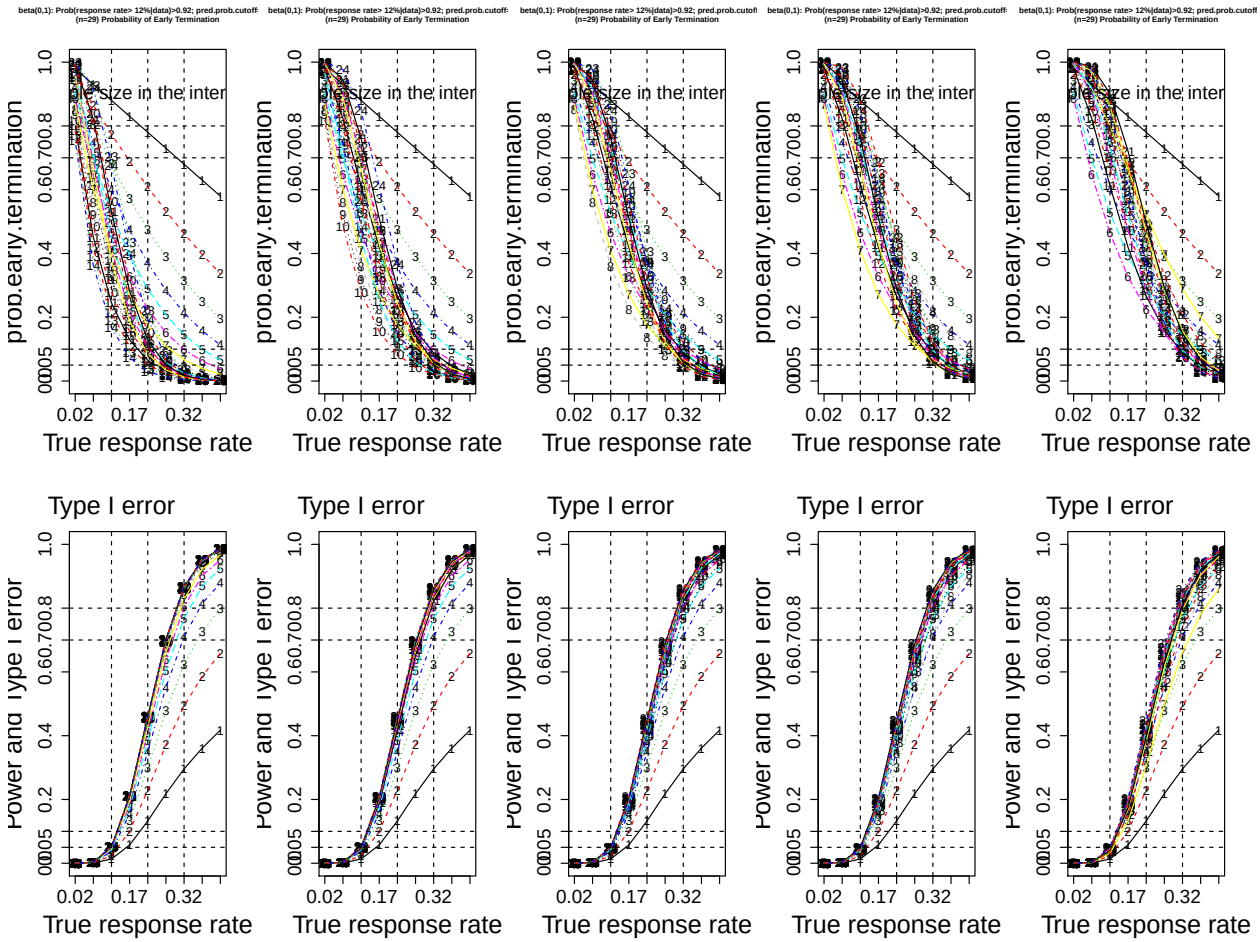

beta(0,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

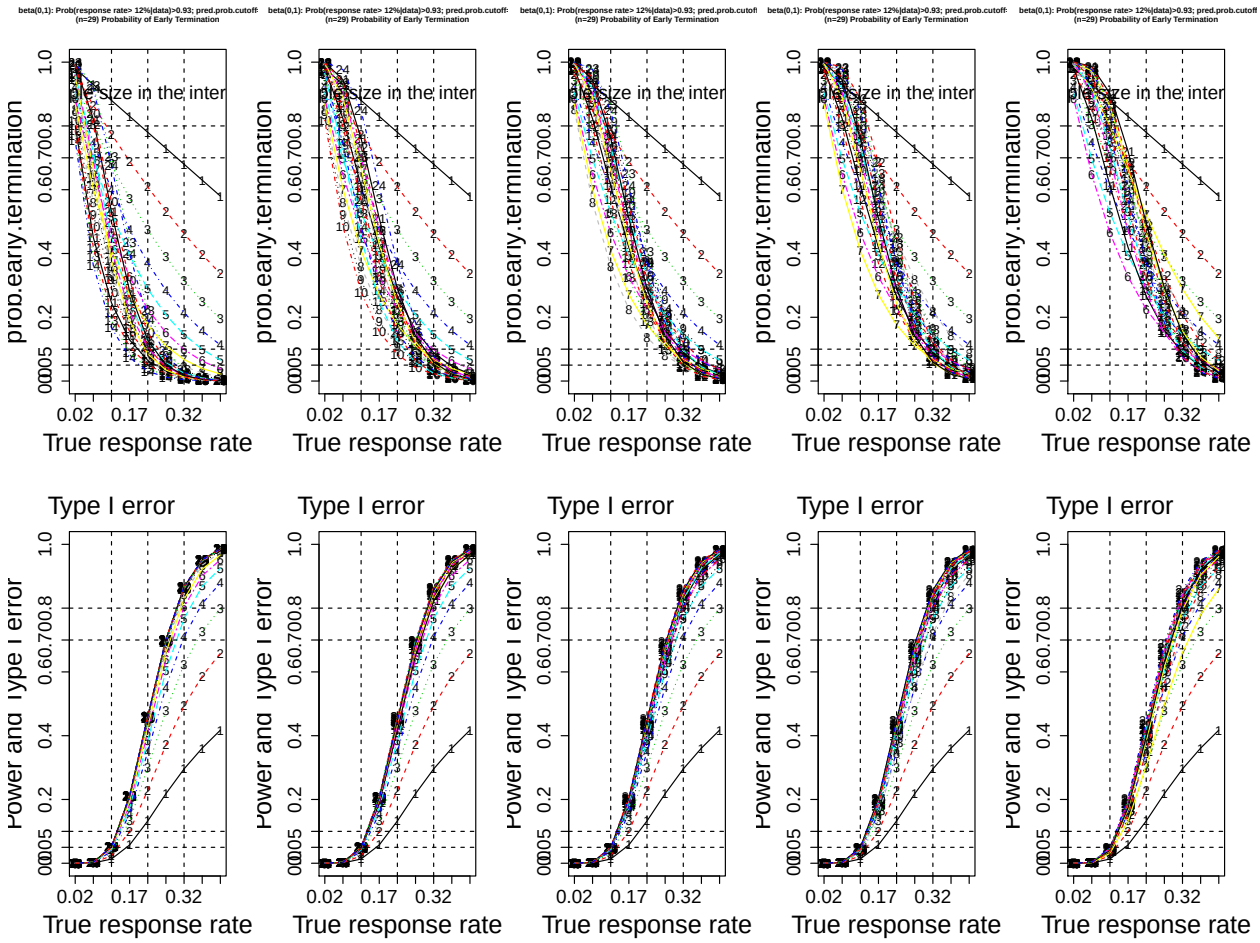

beta(0,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

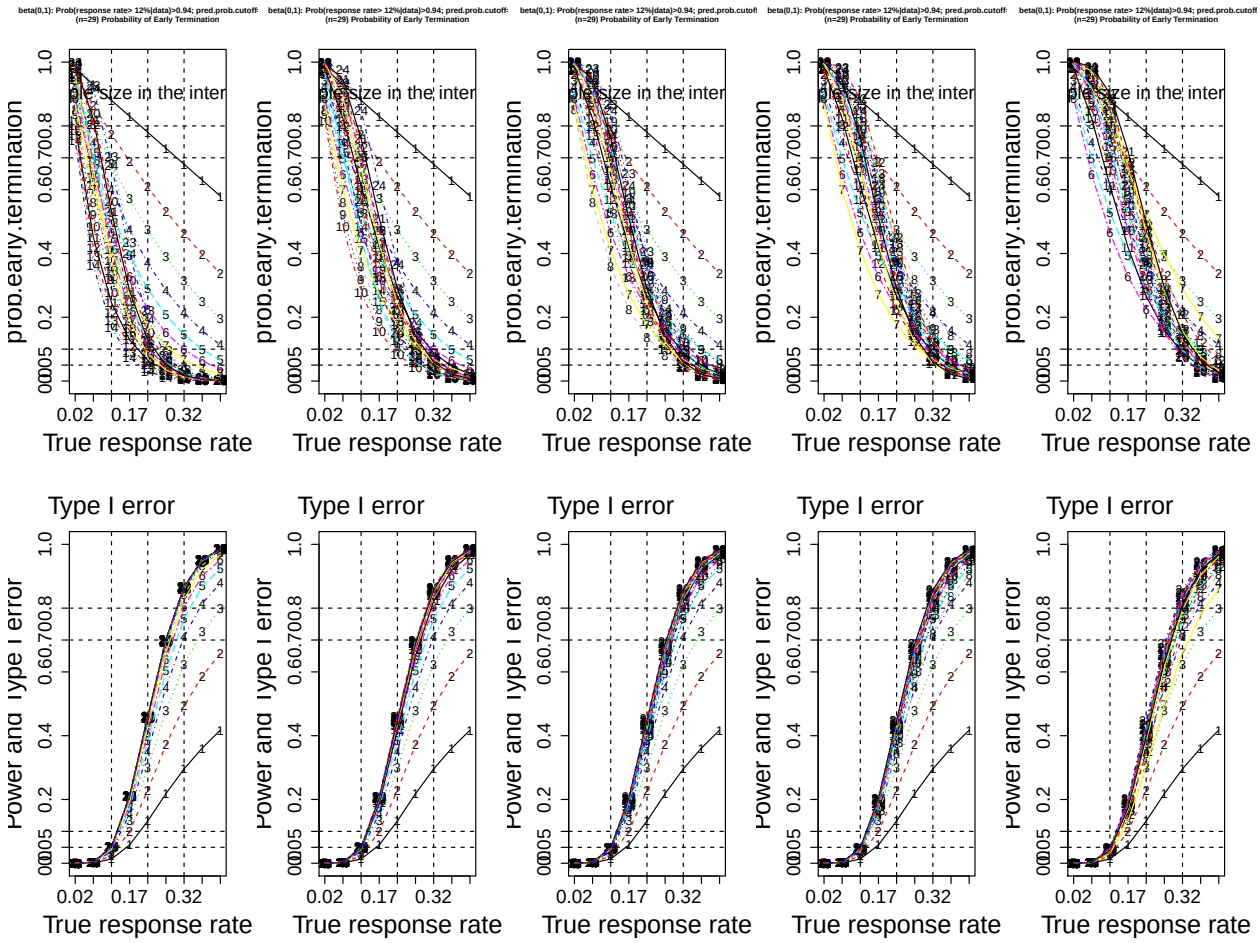

beta(0,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

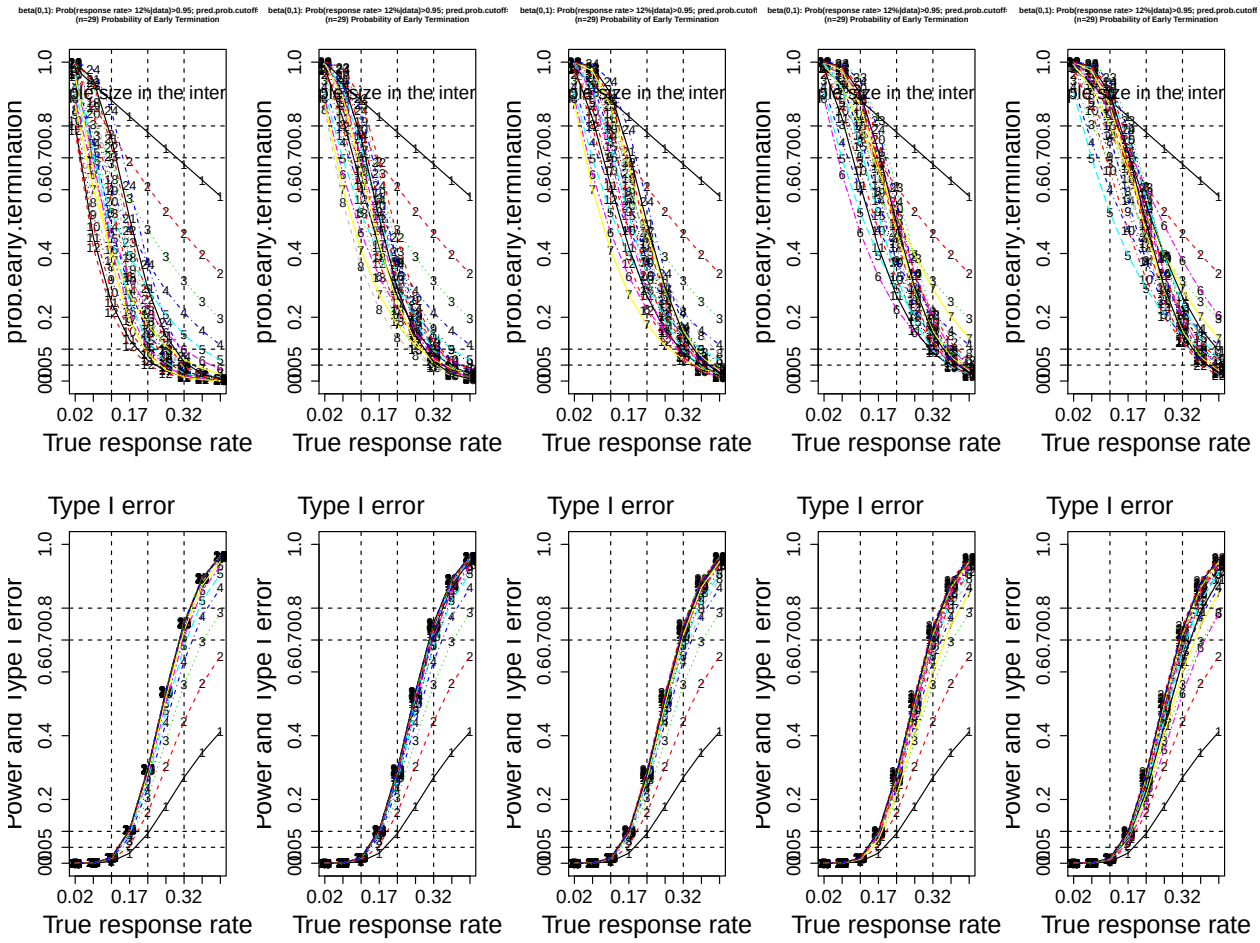

beta(0,1): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

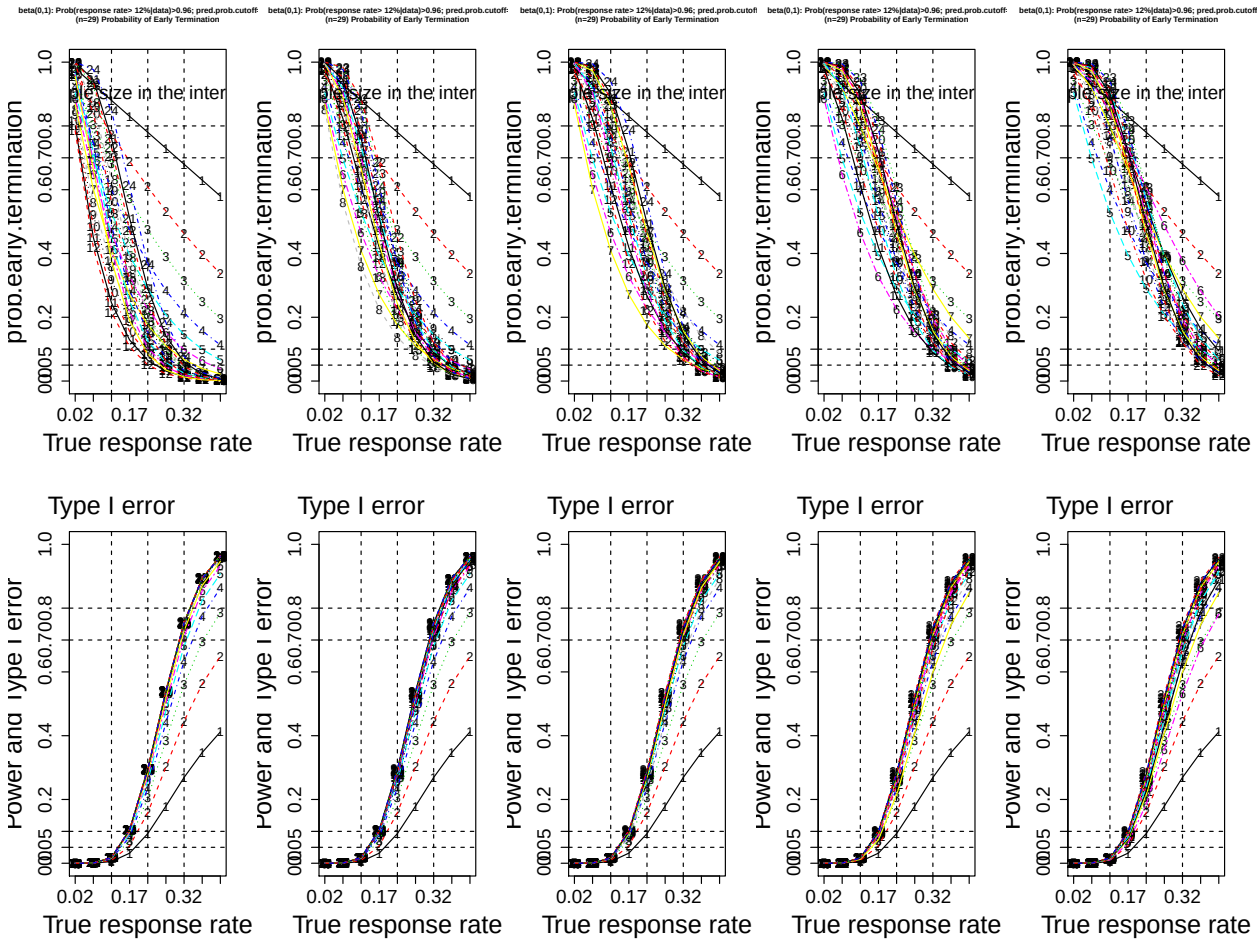

beta(0,1): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

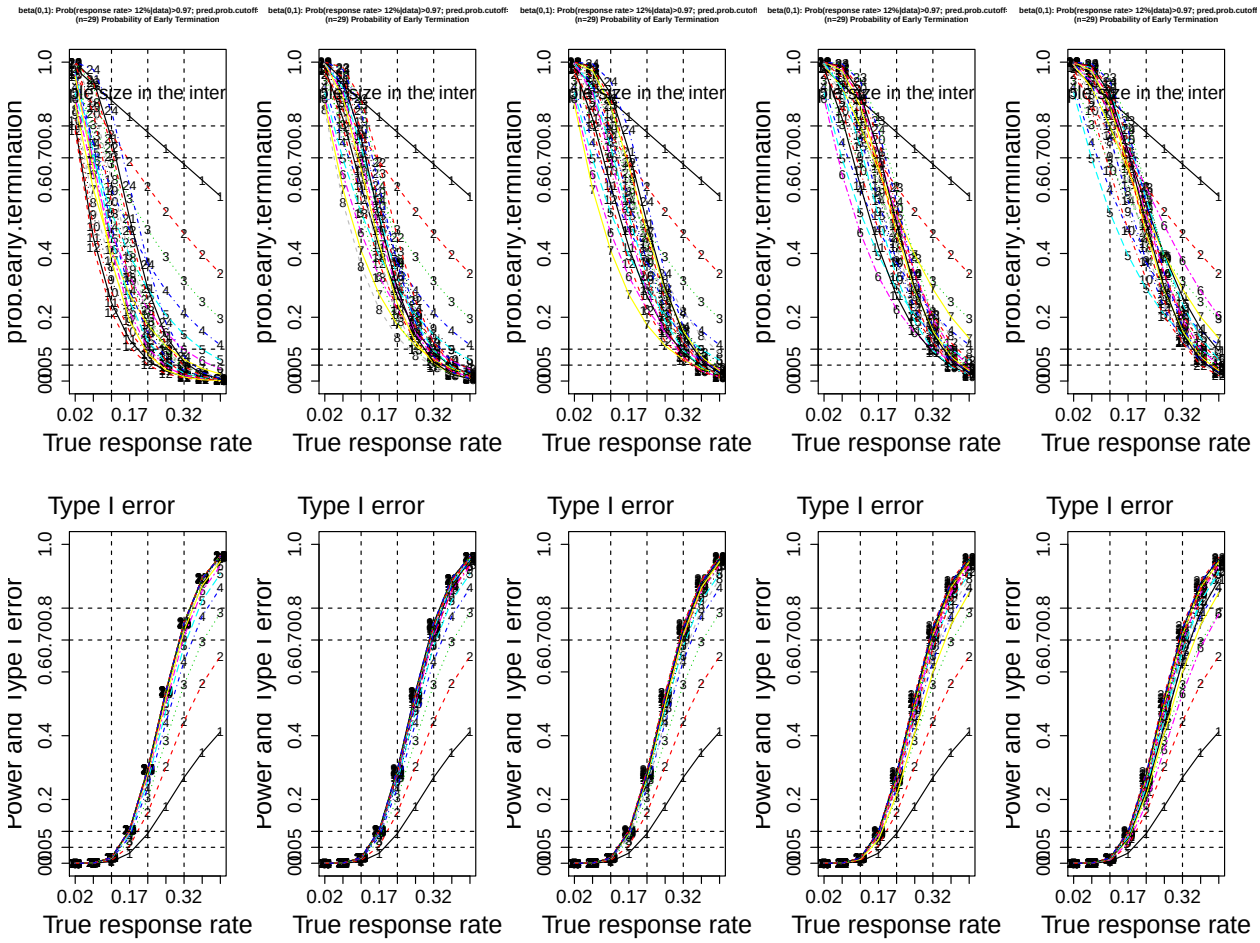

beta(0,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

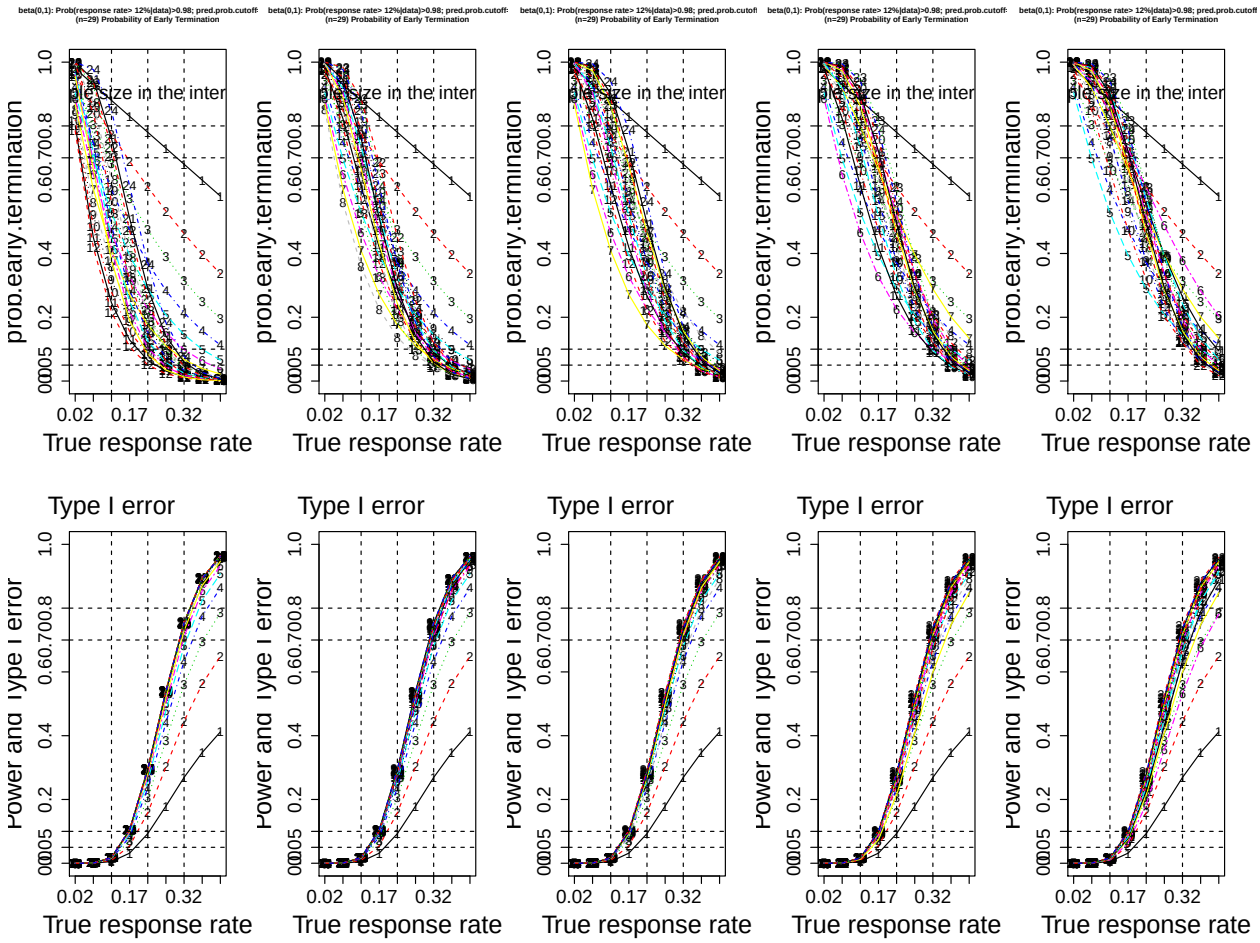

beta(0,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

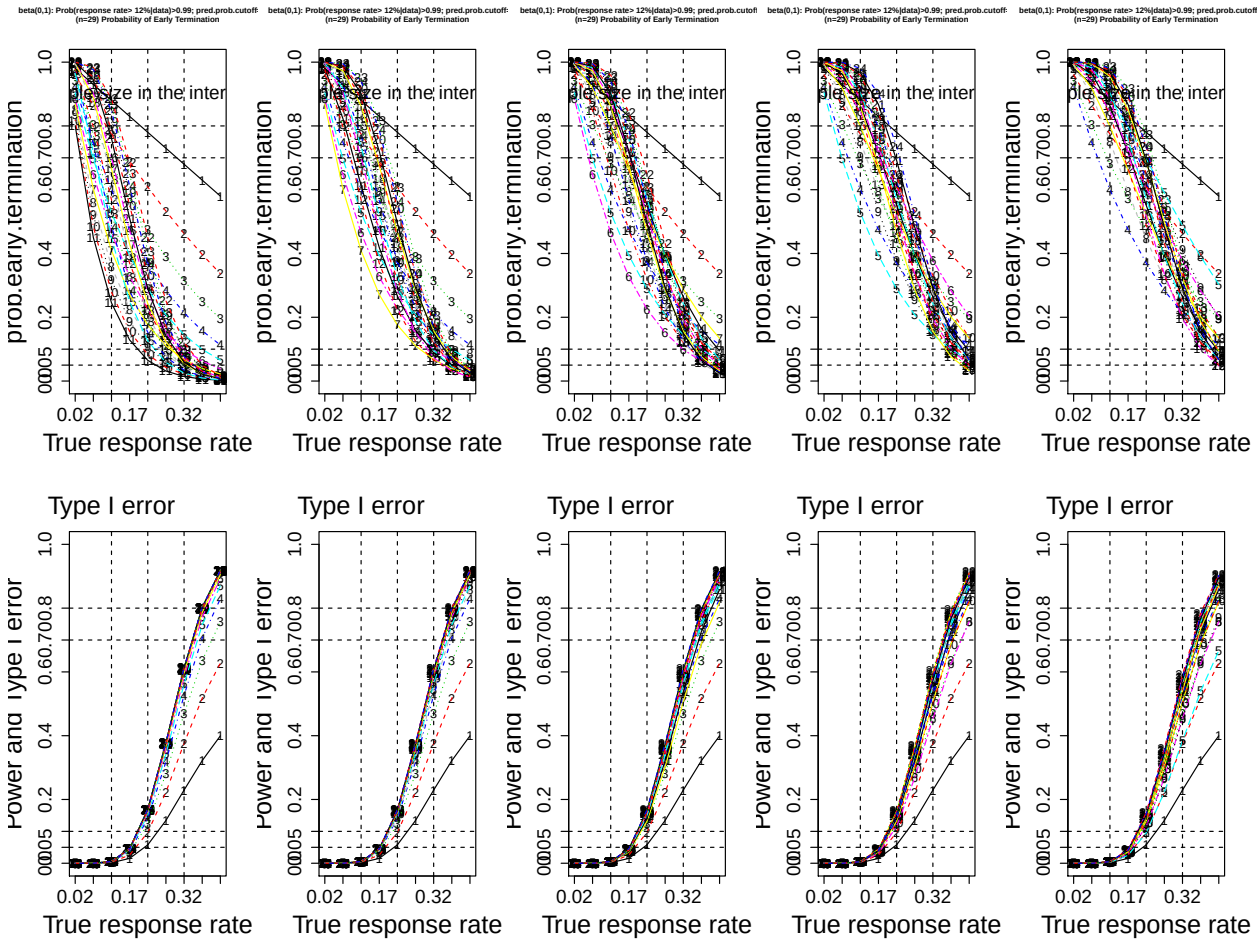

beta(0,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

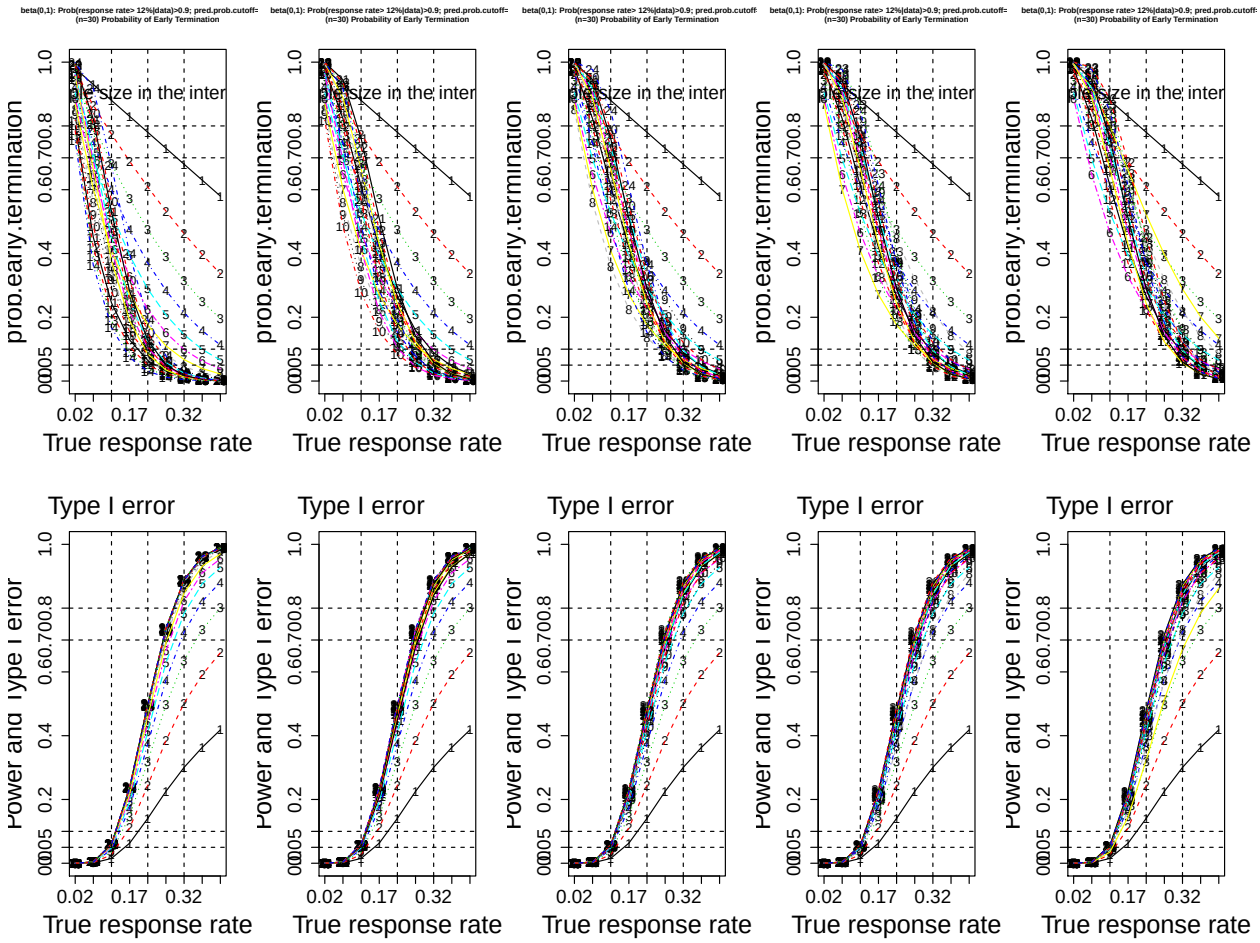

beta(0,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

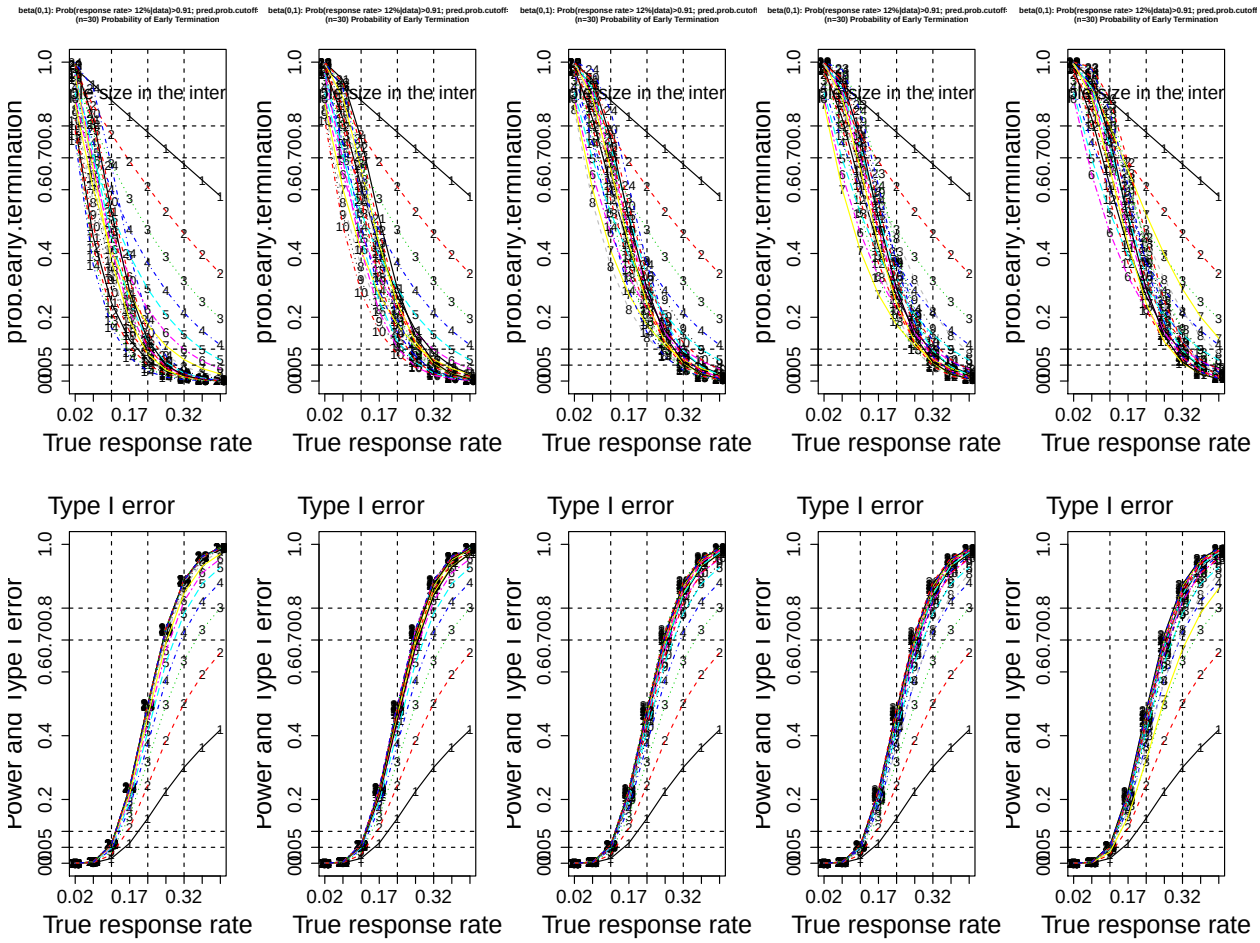

beta(0,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

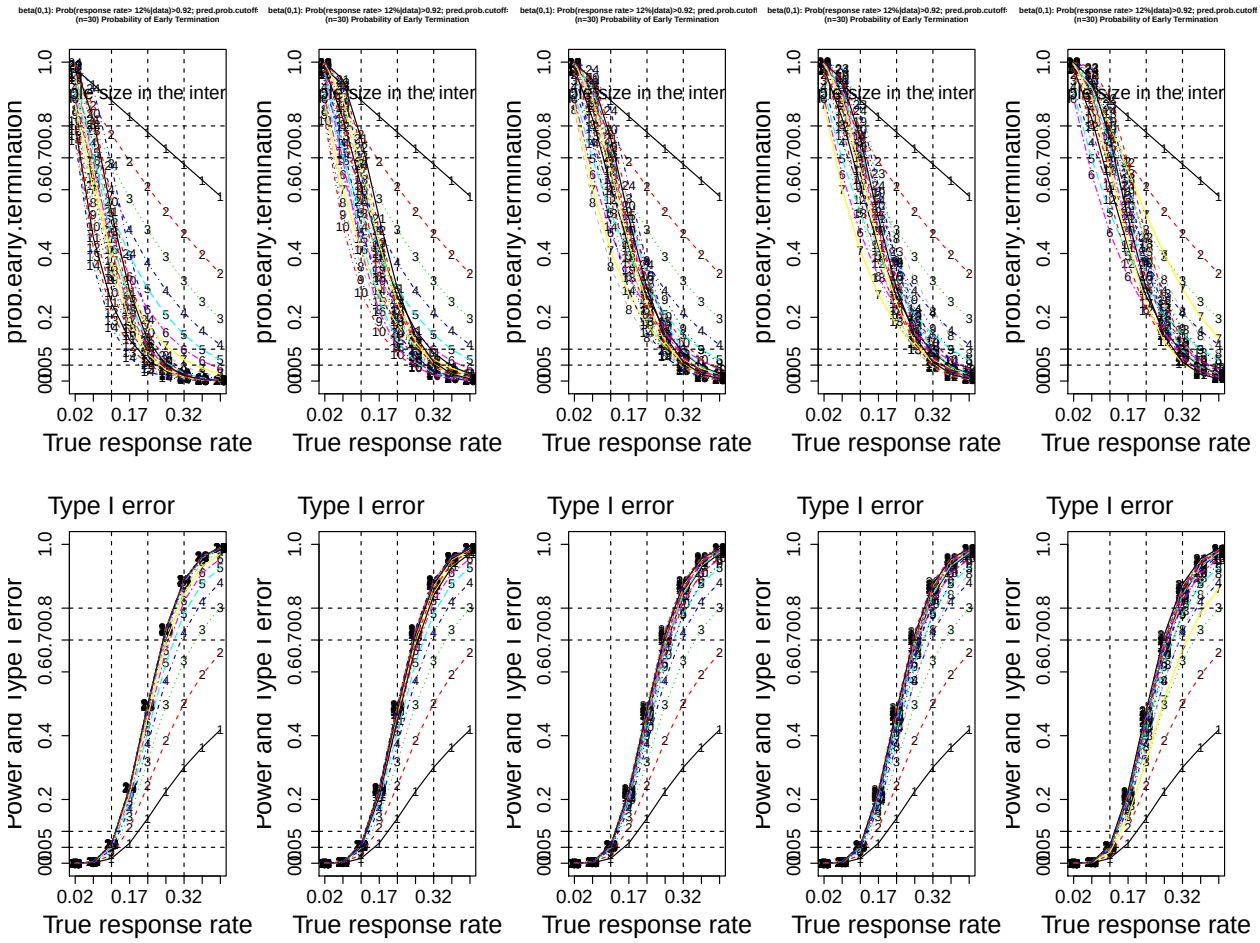

beta(0,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

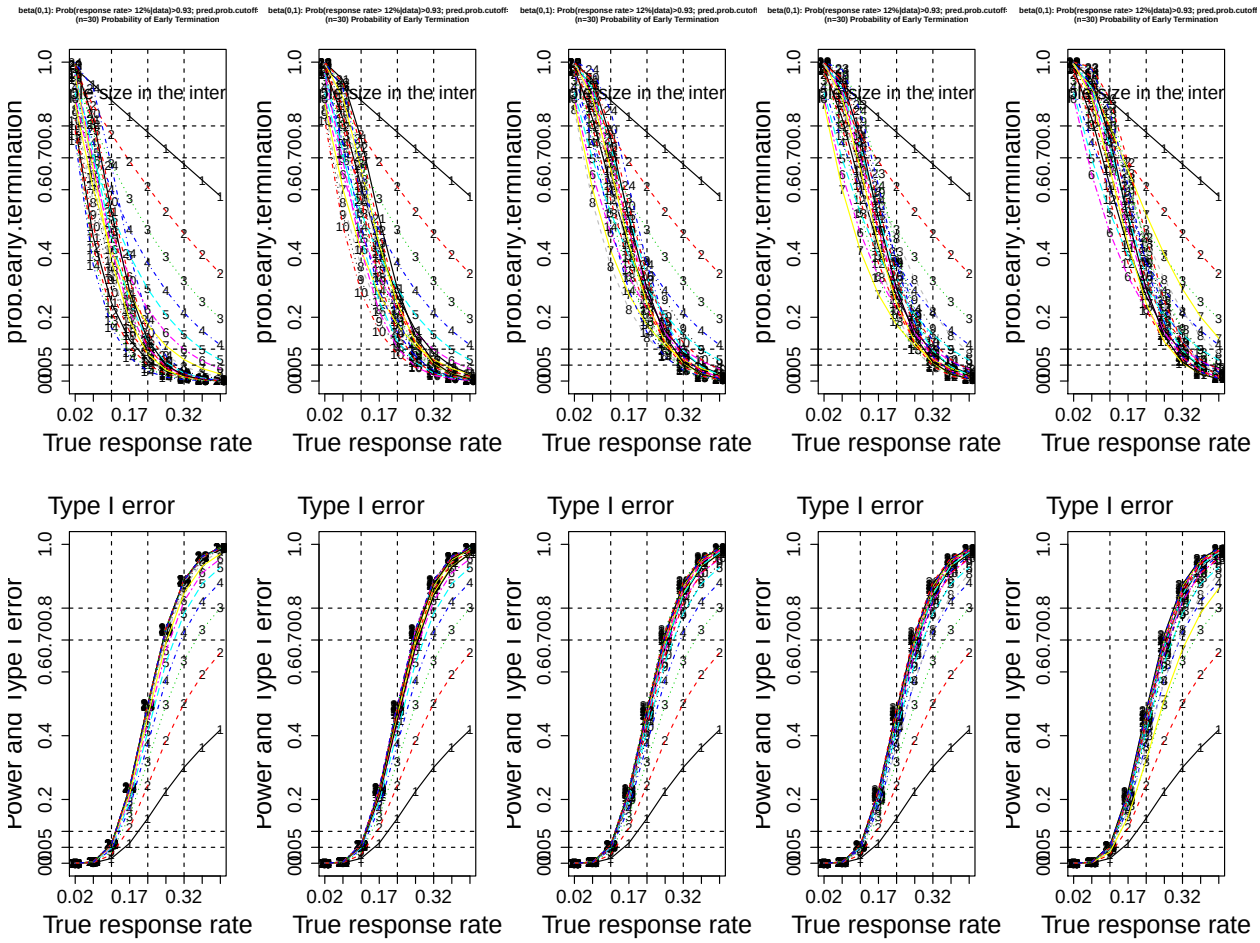

beta(0,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

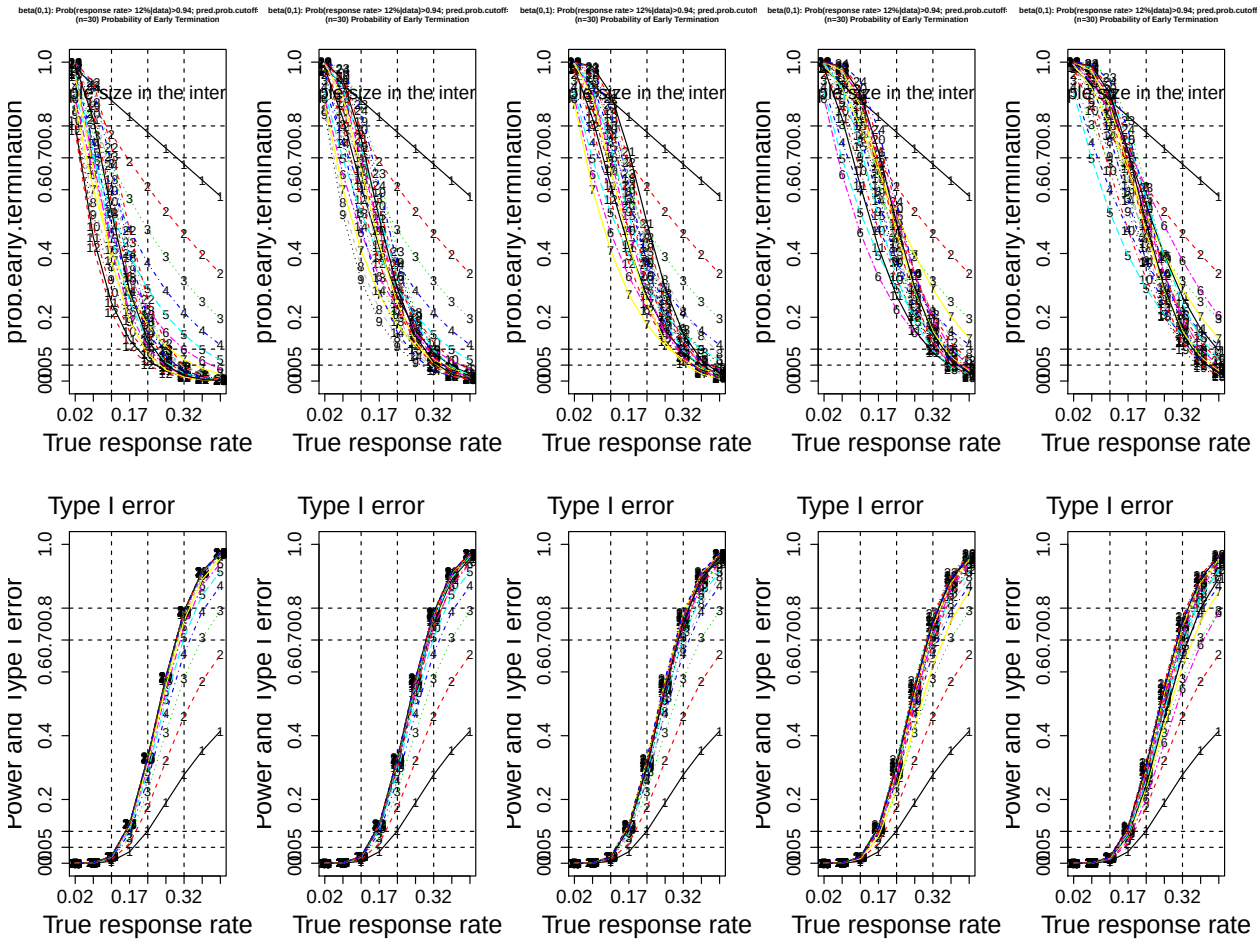

beta(0,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

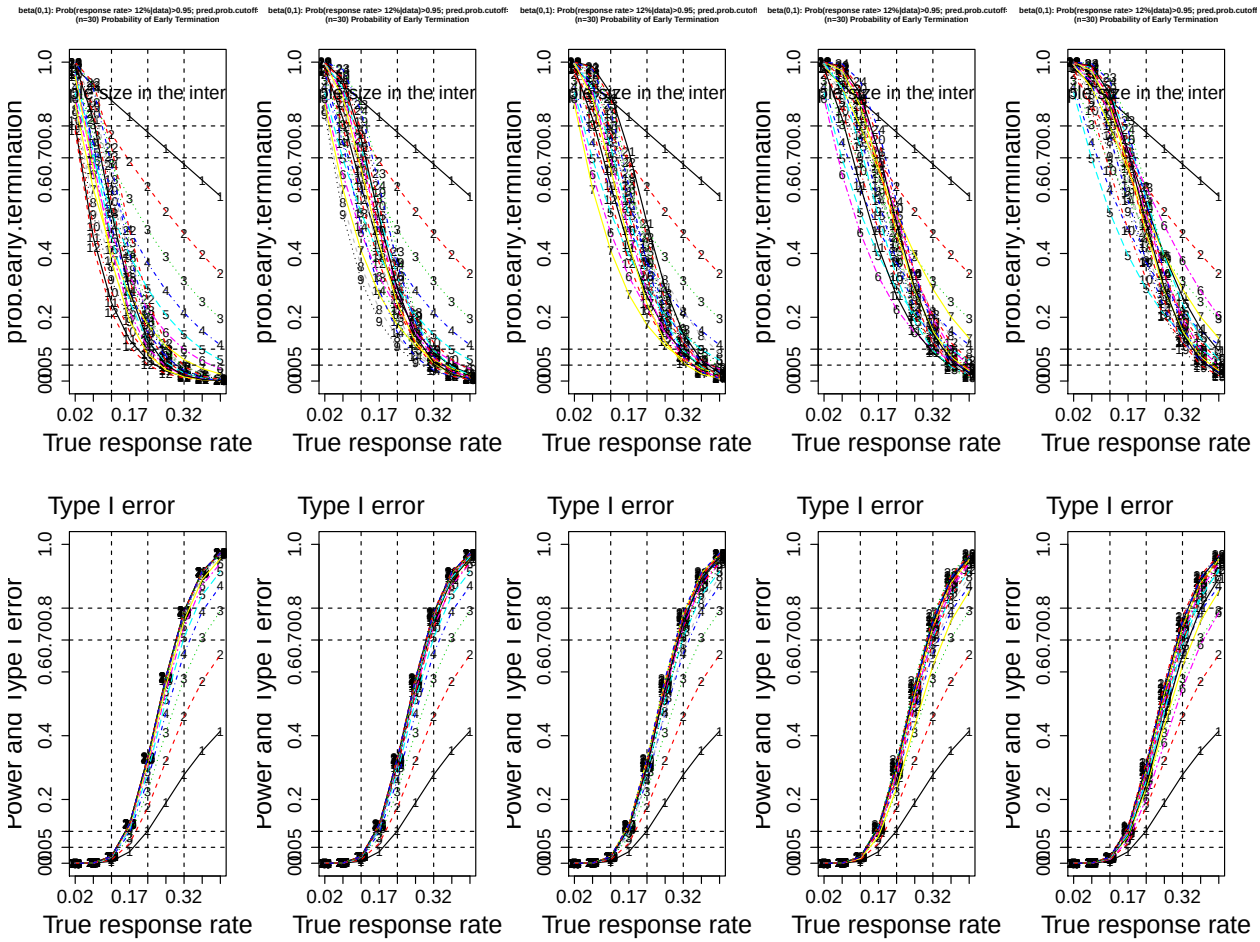

beta(0,1): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32

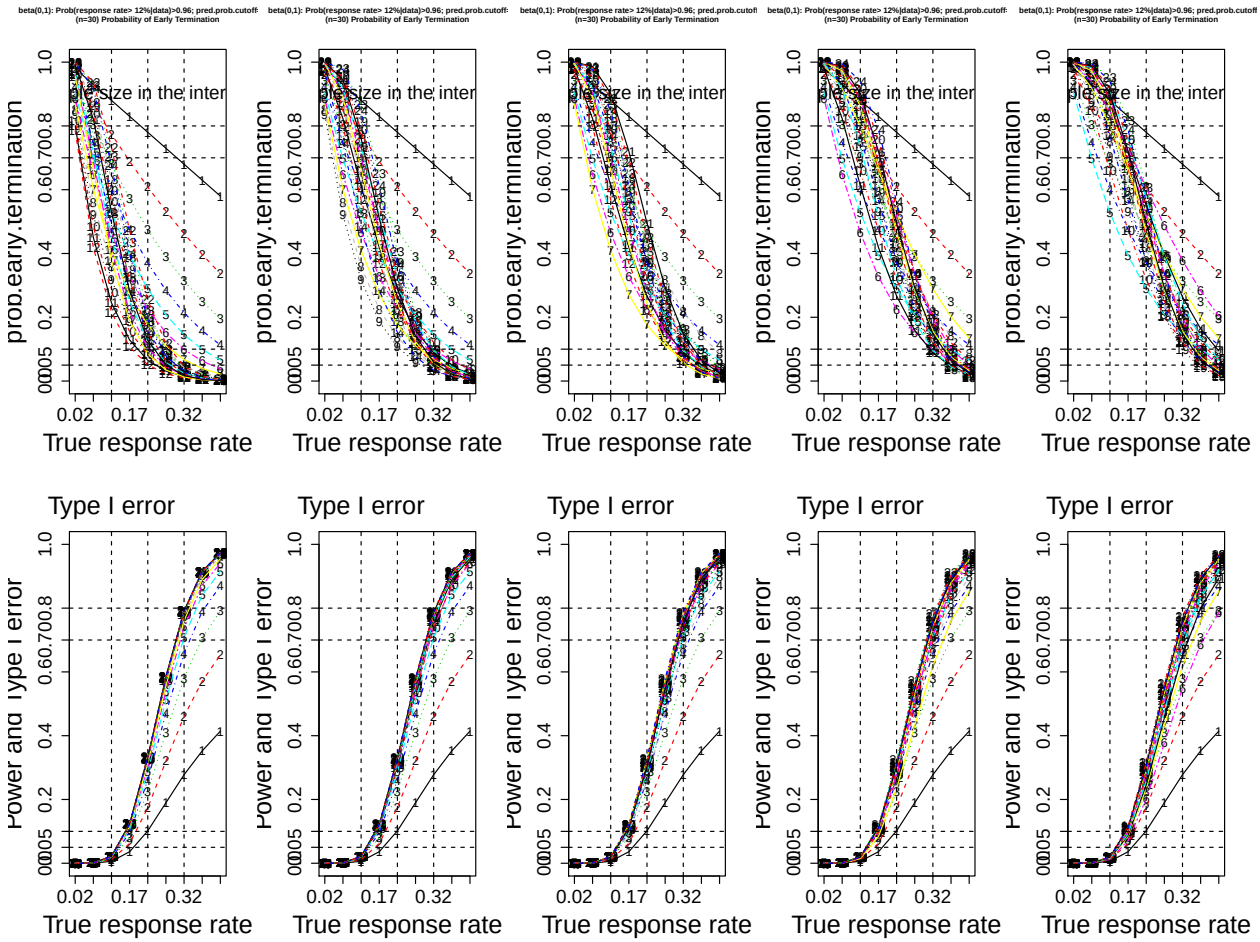

beta(0,1): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

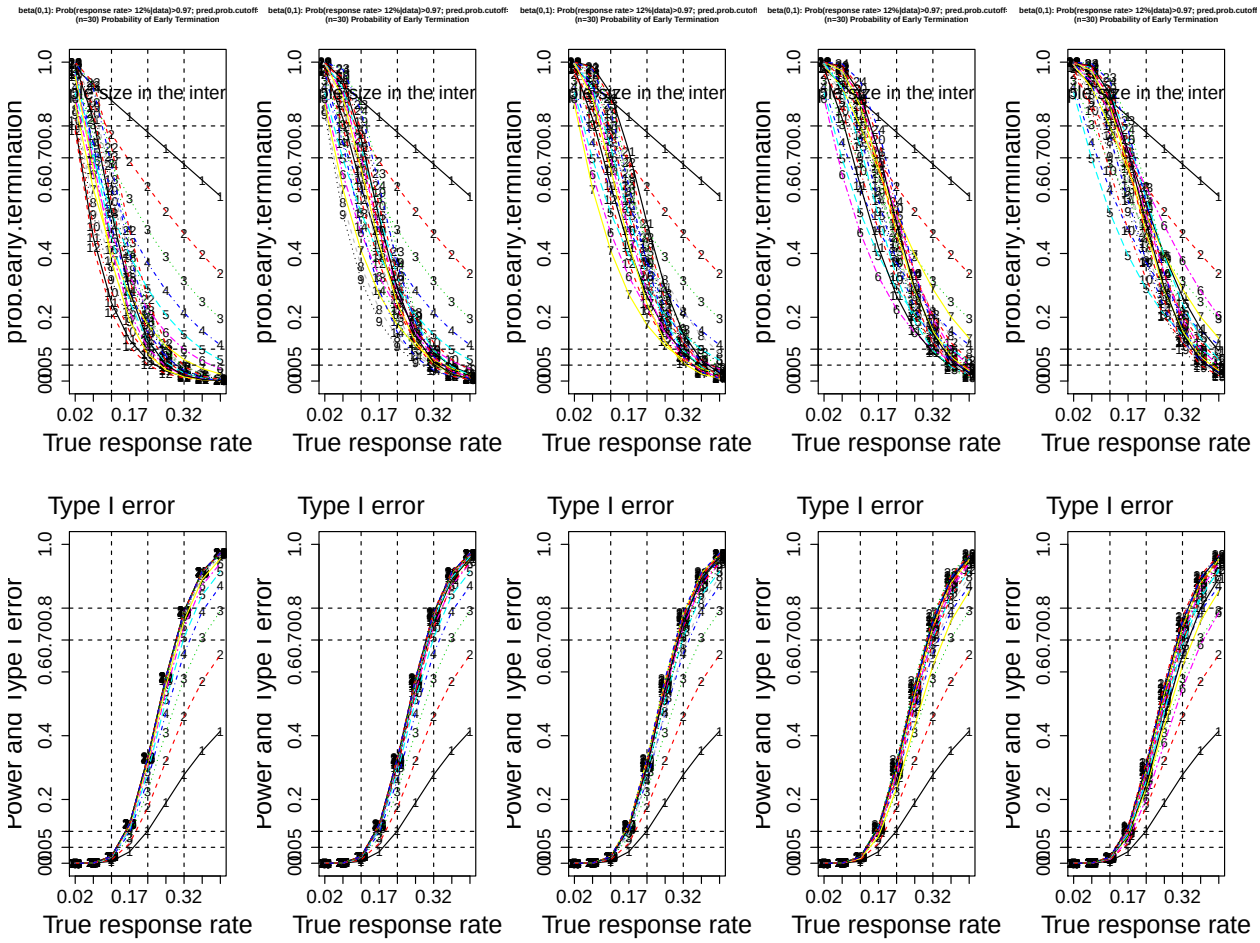

beta(0,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

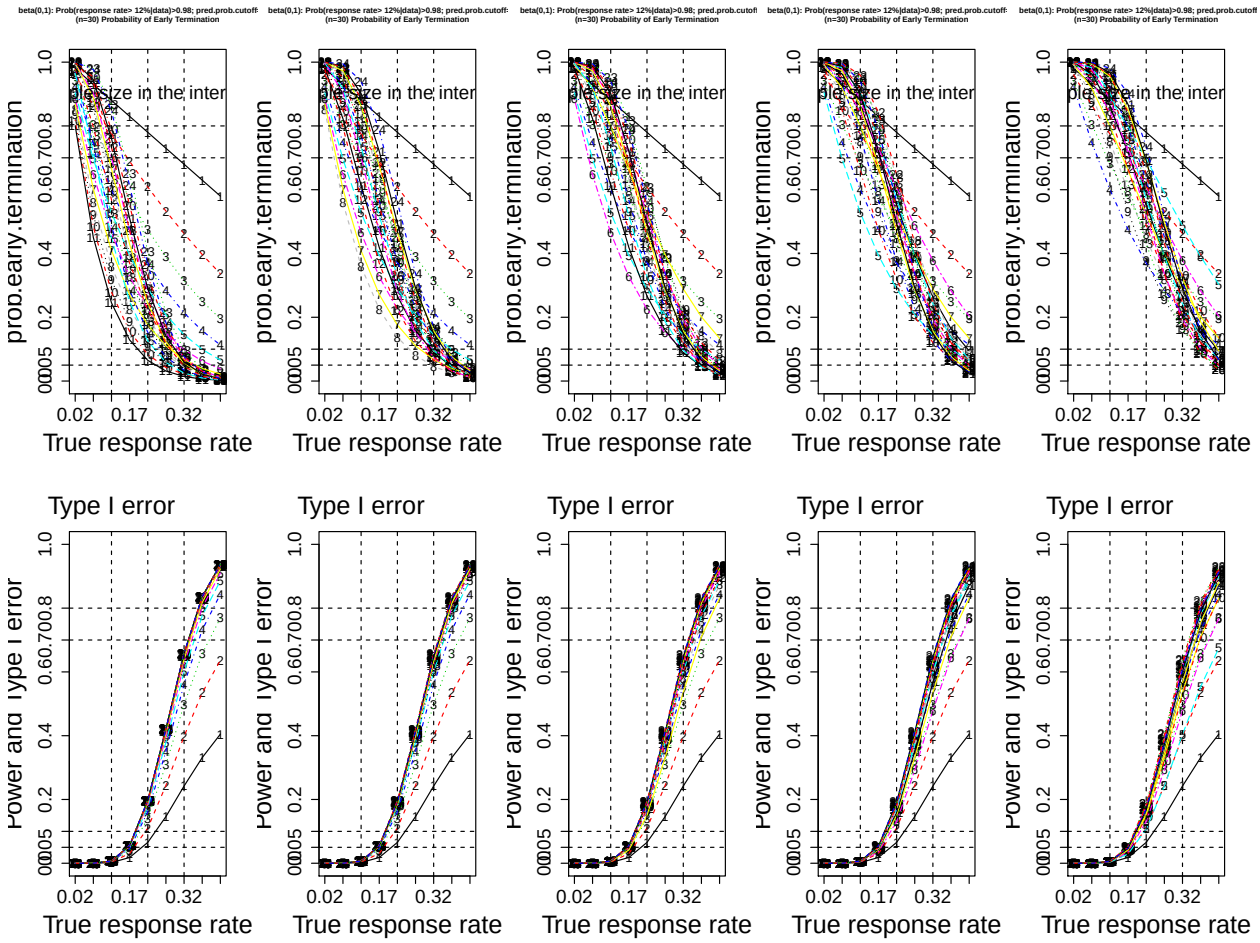

beta(0,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

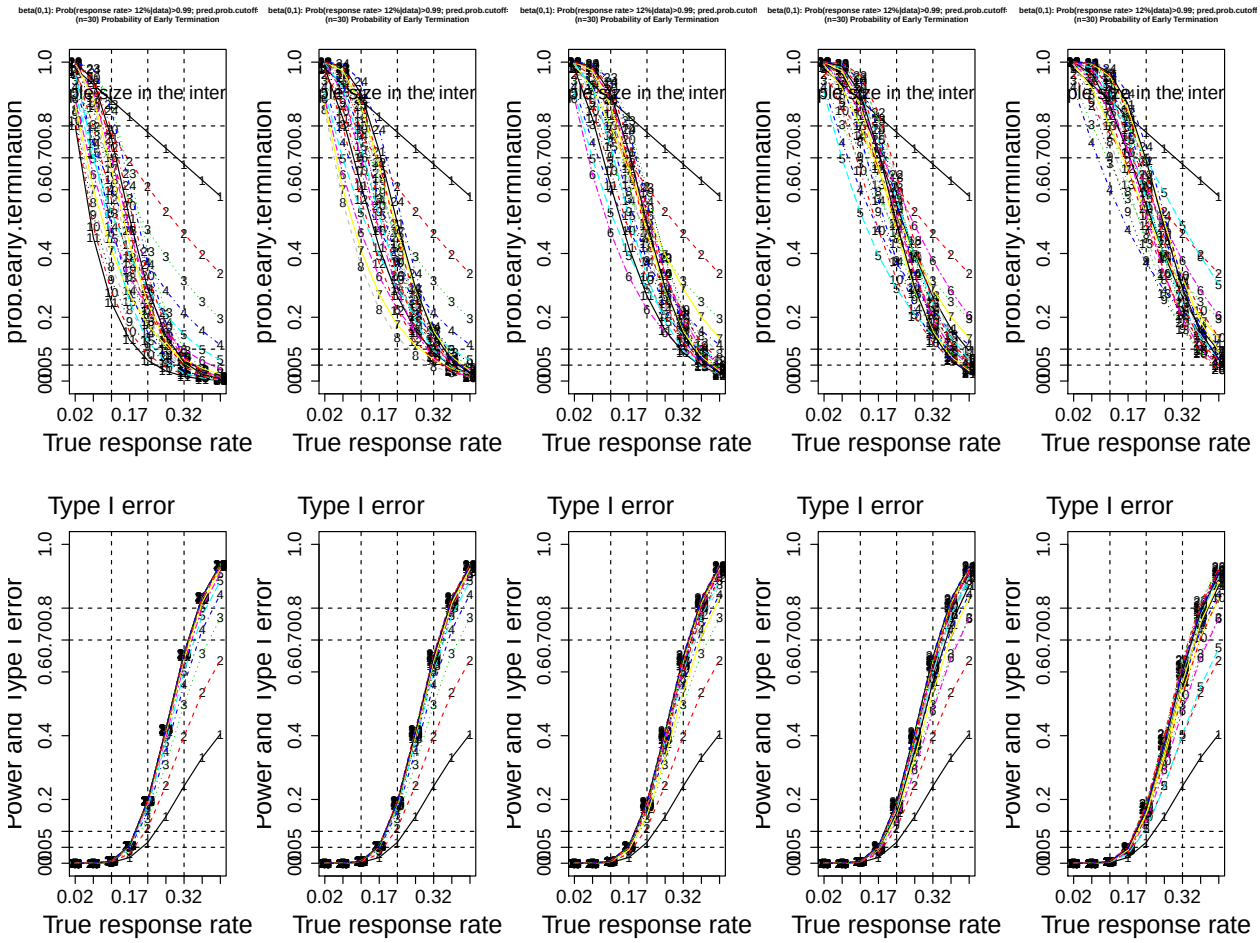

beta(0,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

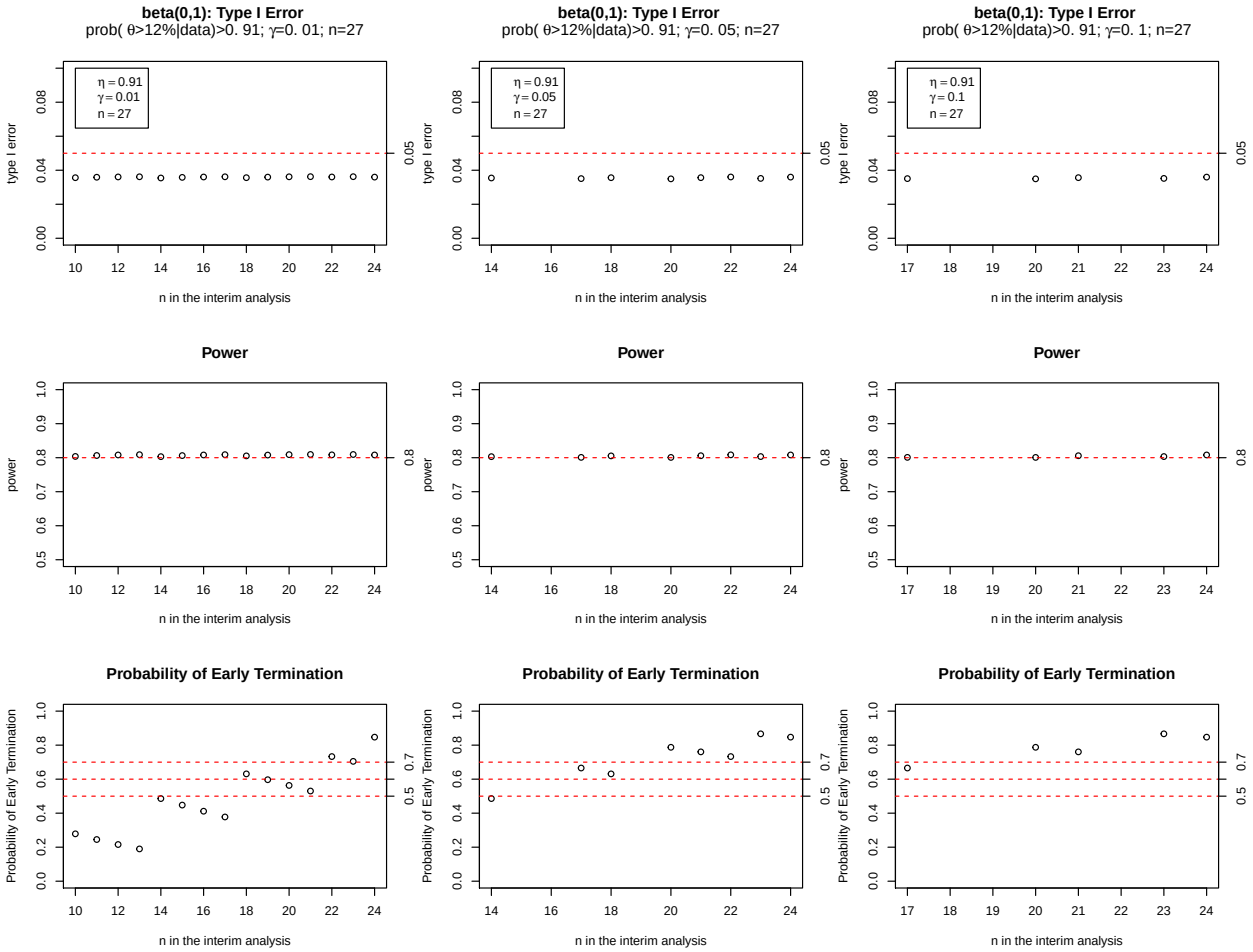

beta(0,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

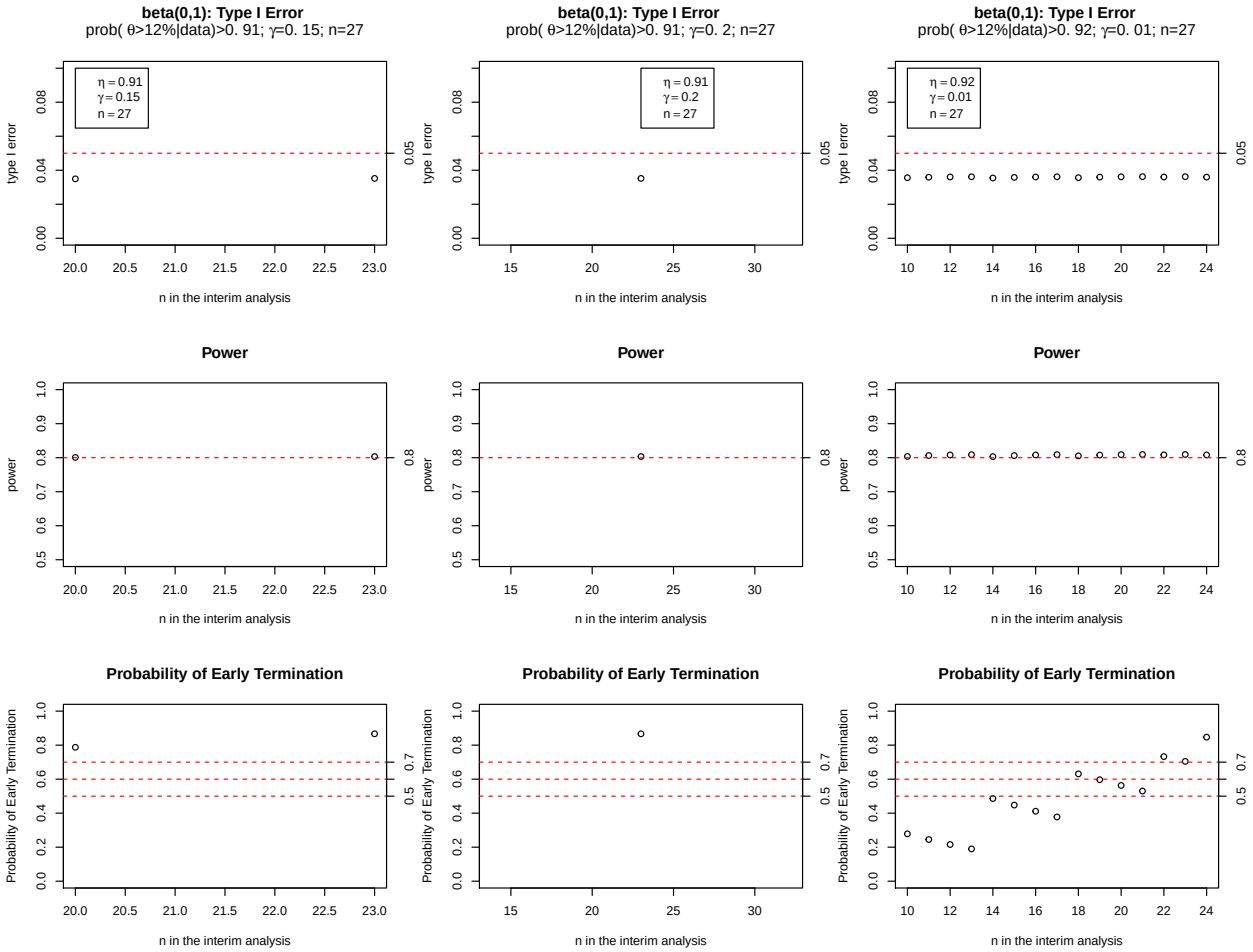

beta(0,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

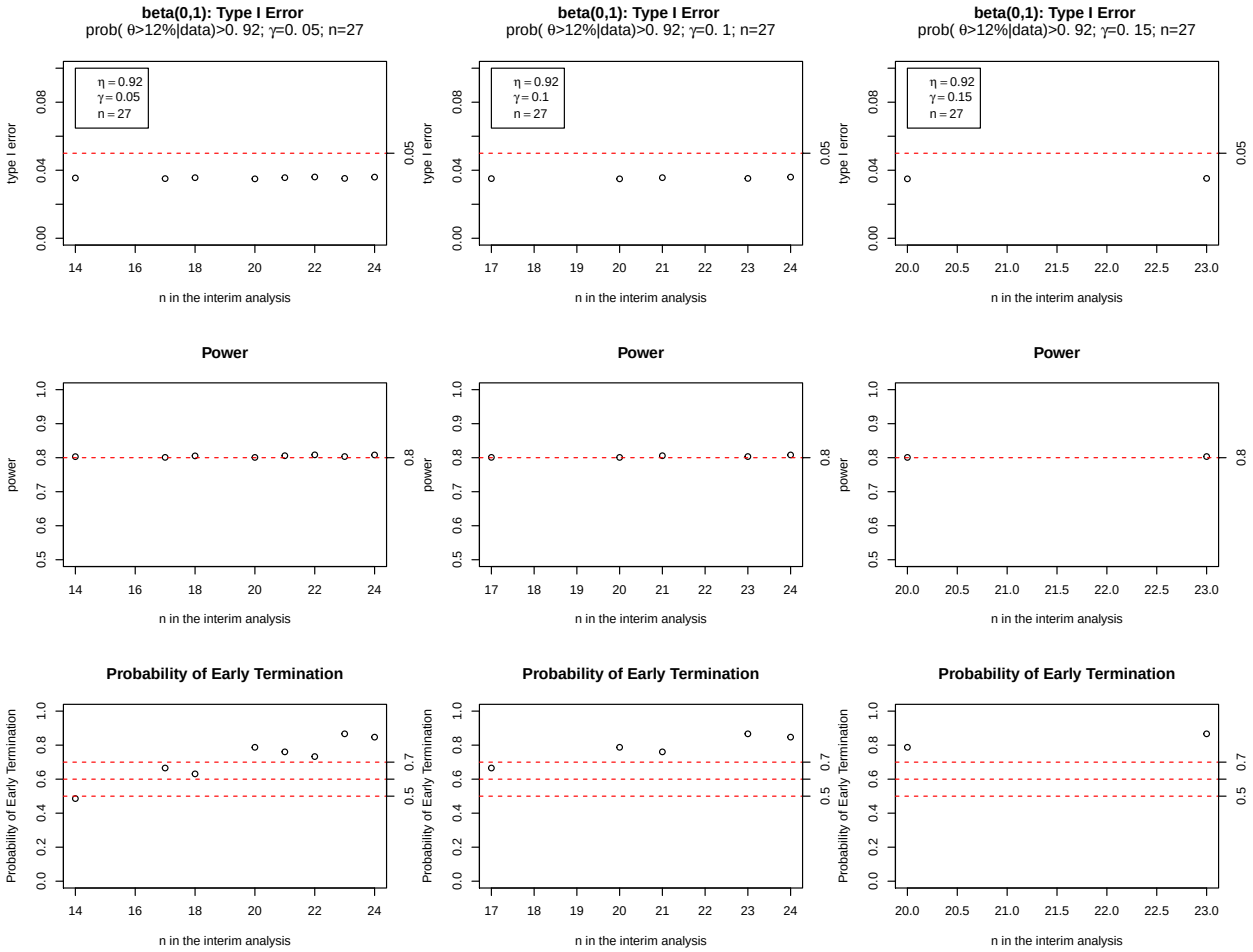

beta(0,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

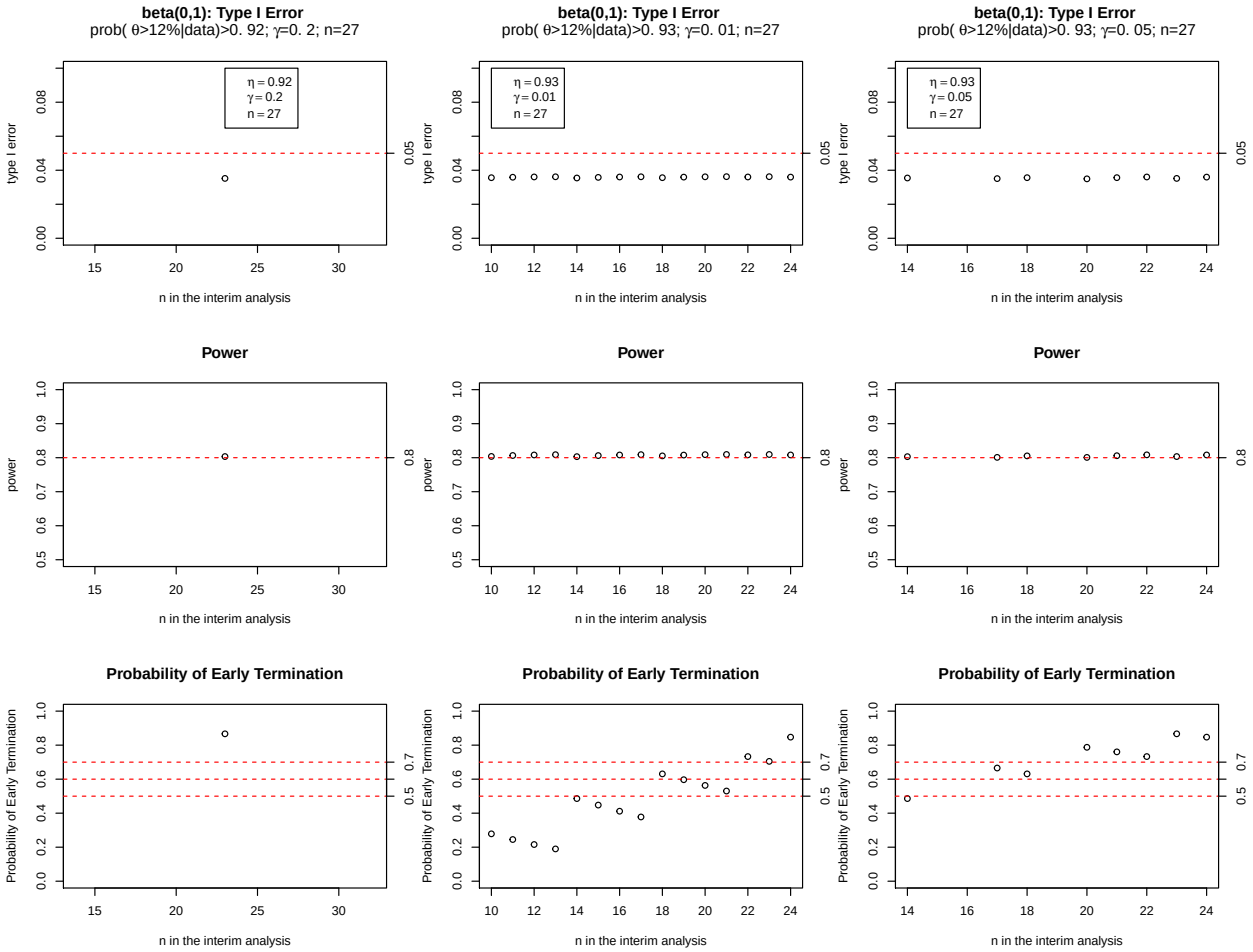

beta(0,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

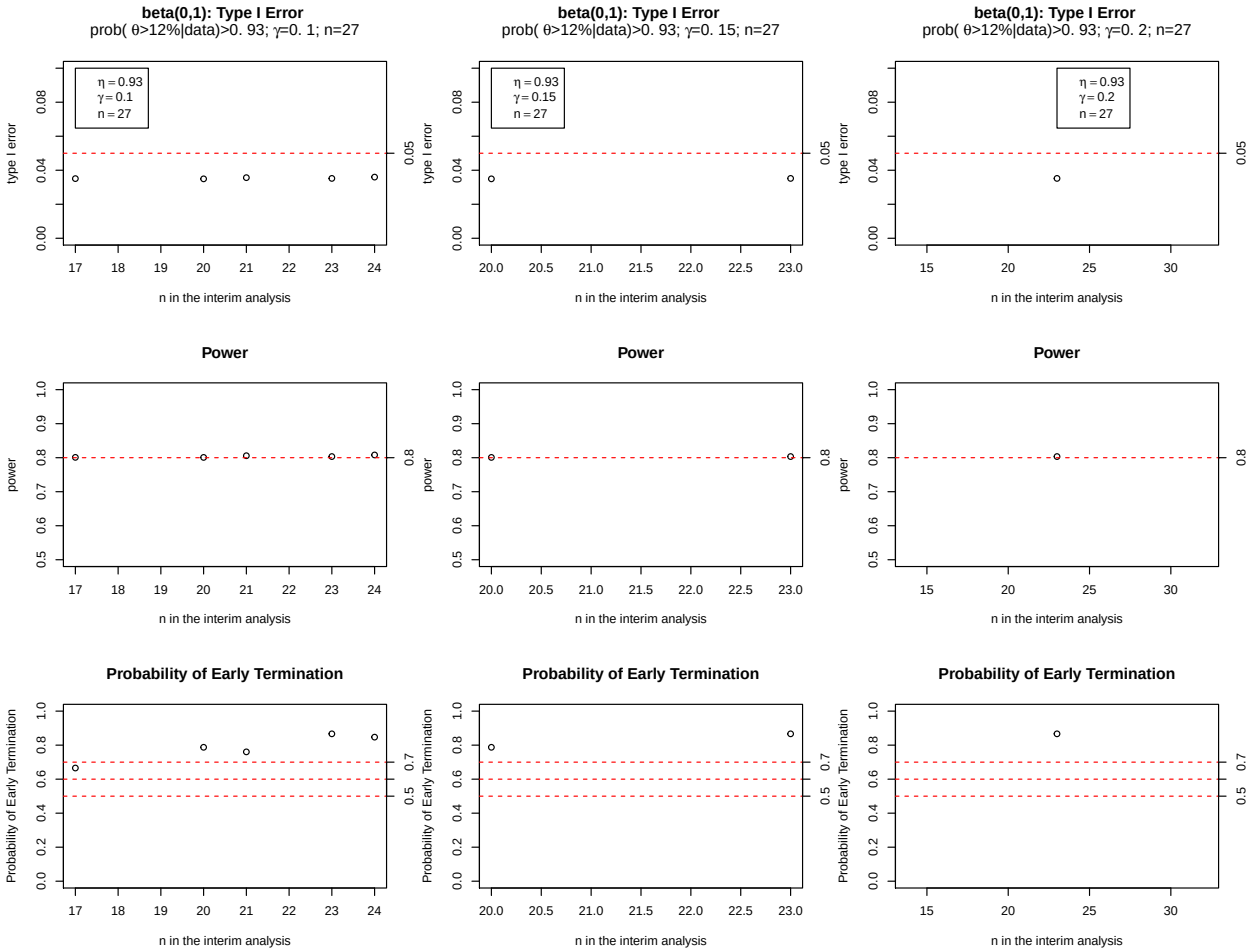

beta(0,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

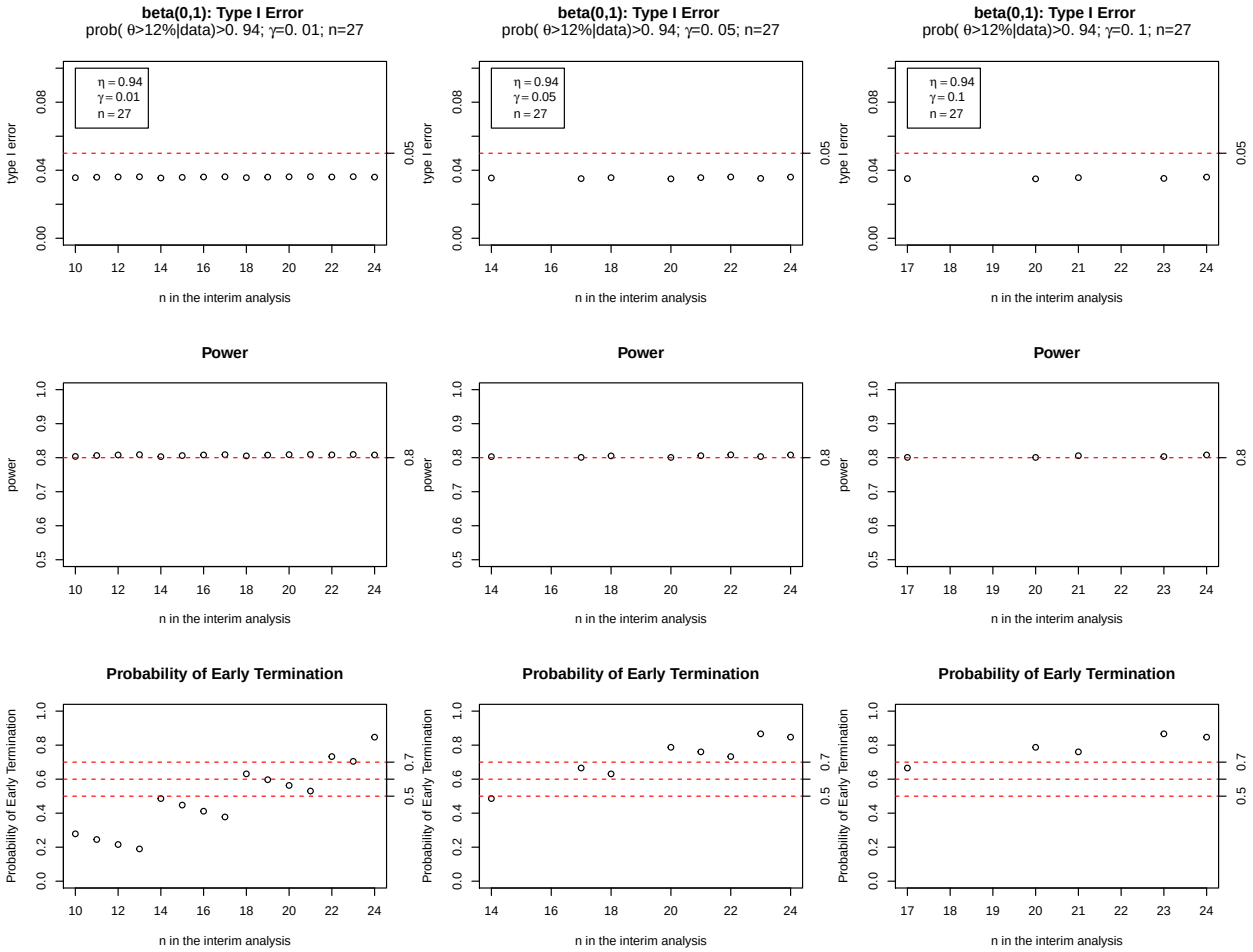

beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 01; n=27
η = 0.91
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 05; n=27
η = 0.91
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=27
η = 0.91
γ = 0.1
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

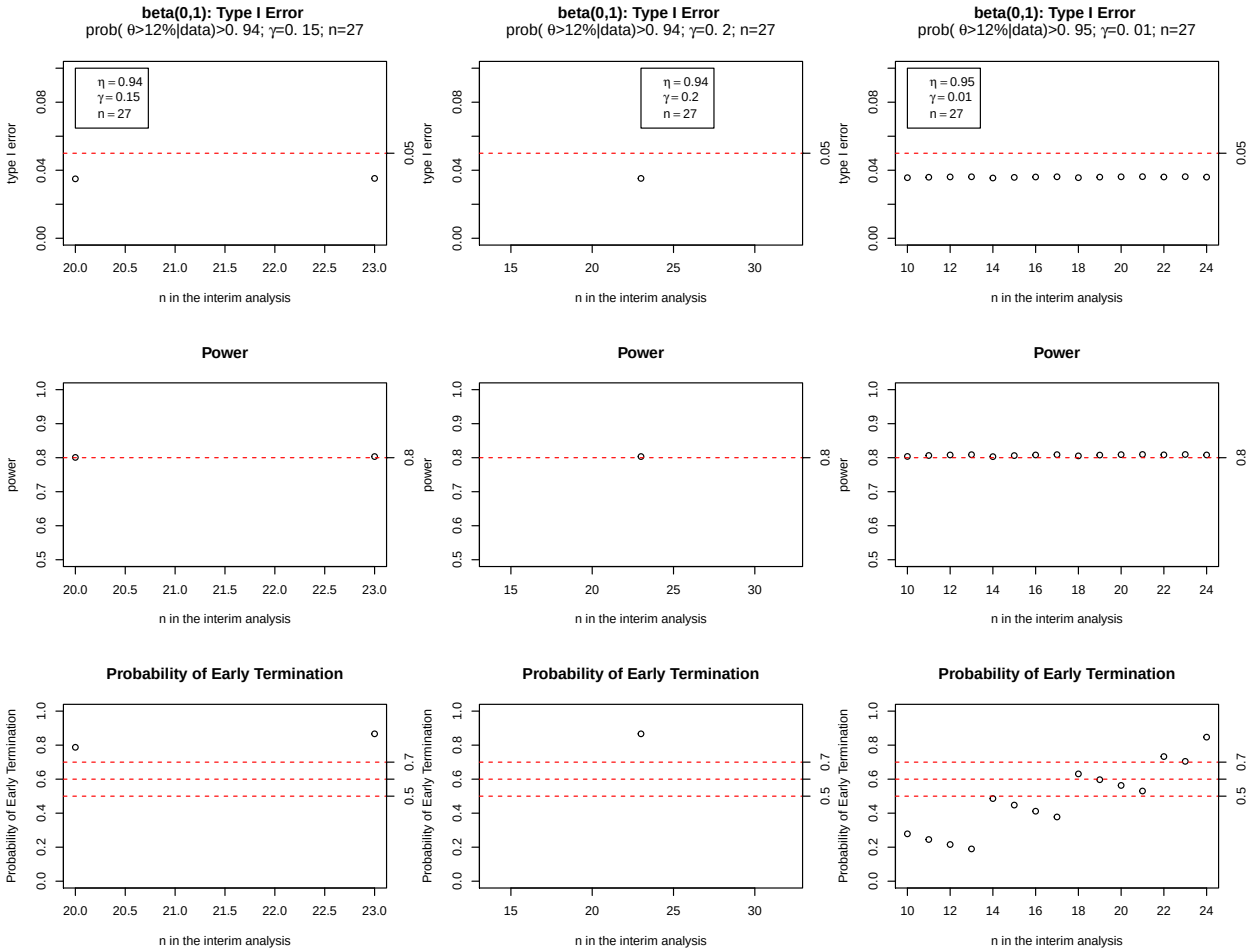

beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=27
η = 0.91
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=27
η = 0.91
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=27
η = 0.92
γ = 0.01
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

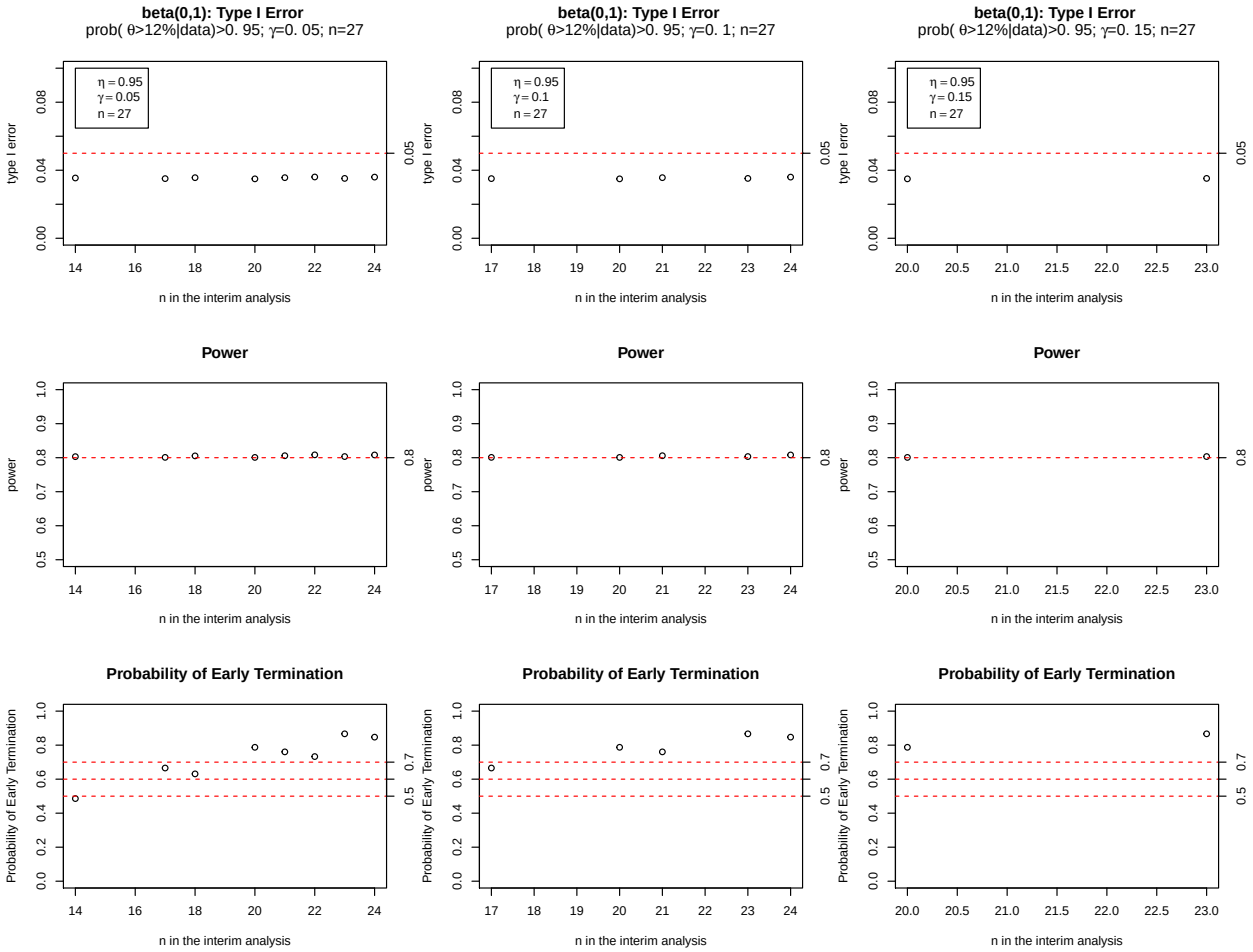

beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=27
η = 0.92
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=27
η = 0.92
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=27
η = 0.92
γ = 0.15
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

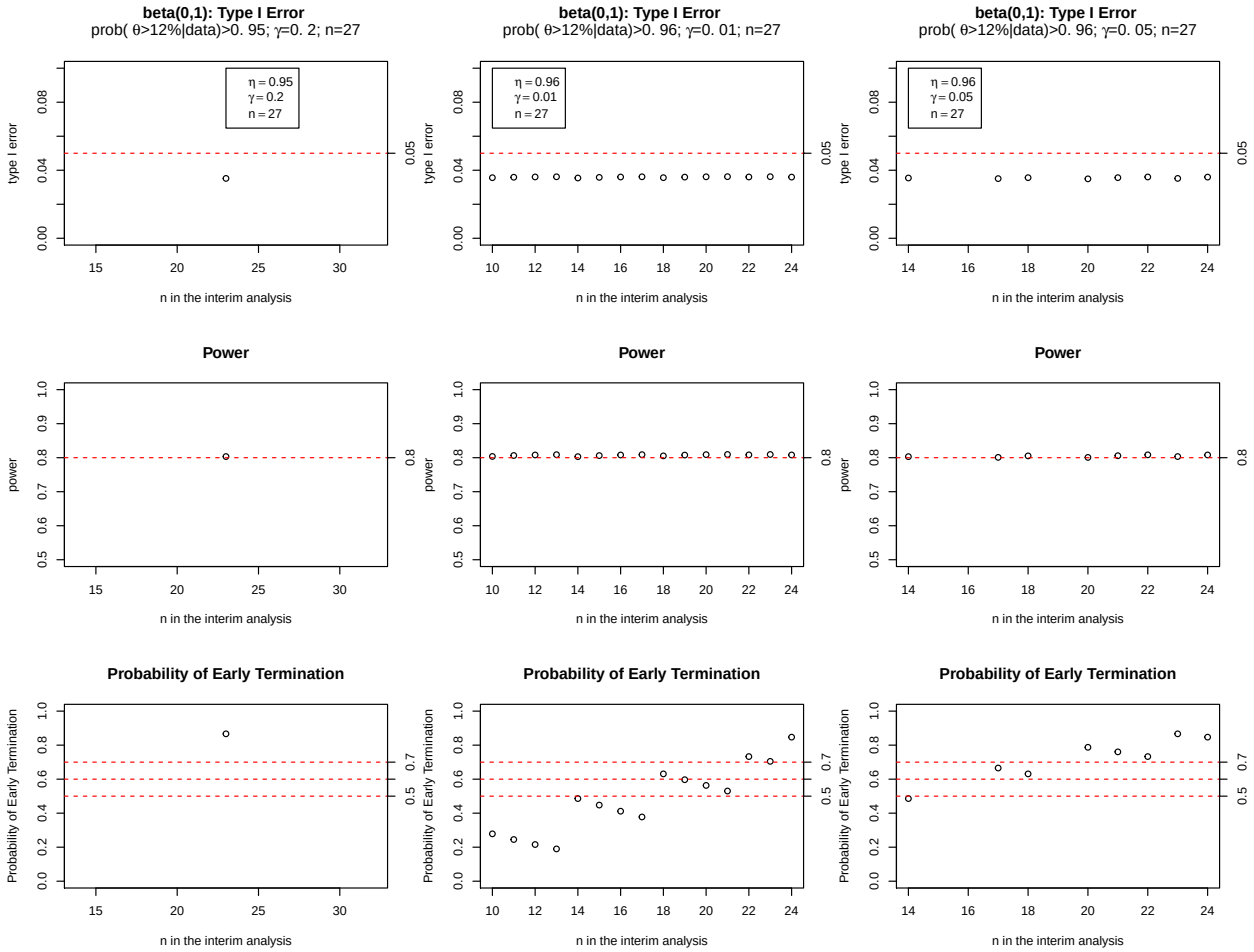

beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=27
η = 0.92
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=27
η = 0.93
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=27
η = 0.93
γ = 0.05
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

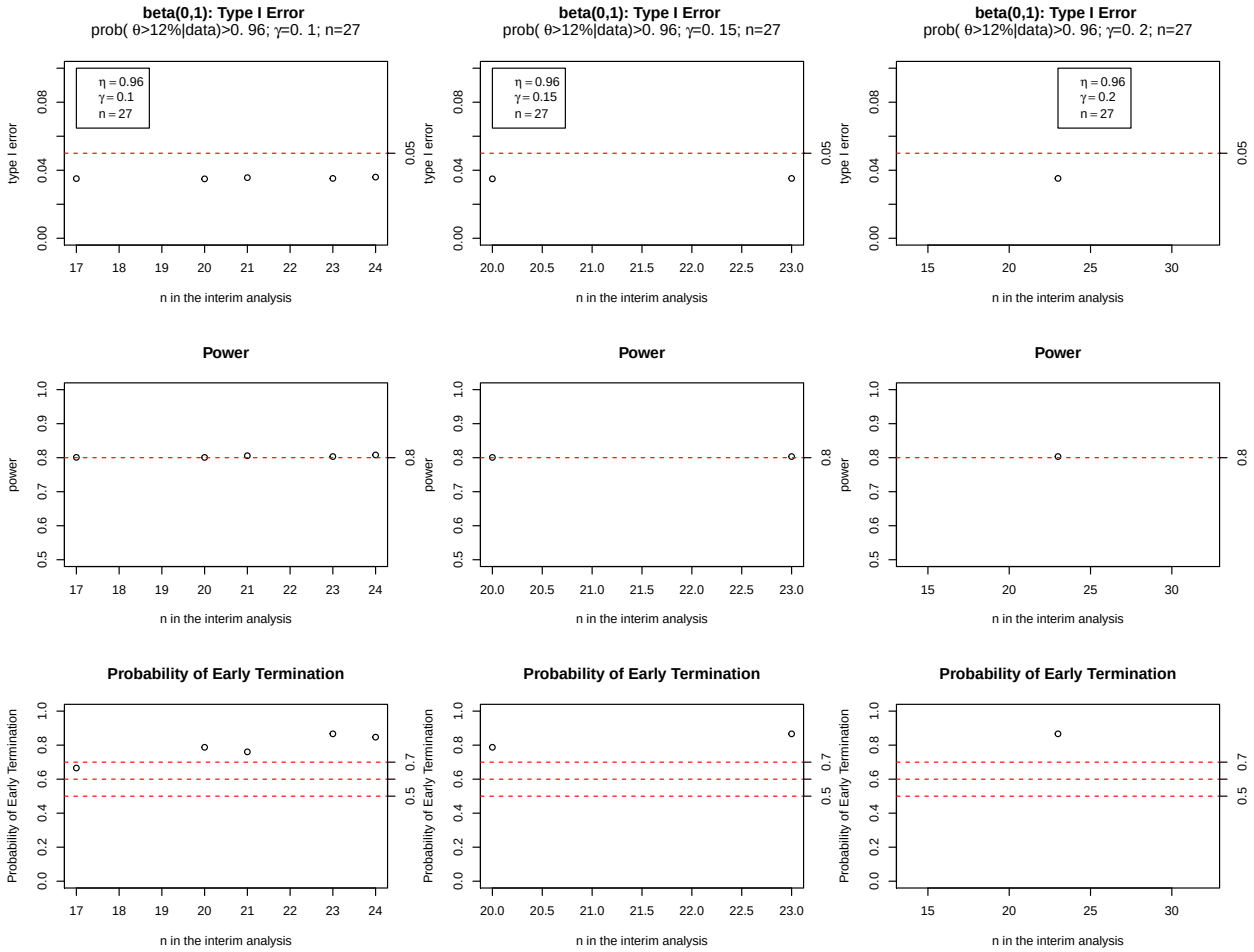

beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=27
η = 0.93
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=27
η = 0.93
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=27
η = 0.93
γ = 0.2
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

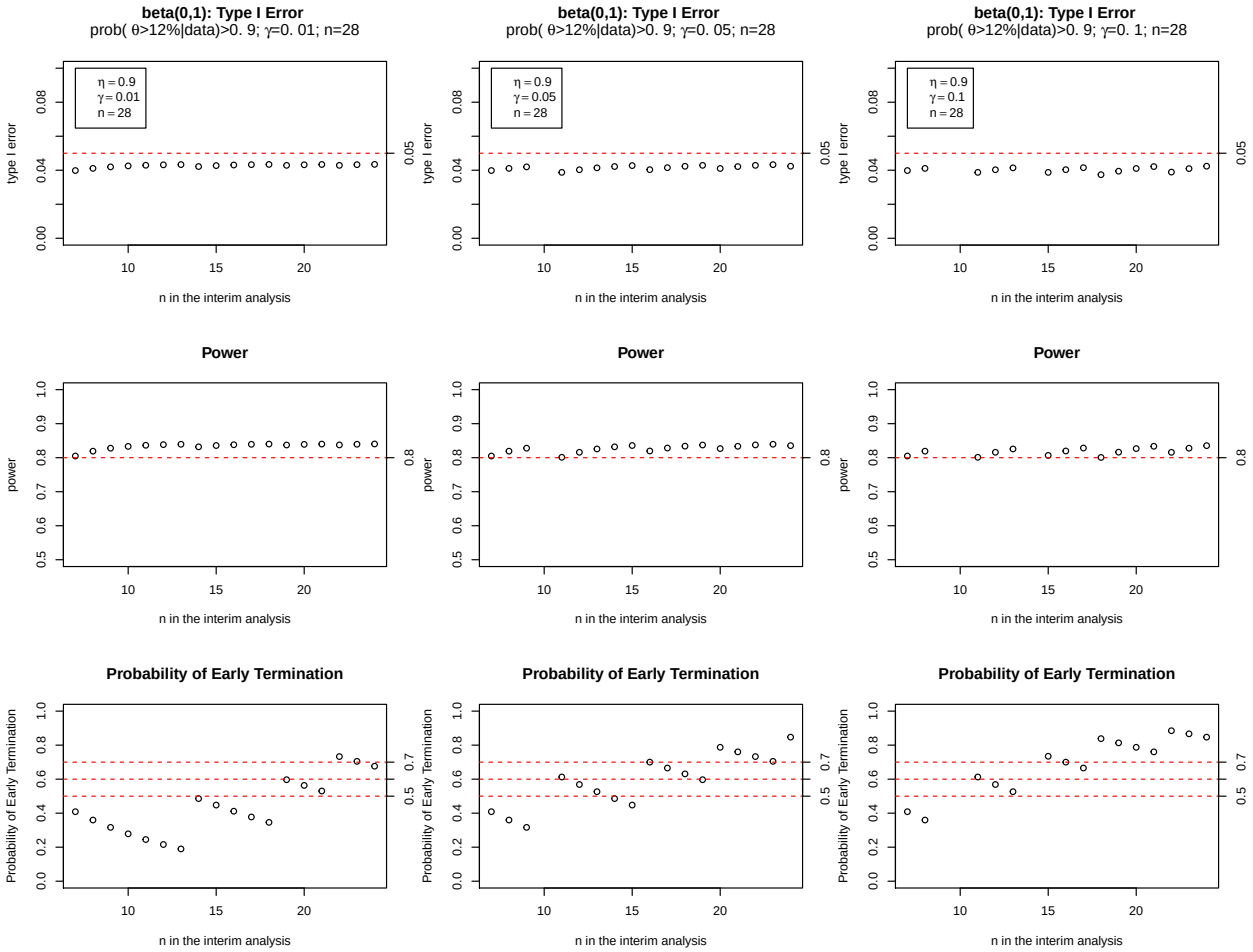

beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 01; n=27
η = 0.94
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=27
η = 0.94
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=27
η = 0.94
γ = 0.1
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

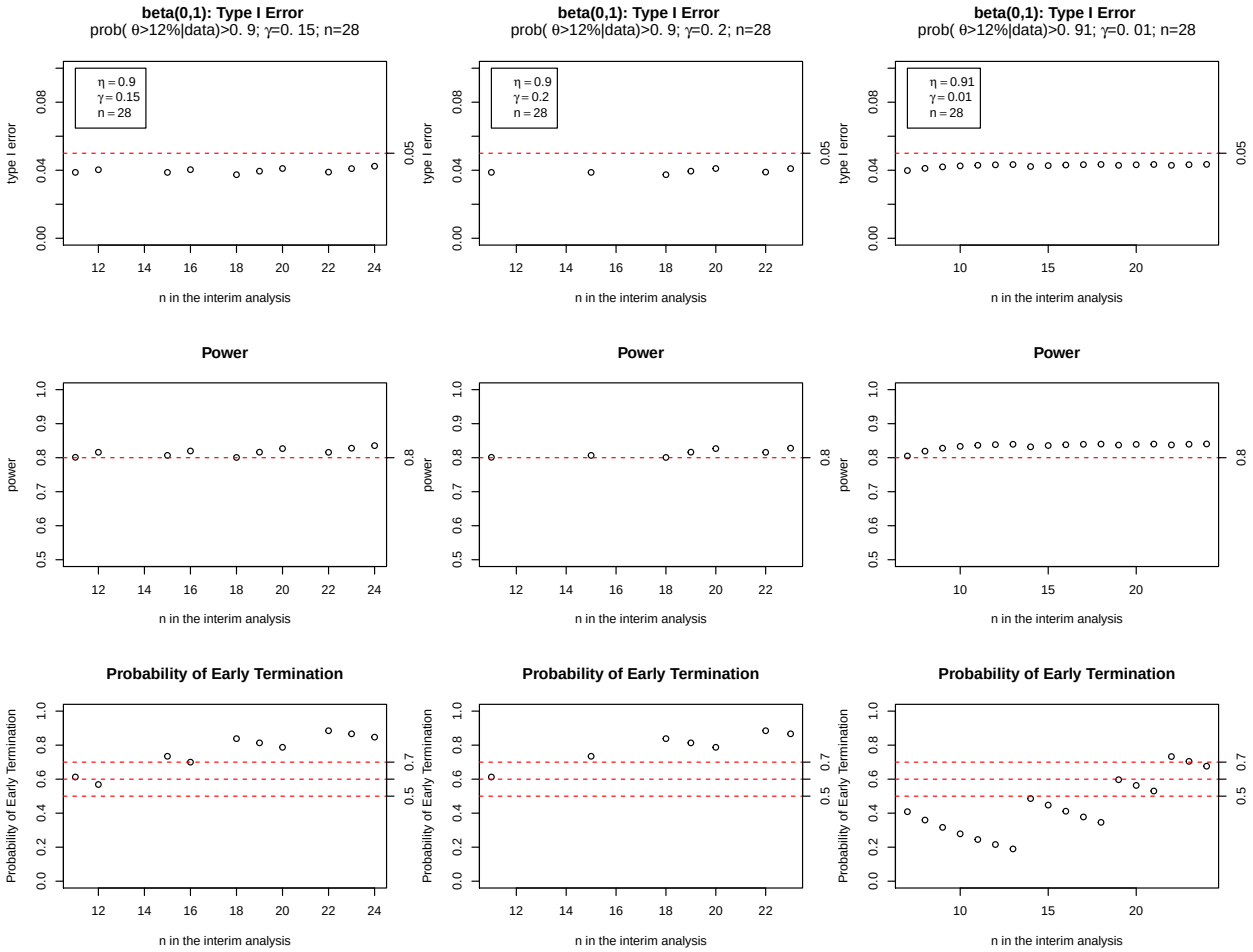

beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=27
η = 0.94
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=27
η = 0.94
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 01; n=27
η = 0.95
γ = 0.01
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

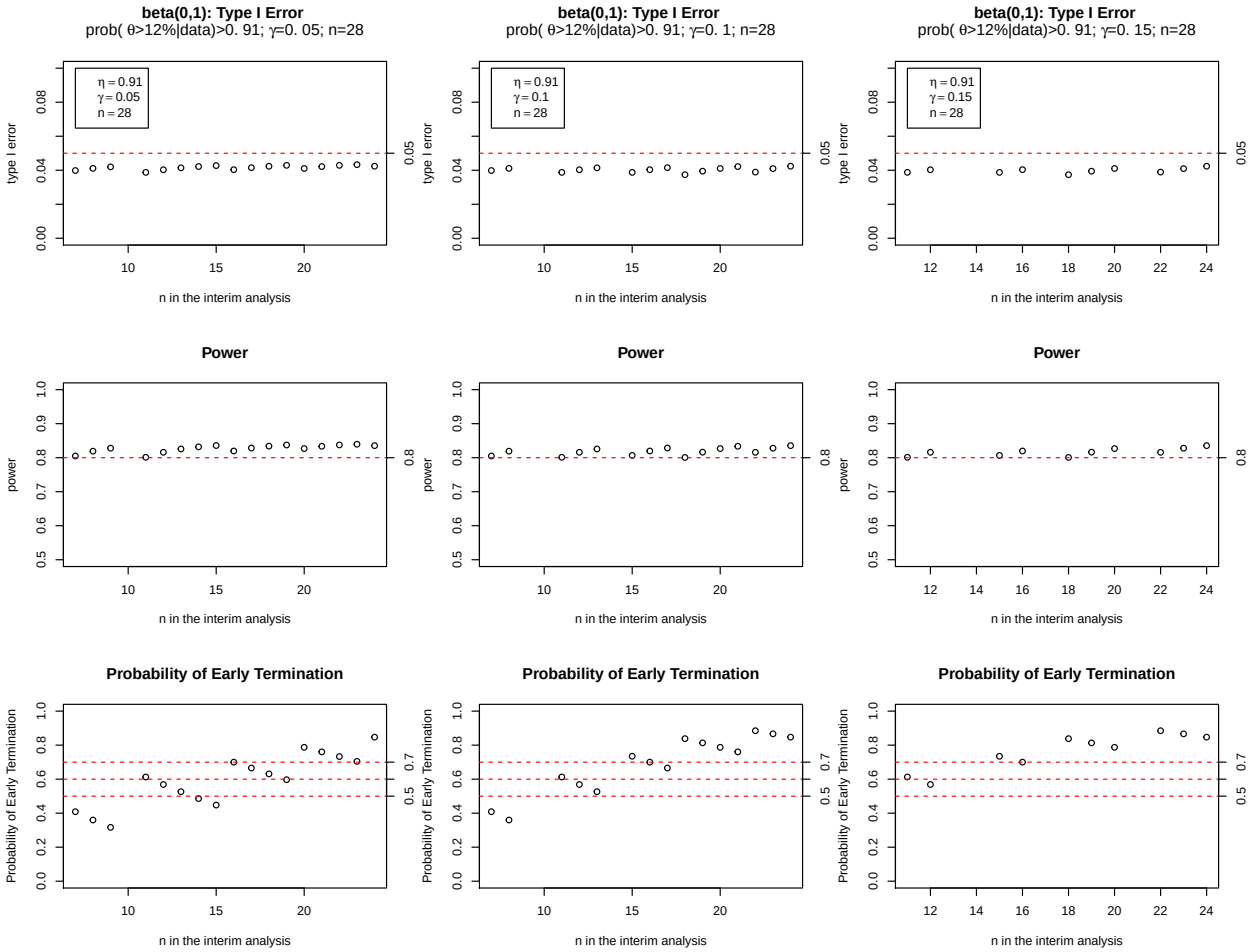

beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=27
η = 0.95
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=27
η = 0.95
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=27
η = 0.95
γ = 0.15
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

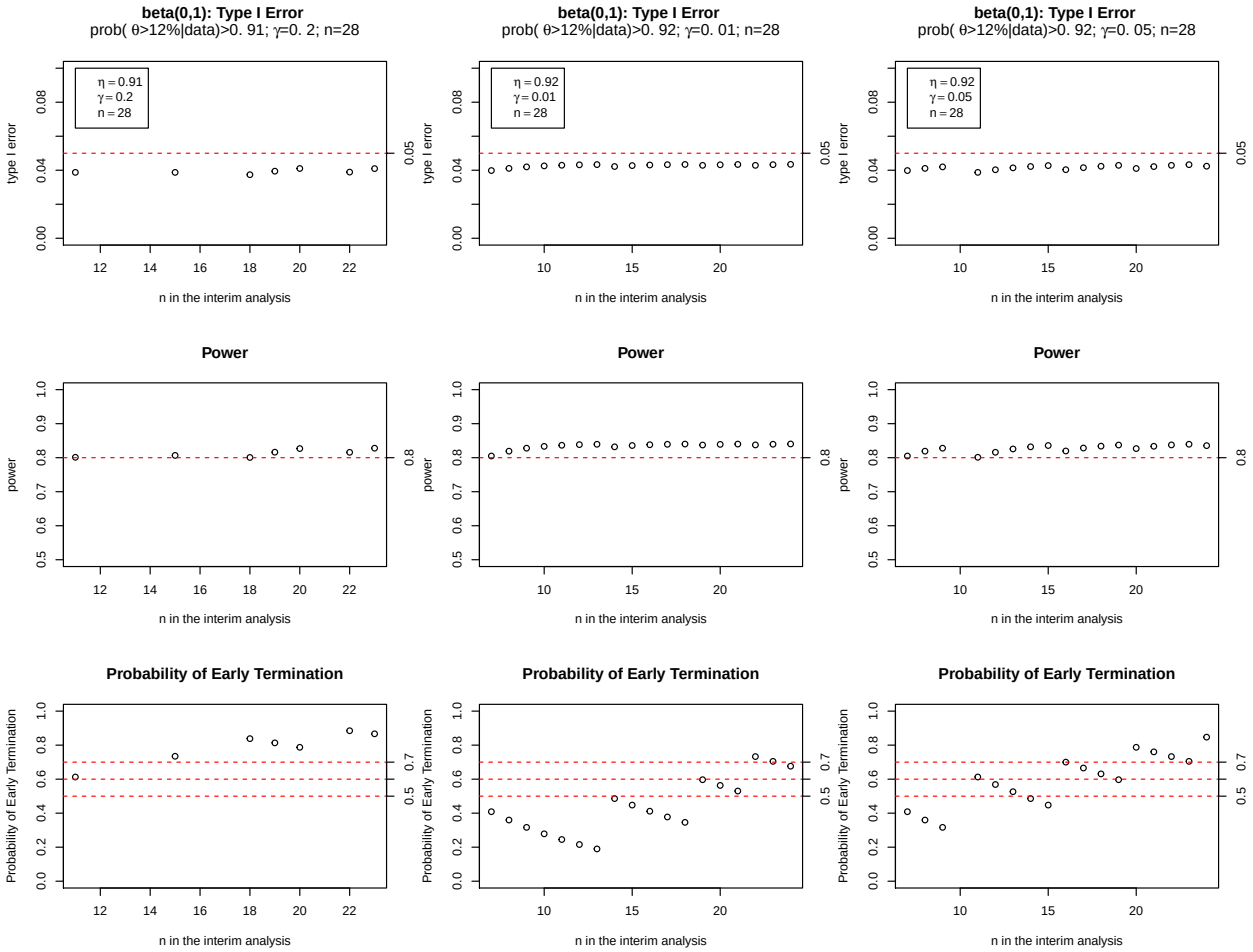

beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=27
η = 0.95
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 01; n=27
η = 0.96
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 05; n=27
η = 0.96
γ = 0.05
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

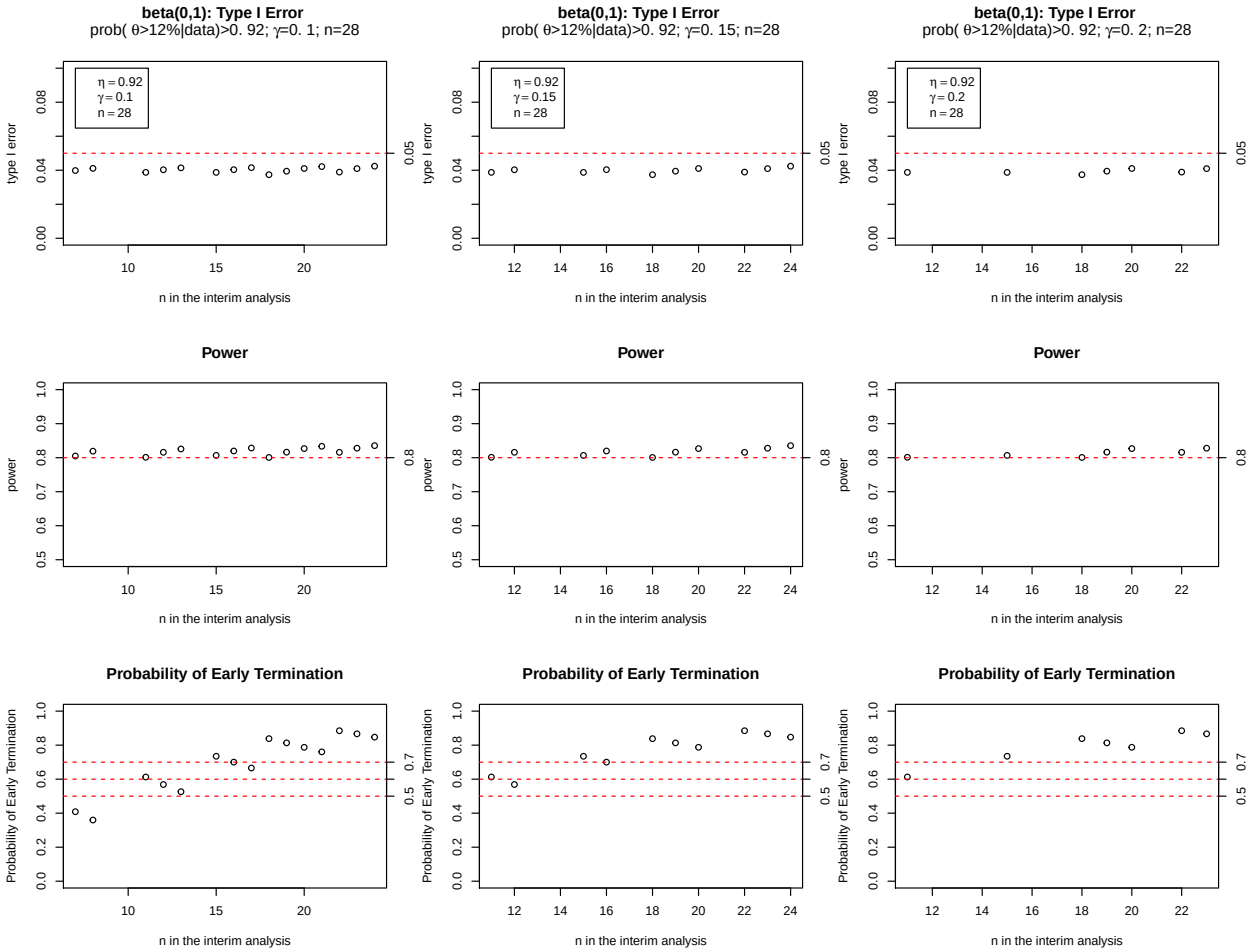

beta(0,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 1; n=27
η = 0.96
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 15; n=27
η = 0.96
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=27
η = 0.96
γ = 0.2
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

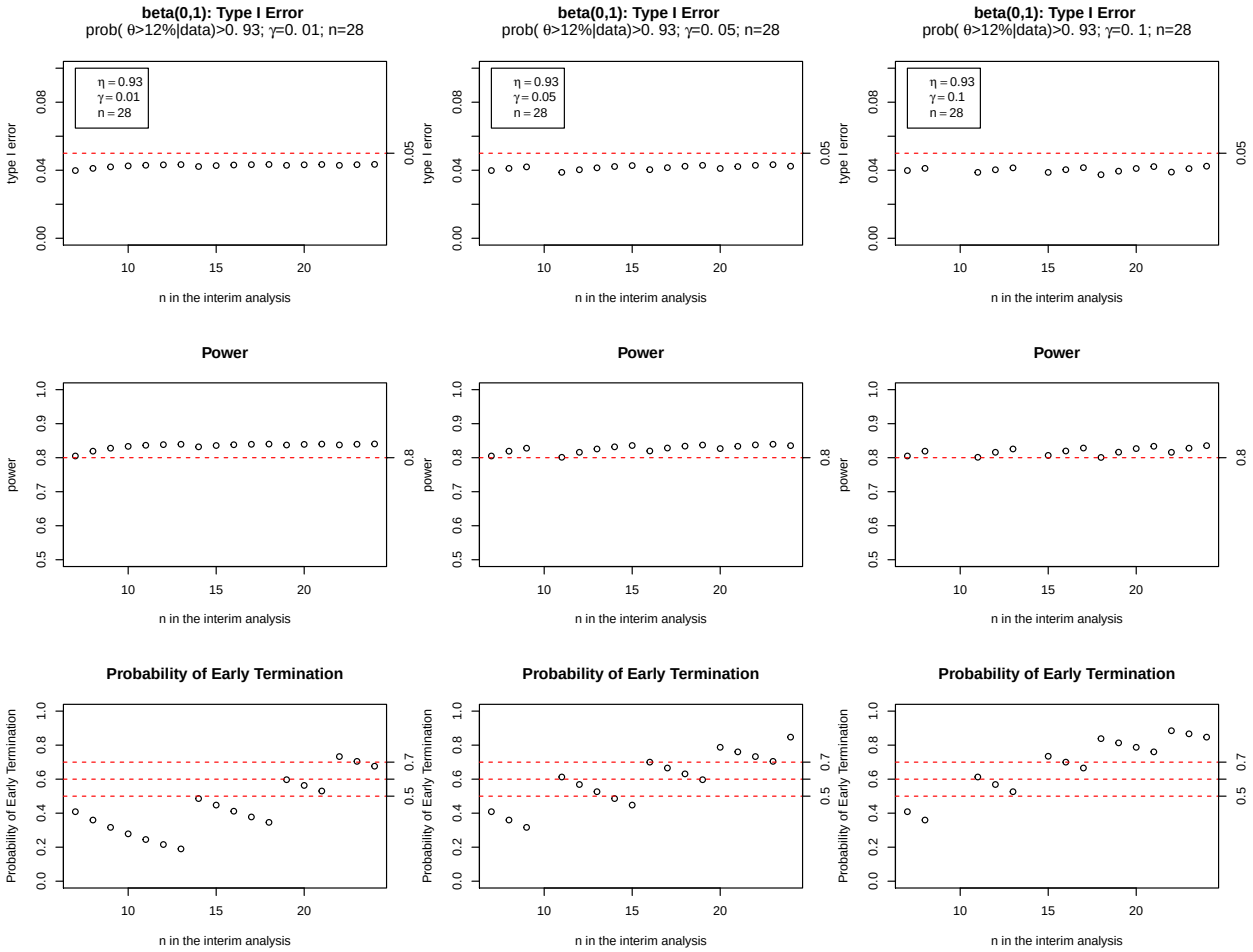

beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 01; n=28
η = 0.9
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 05; n=28
η = 0.9
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=28
η = 0.9
γ = 0.1
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

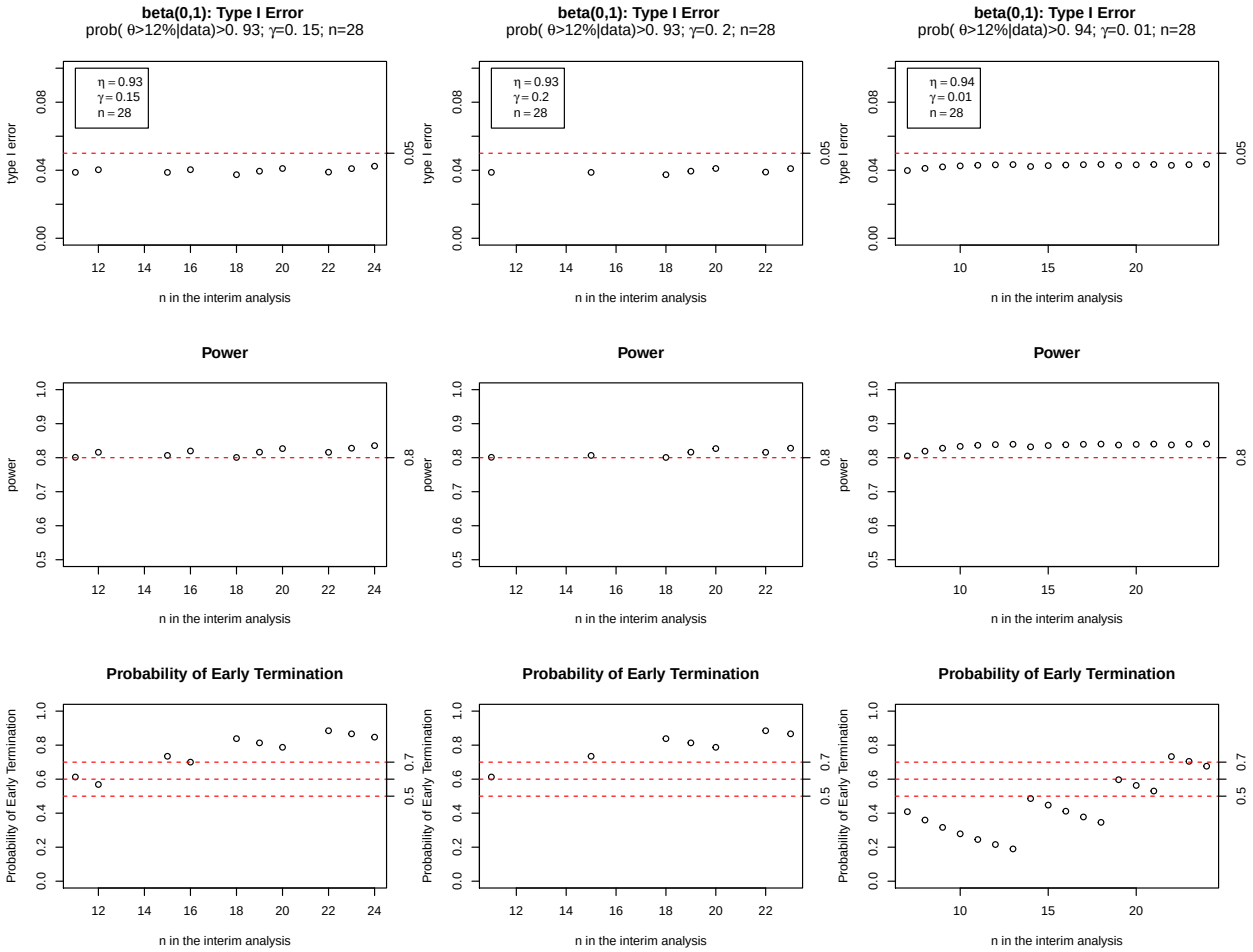

beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=28
η = 0.9
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 2; n=28
η = 0.9
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 01; n=28
η = 0.91
γ = 0.01
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

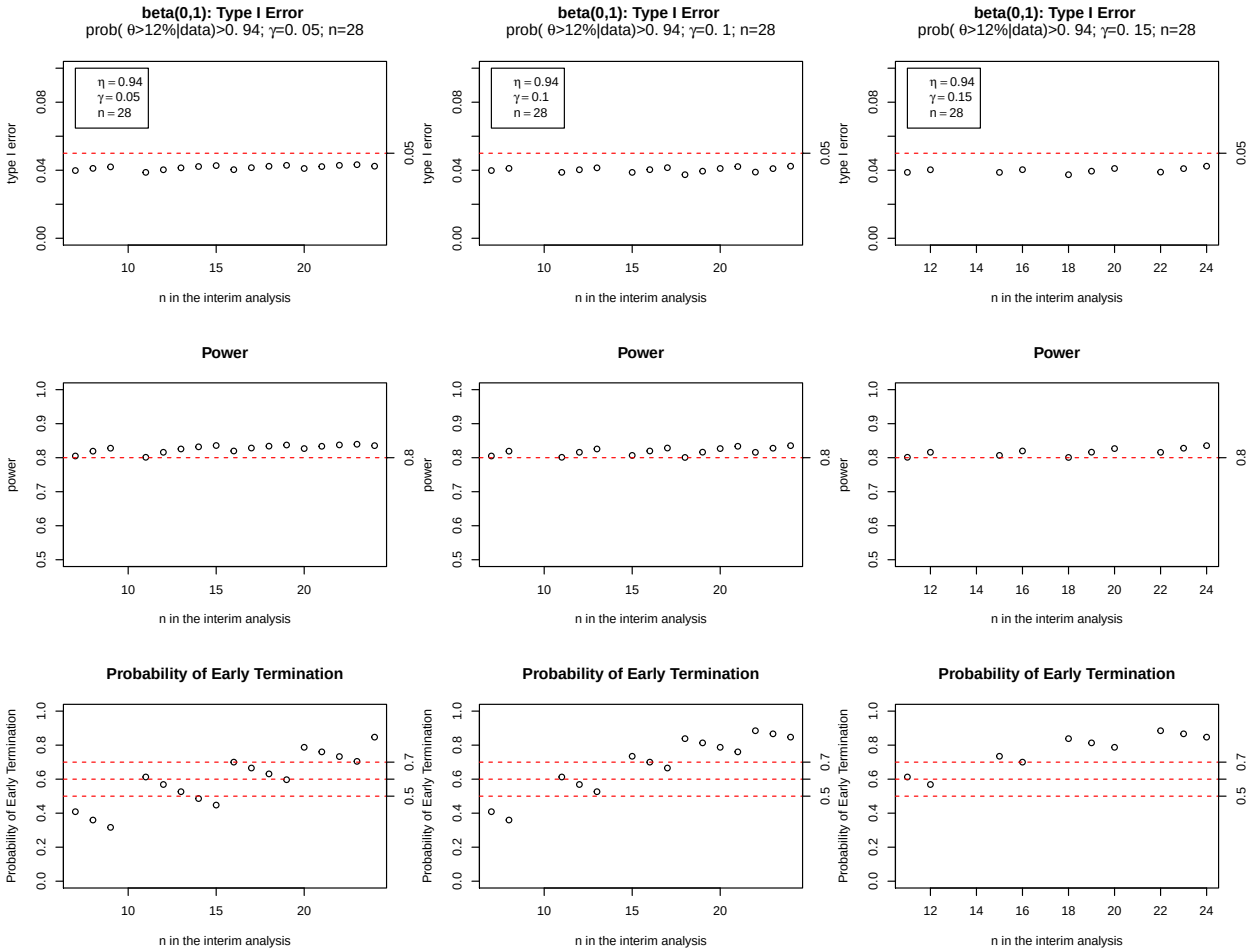

beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 05; n=28
η = 0.91
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=28
η = 0.91
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=28
η = 0.91
γ = 0.15
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

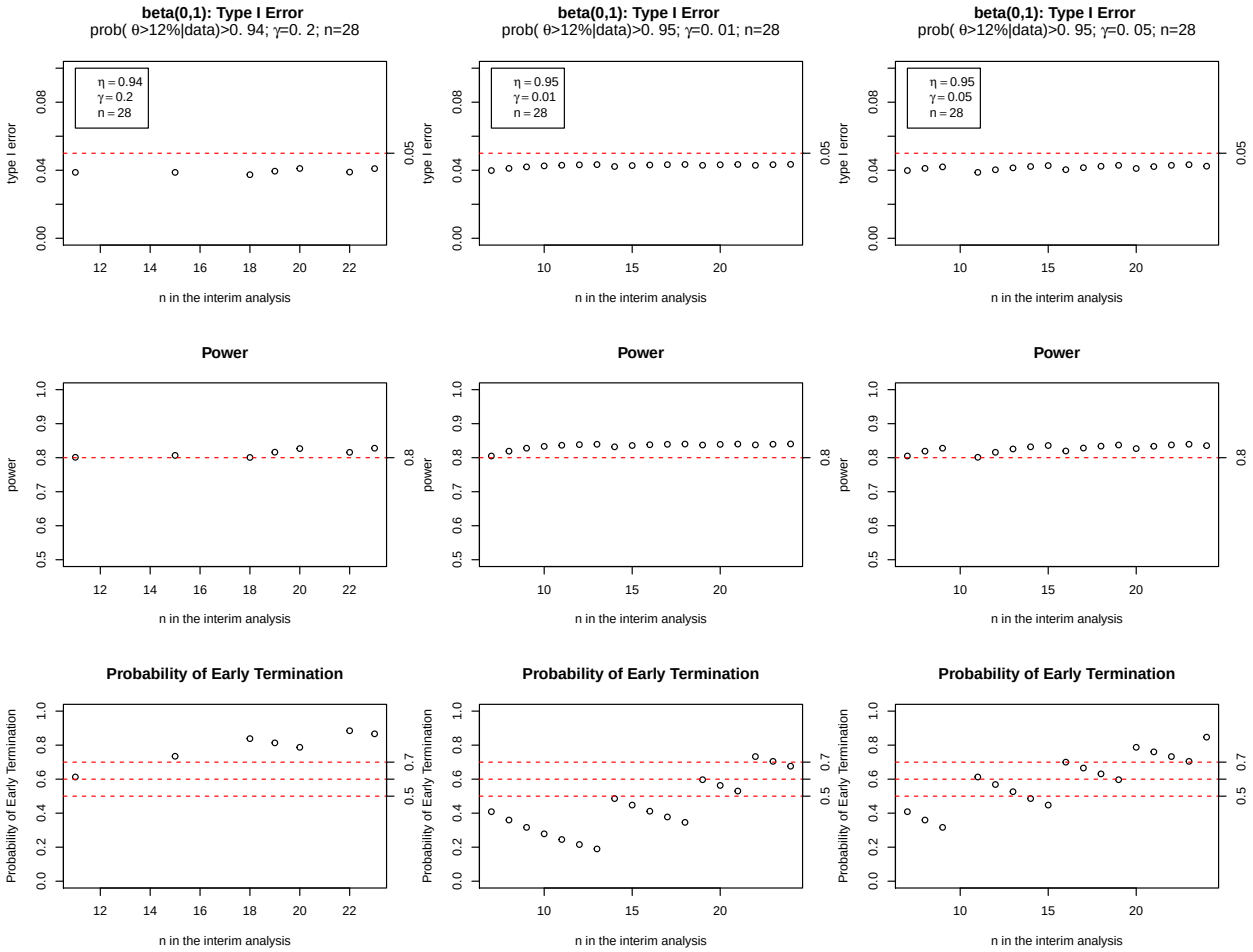

beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=28
η = 0.91
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=28
η = 0.92
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=28
η = 0.92
γ = 0.05
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

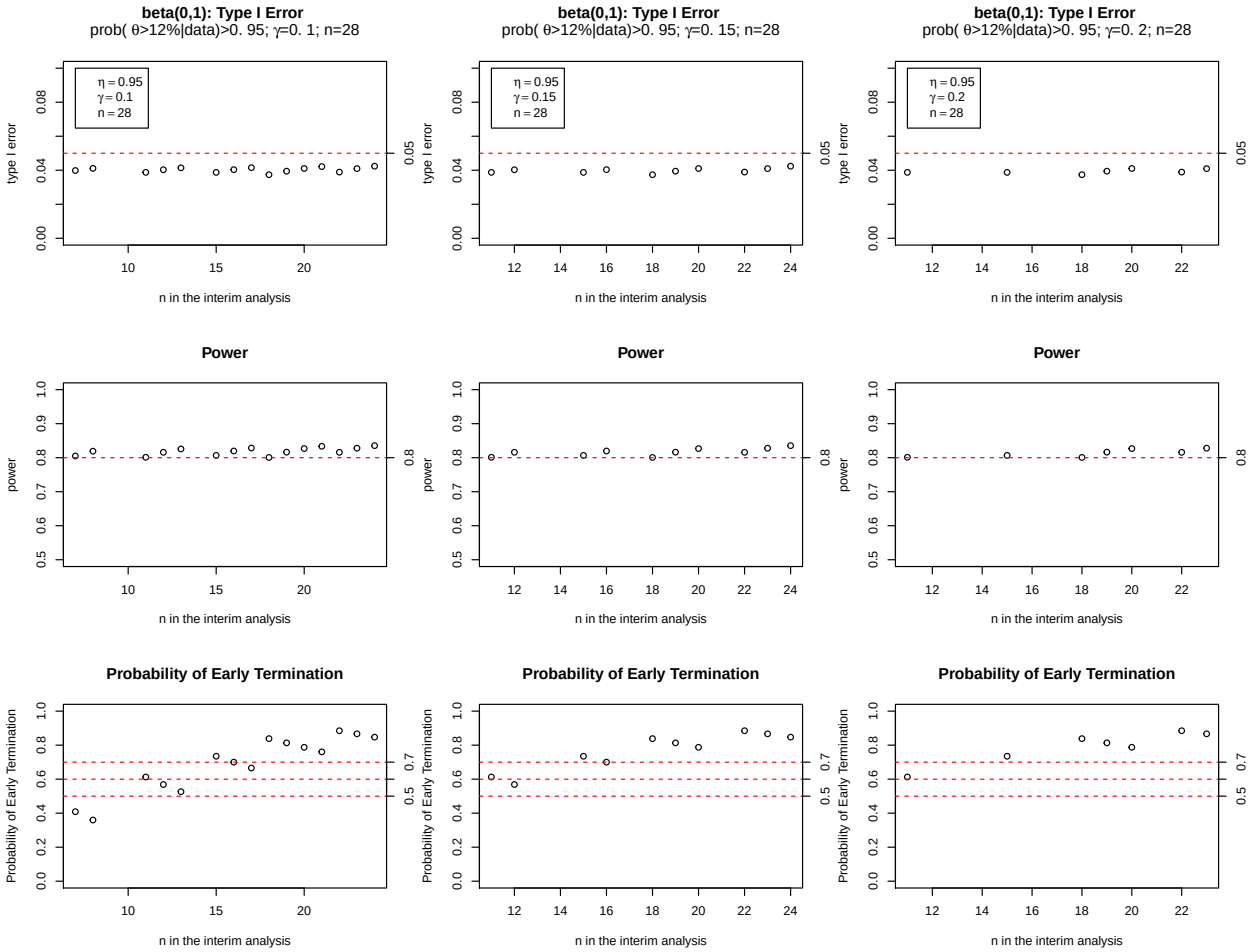

beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=28
η = 0.92
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=28
η = 0.92
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=28
η = 0.92
γ = 0.2
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

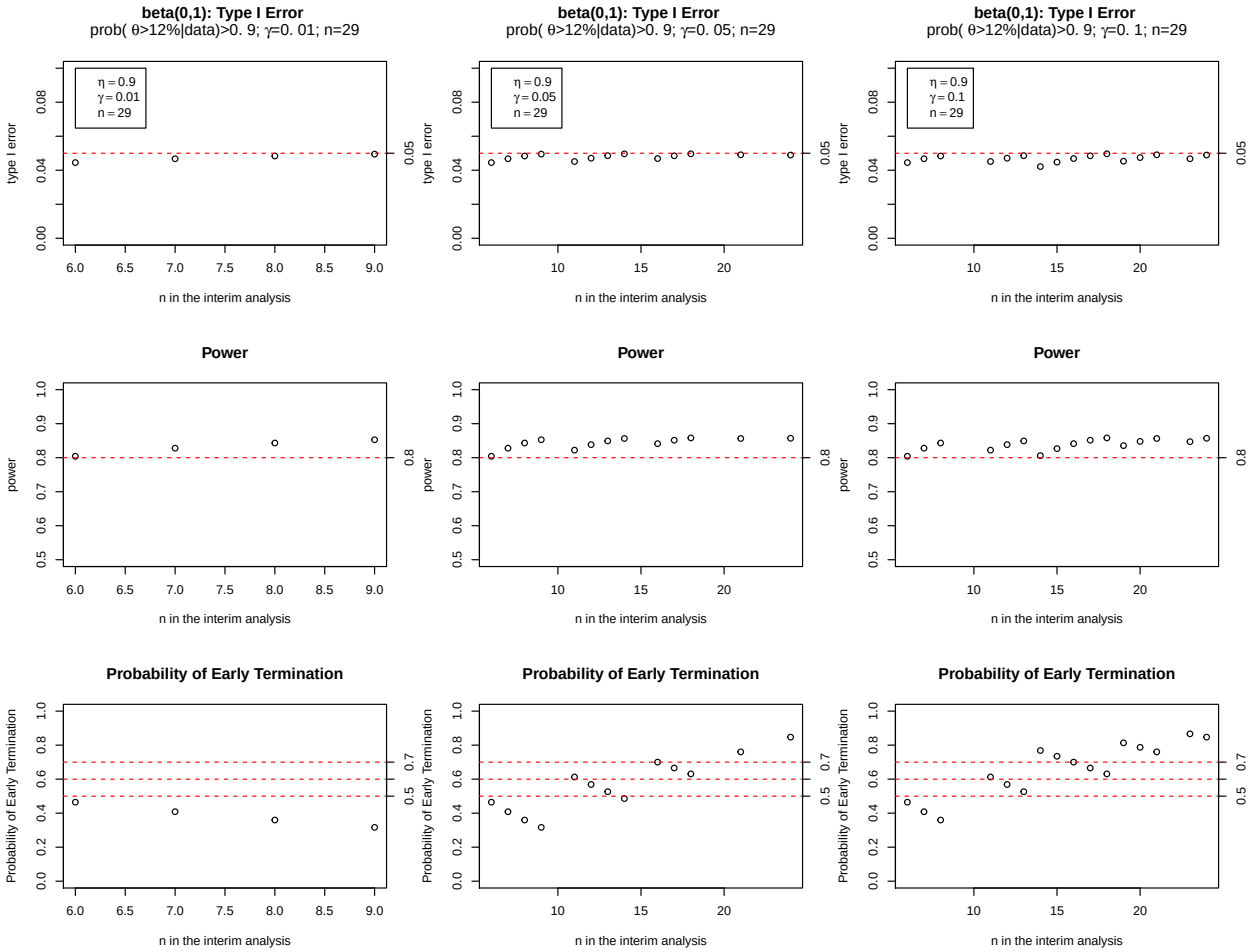

beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=28
η = 0.93
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=28
η = 0.93
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=28
η = 0.93
γ = 0.1
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

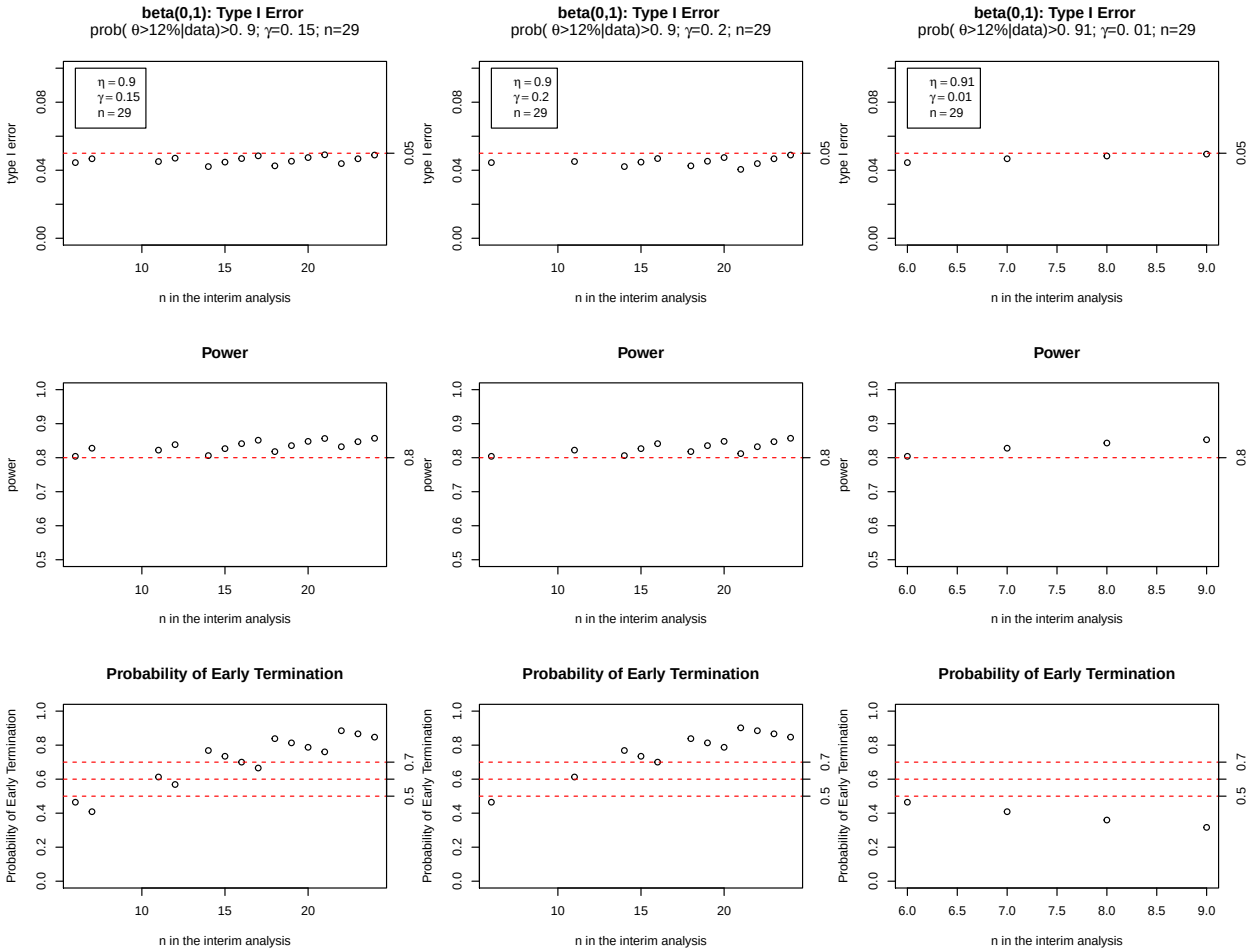

beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=28
η = 0.93
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=28
η = 0.93
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 01; n=28
η = 0.94
γ = 0.01
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

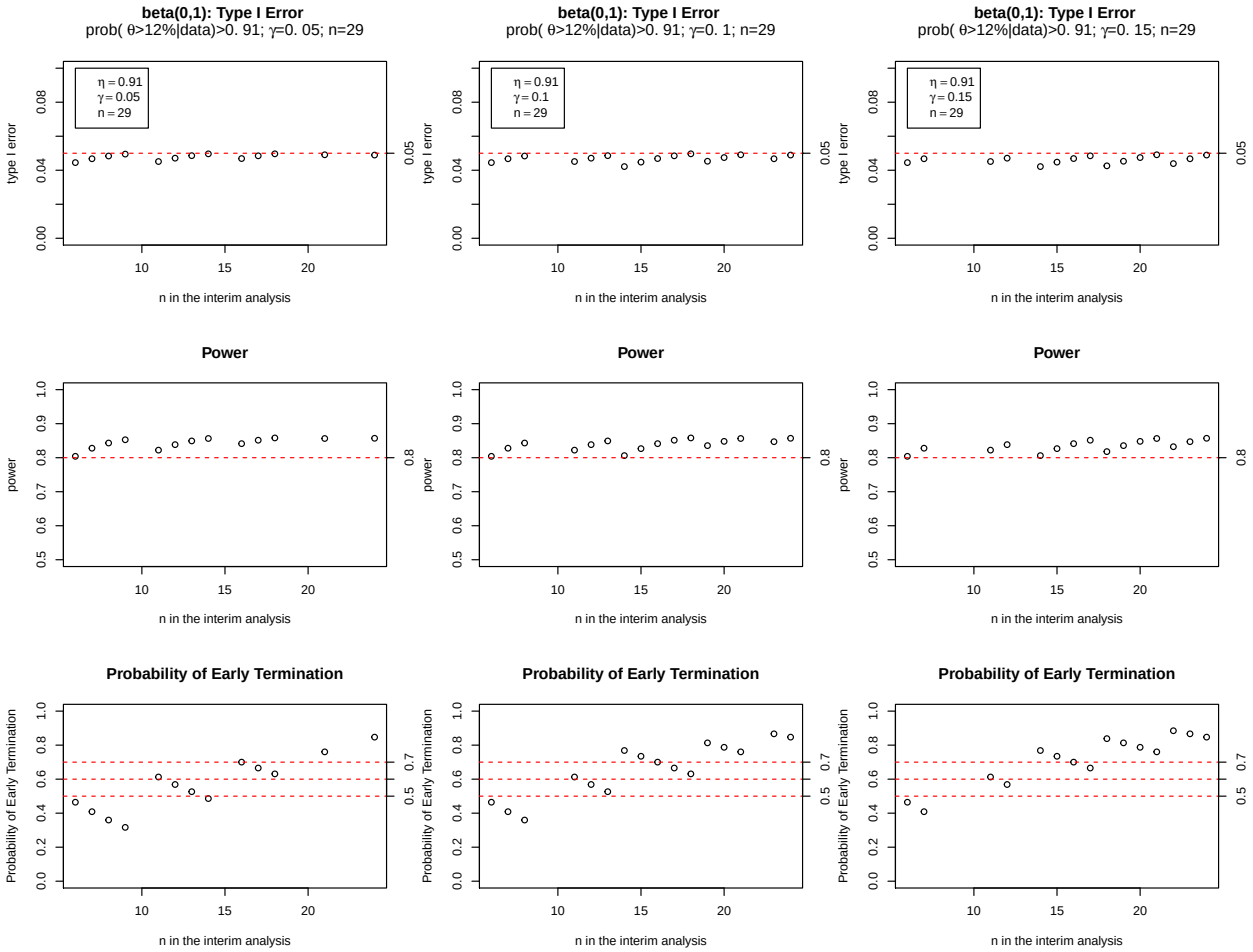

beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=28
η = 0.94
γ = 0.05
n = 28
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=28
η = 0.94
γ = 0.1
n = 28
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=28
η = 0.94
γ = 0.15
n = 28
type I error
Power
power
Probability of Early Termination
n in the interim analysis

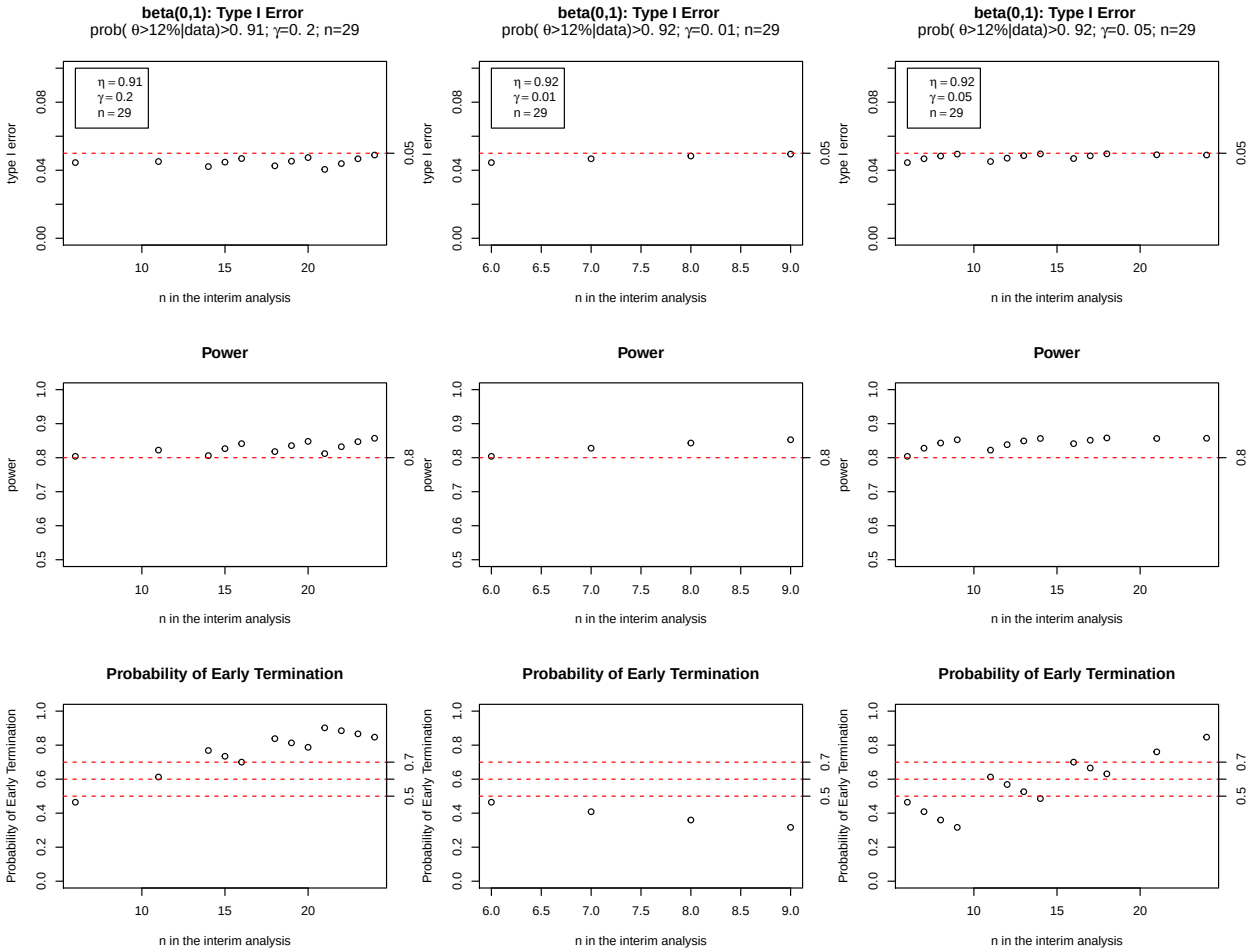

beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=28
η = 0.94
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 01; n=28
η = 0.95
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=28
η = 0.95
γ = 0.05
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

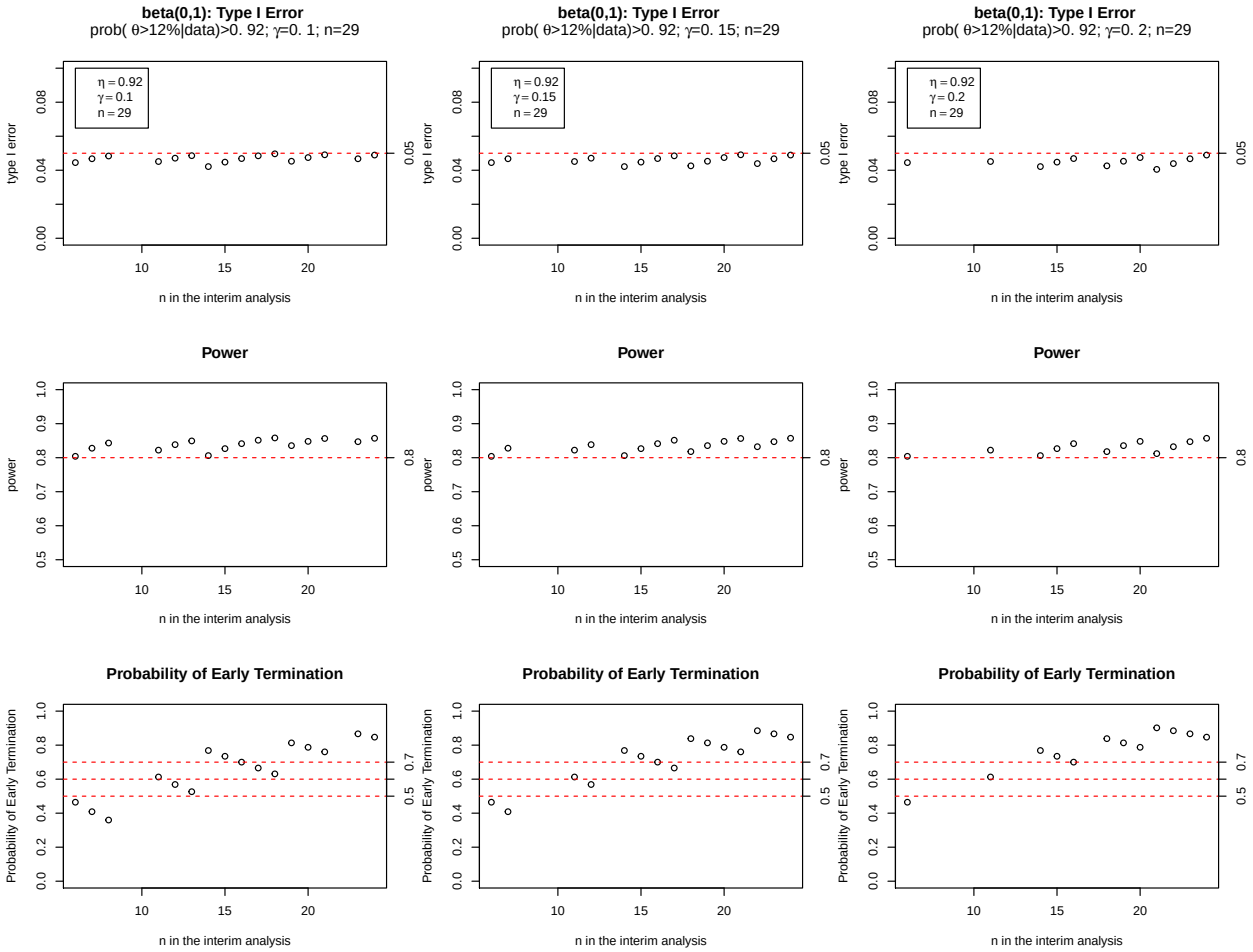

beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=28
η = 0.95
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=28
η = 0.95
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=28
η = 0.95
γ = 0.2
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

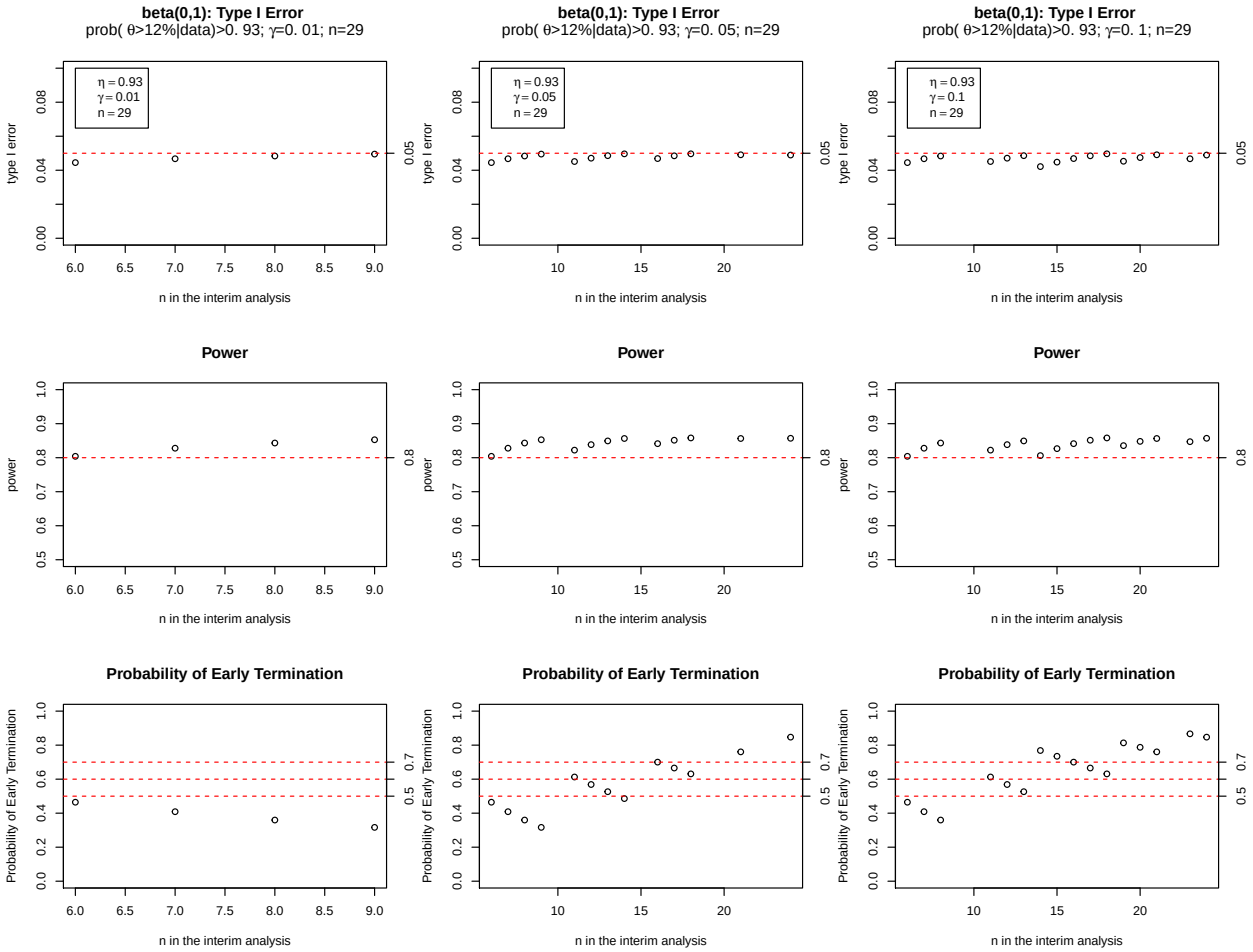

beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 01; n=29
η = 0.9
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 05; n=29
η = 0.9
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=29
η = 0.9
γ = 0.1
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

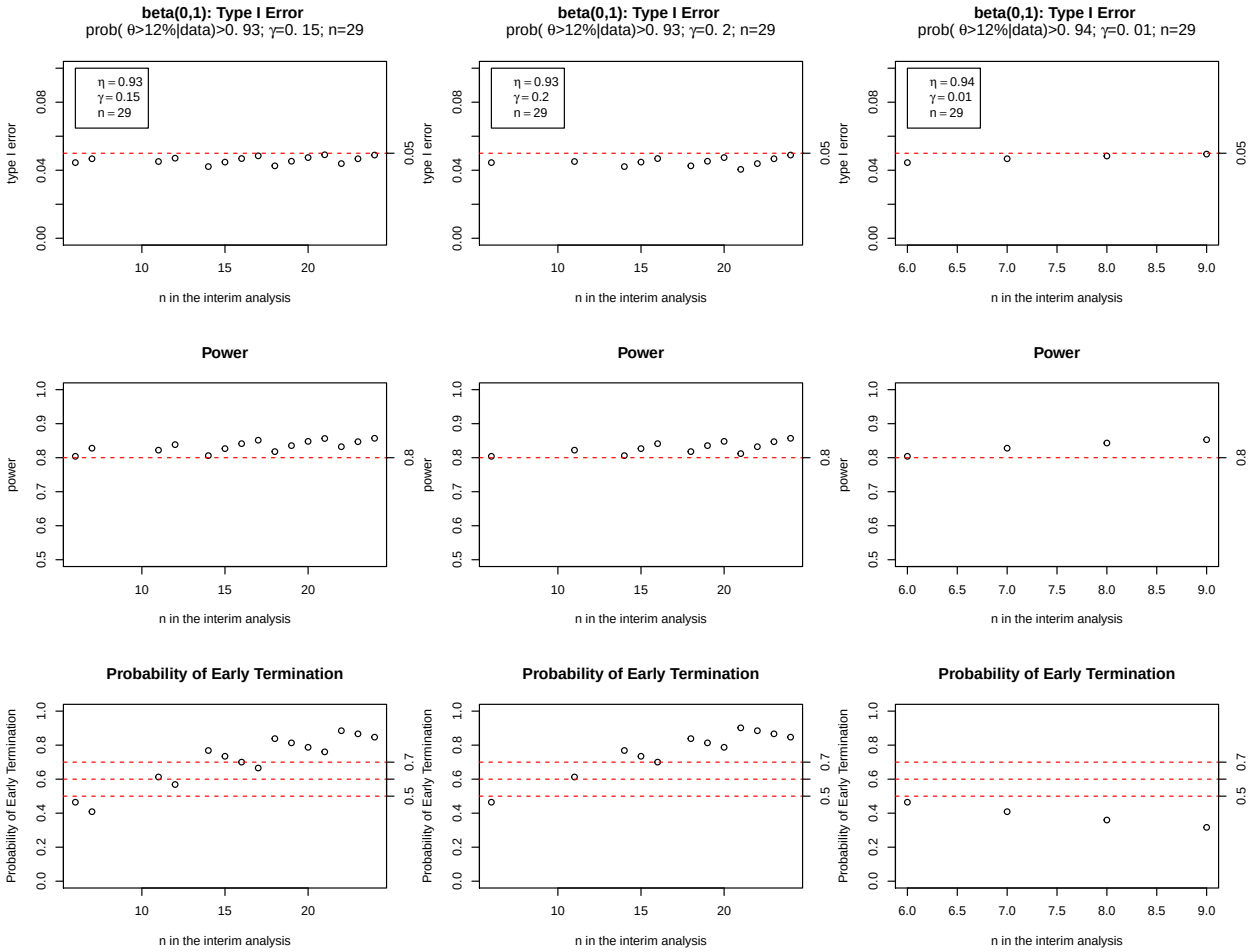

beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=29
η = 0.9
γ = 0.15
n = 29
beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 2; n=29
η = 0.9
γ = 0.2
n = 29
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 01; n=29
η = 0.91
γ = 0.01
n = 29
type I error
Power
power
Probability of Early Termination
n in the interim analysis

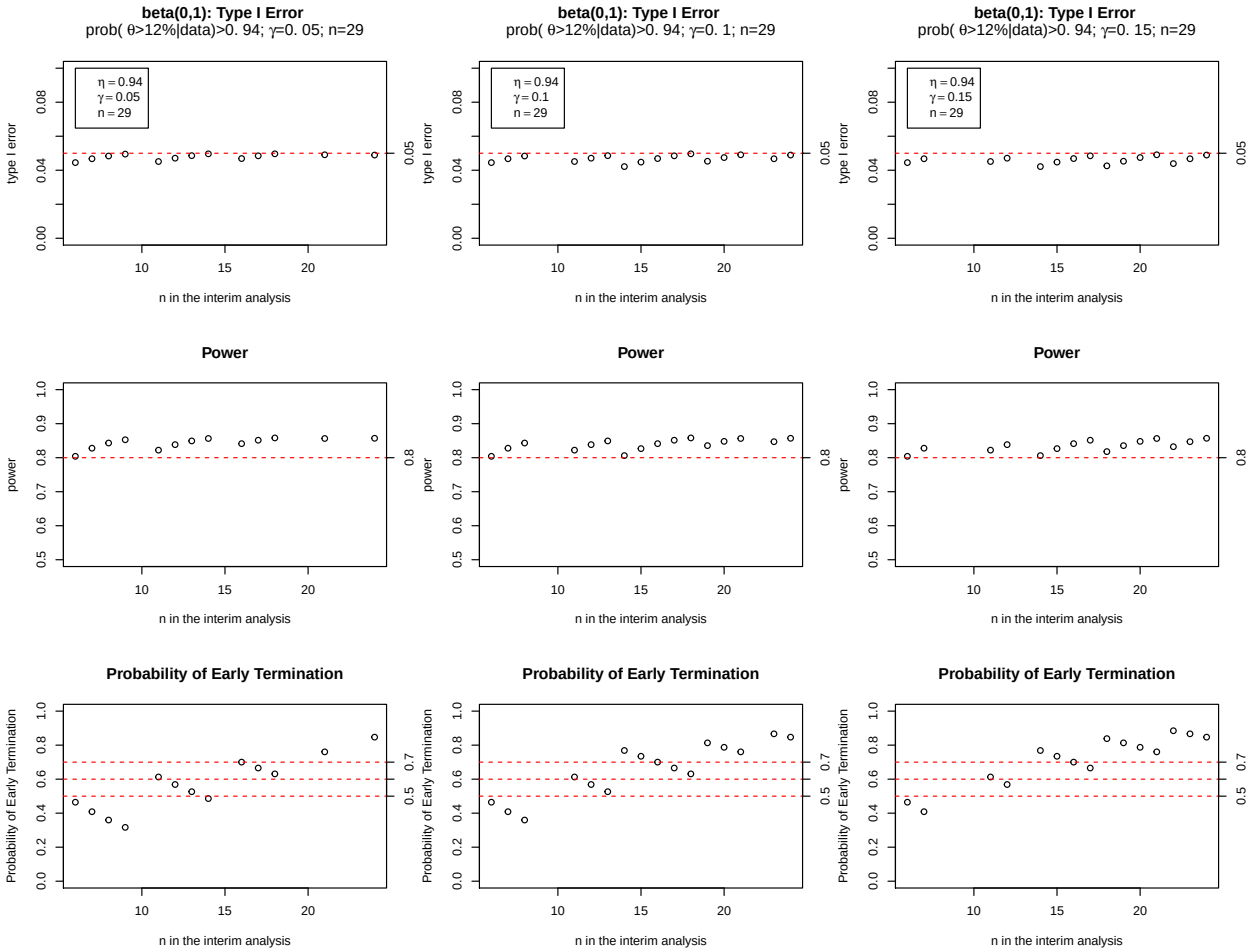

beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 05; n=29
η = 0.91
γ = 0.05
n = 29
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=29
η = 0.91
γ = 0.1
n = 29
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=29
η = 0.91
γ = 0.15
n = 29
type I error
Power
power
Probability of Early Termination
n in the interim analysis

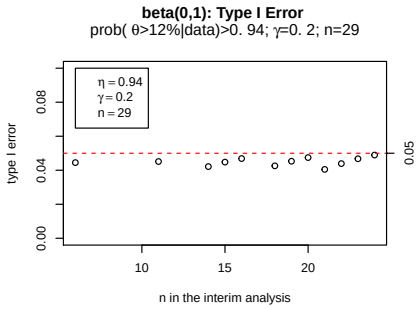

beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=29
η = 0.91
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=29
η = 0.92
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=29
η = 0.92
γ = 0.05
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

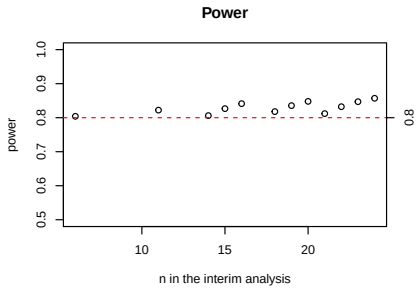

beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=29
η = 0.92
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=29
η = 0.92
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=29
η = 0.92
γ = 0.2
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

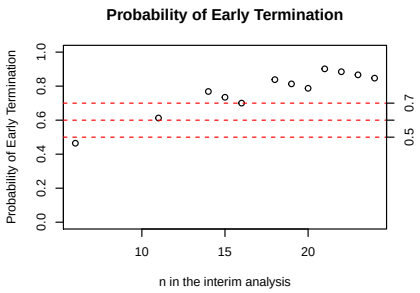

beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=29
η = 0.93
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=29
η = 0.93
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=29
η = 0.93
γ = 0.1
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

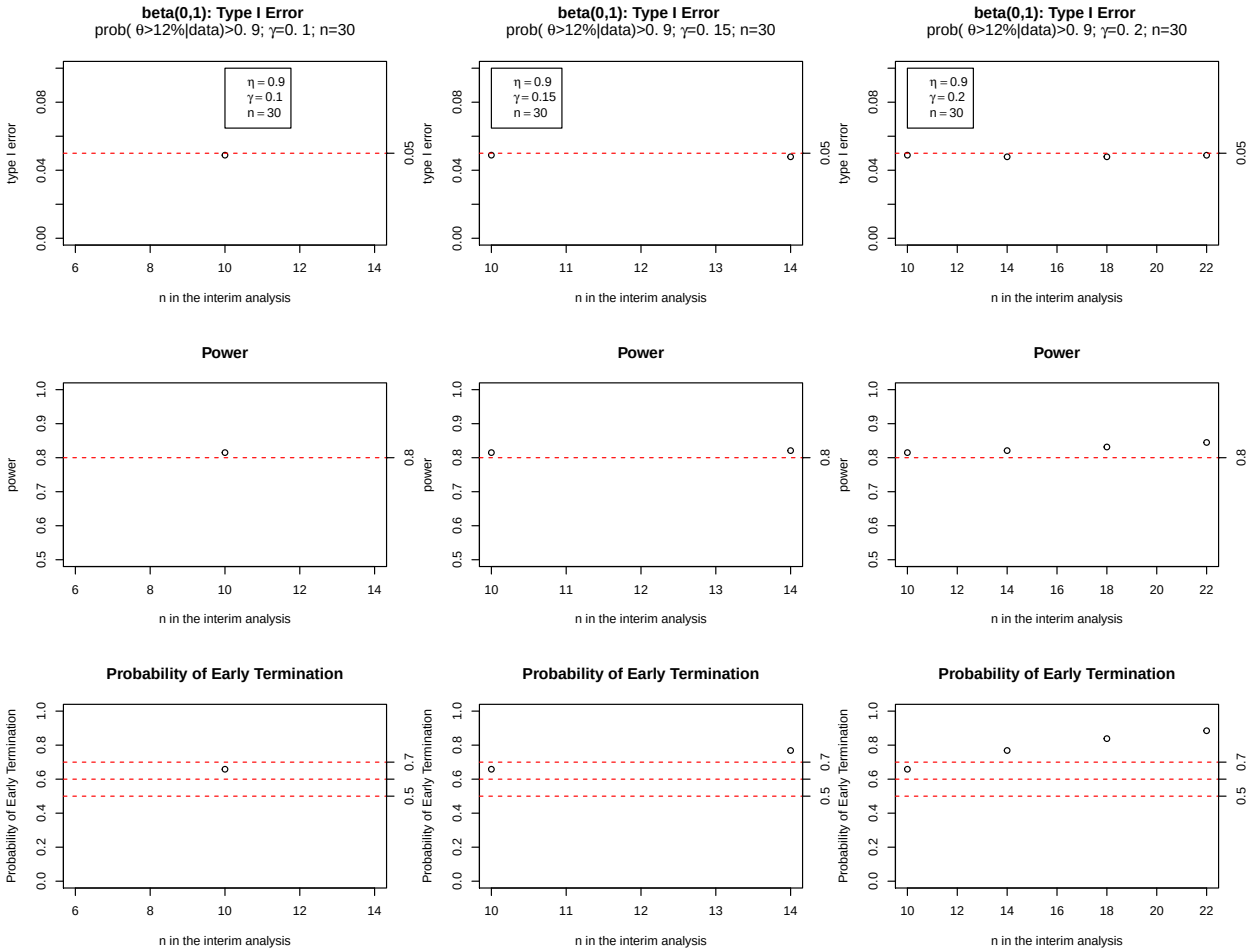

beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=29
η = 0.93
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=29
η = 0.93
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 01; n=29
η = 0.94
γ = 0.01
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

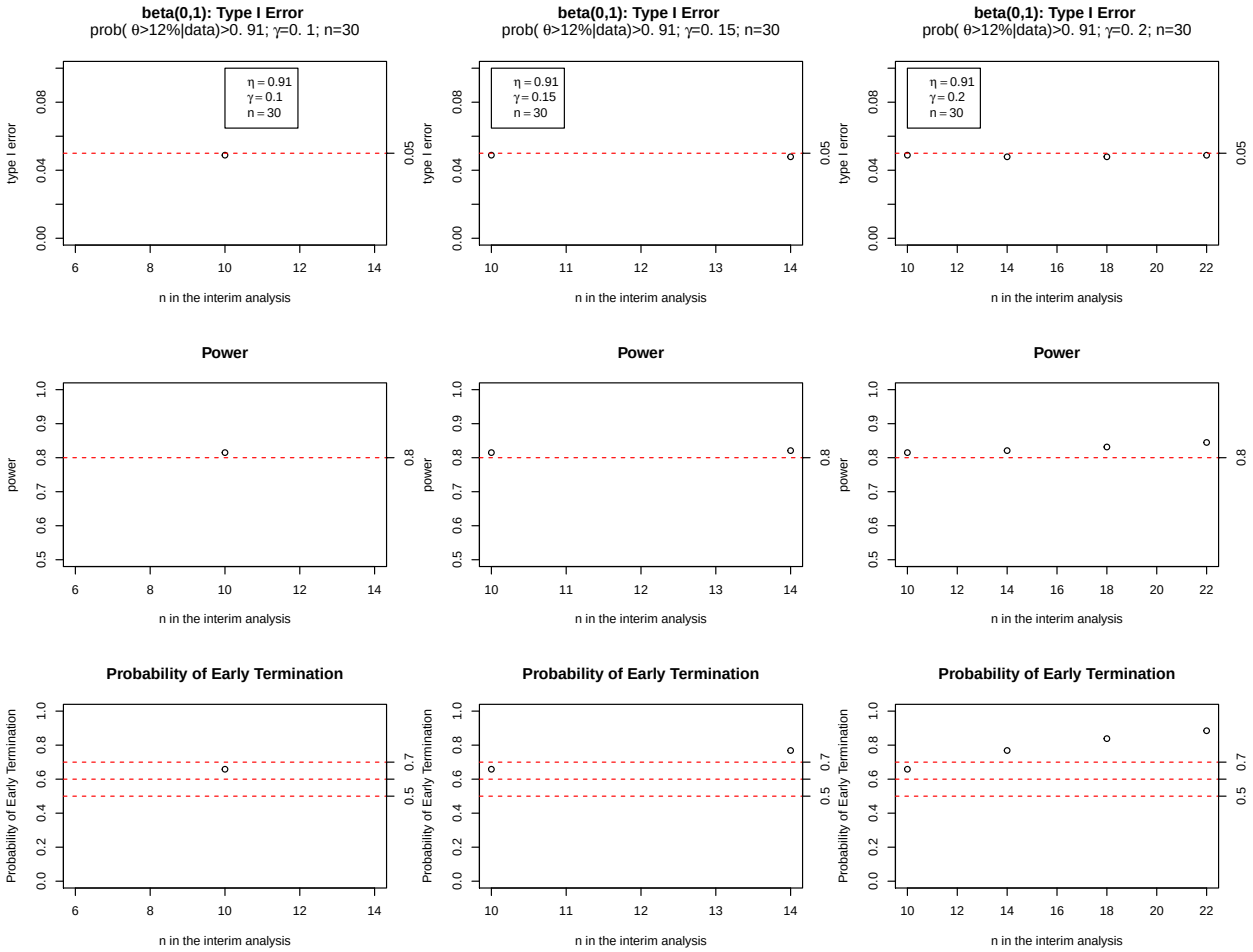

beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=29
η = 0.94
γ = 0.05
n = 29
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=29
η = 0.94
γ = 0.1
n = 29
beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=29
η = 0.94
γ = 0.15
n = 29
type I error
Power
power
Probability of Early Termination
n in the interim analysis

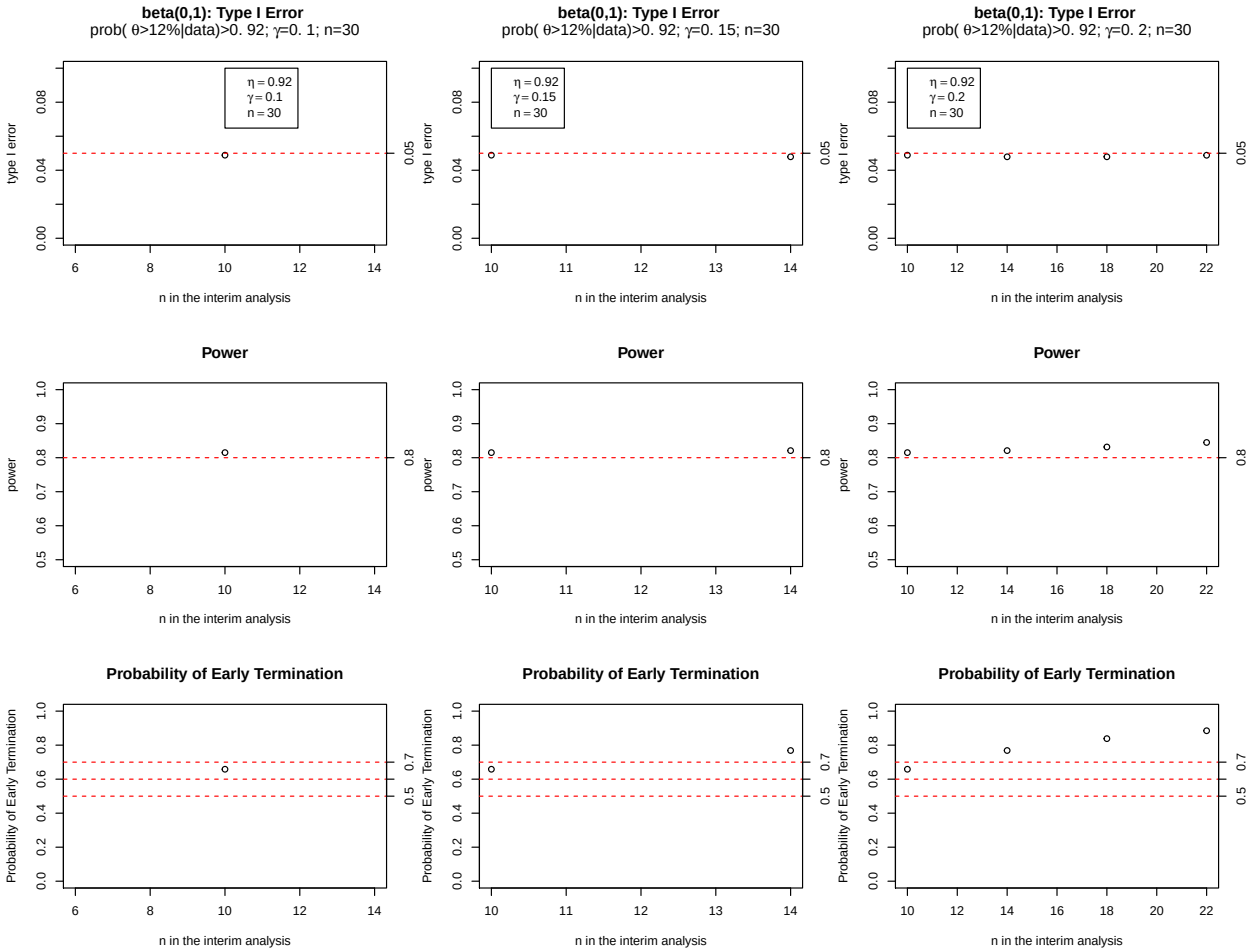

beta(0,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=29
η = 0.94
γ = 0.2
n = 29
type I error
0.00
0.04
0.08
0.05
10
15
20
n in the interim analysis

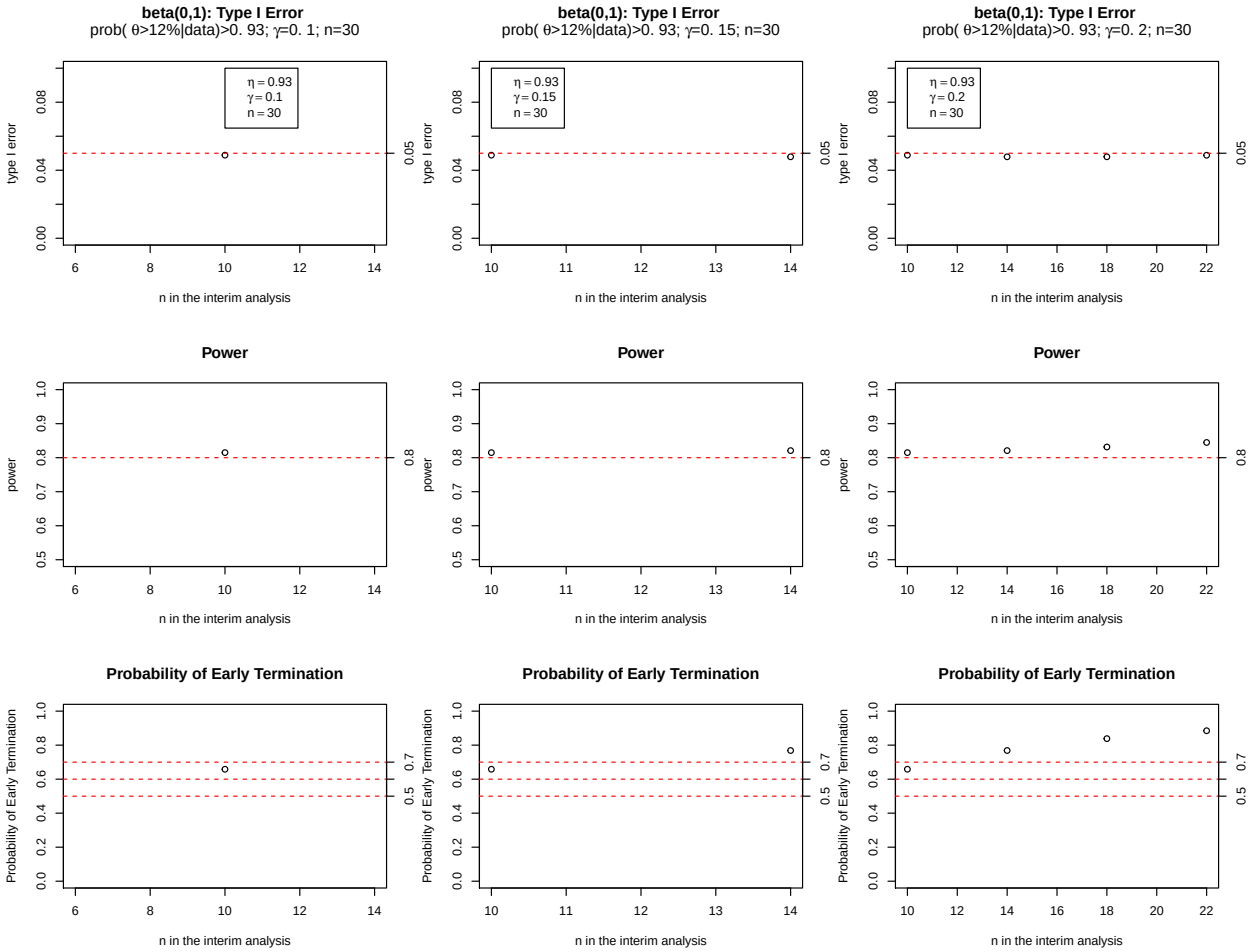

Power
power
0.5
0.6
0.7
0.8
0.9
1.0
0.8
10
15
20
n in the interim analysis


Probability of Early Termination
Probability of Early Termination
0.0
0.2
0.4
0.6
0.8
1.0
0.7
0.5
10
15
20
n in the interim analysis

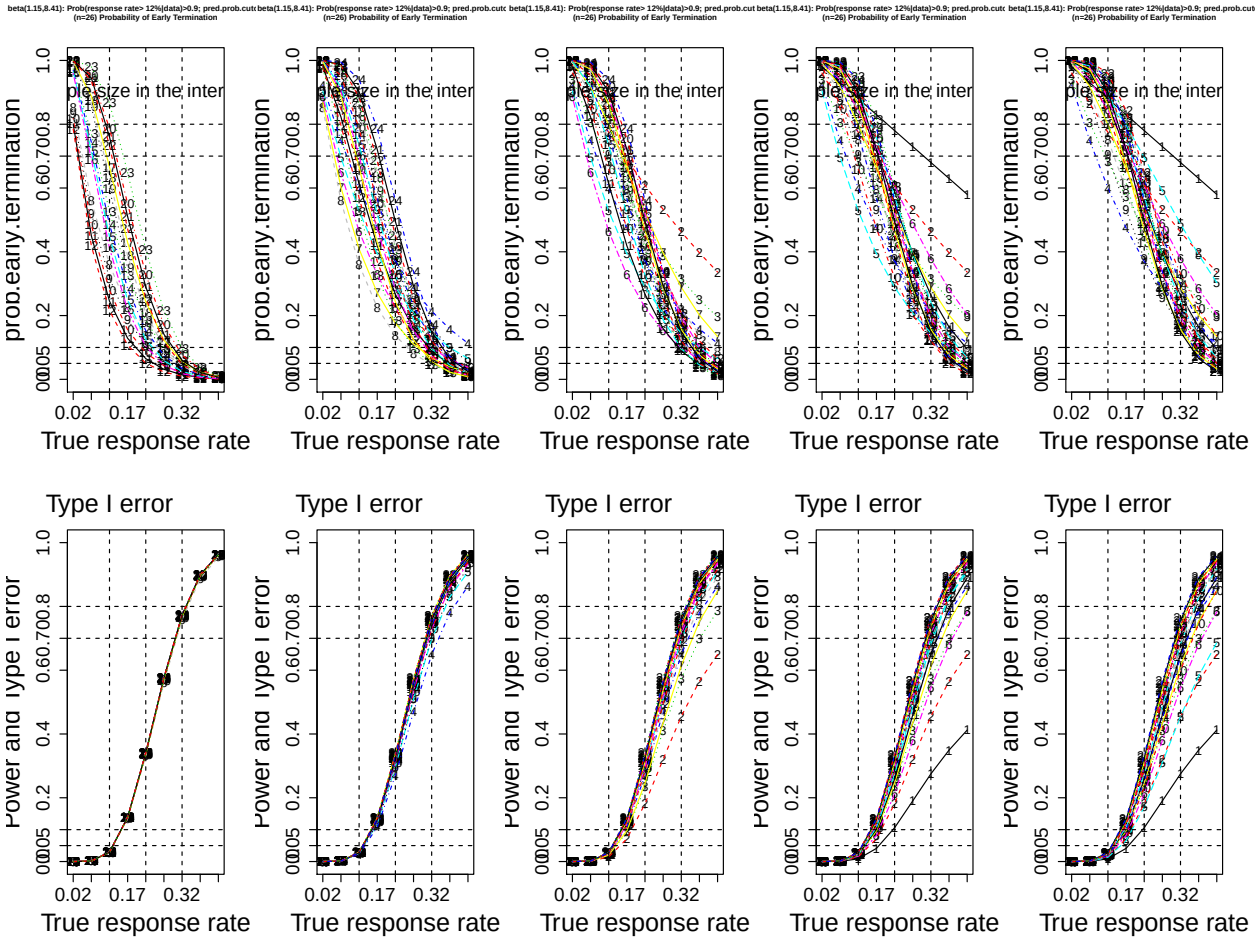

beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=30
η = 0.9
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=30
η = 0.9
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 2; n=30
η = 0.9
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

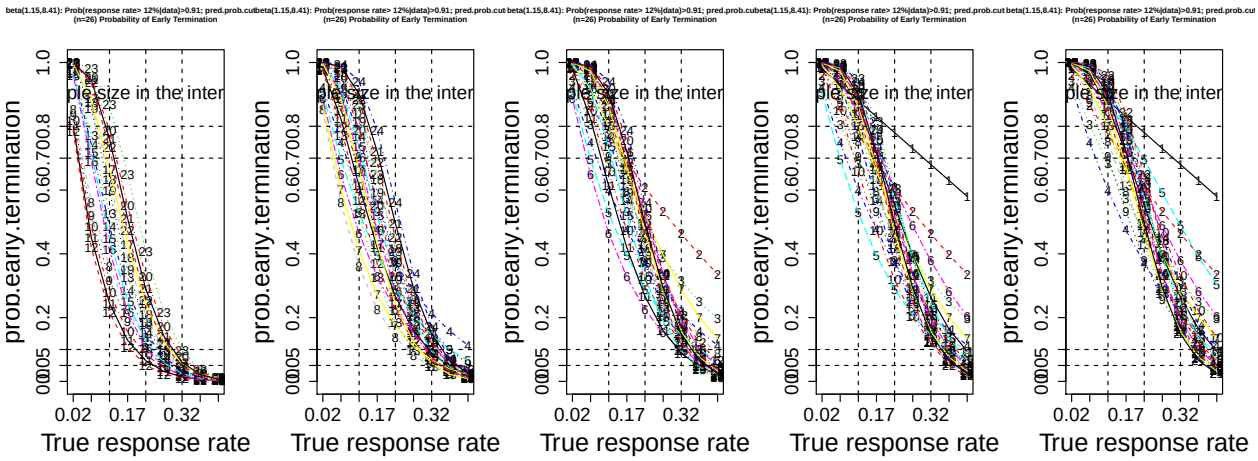

beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=30
η = 0.91
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=30
η = 0.91
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=30
η = 0.91
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

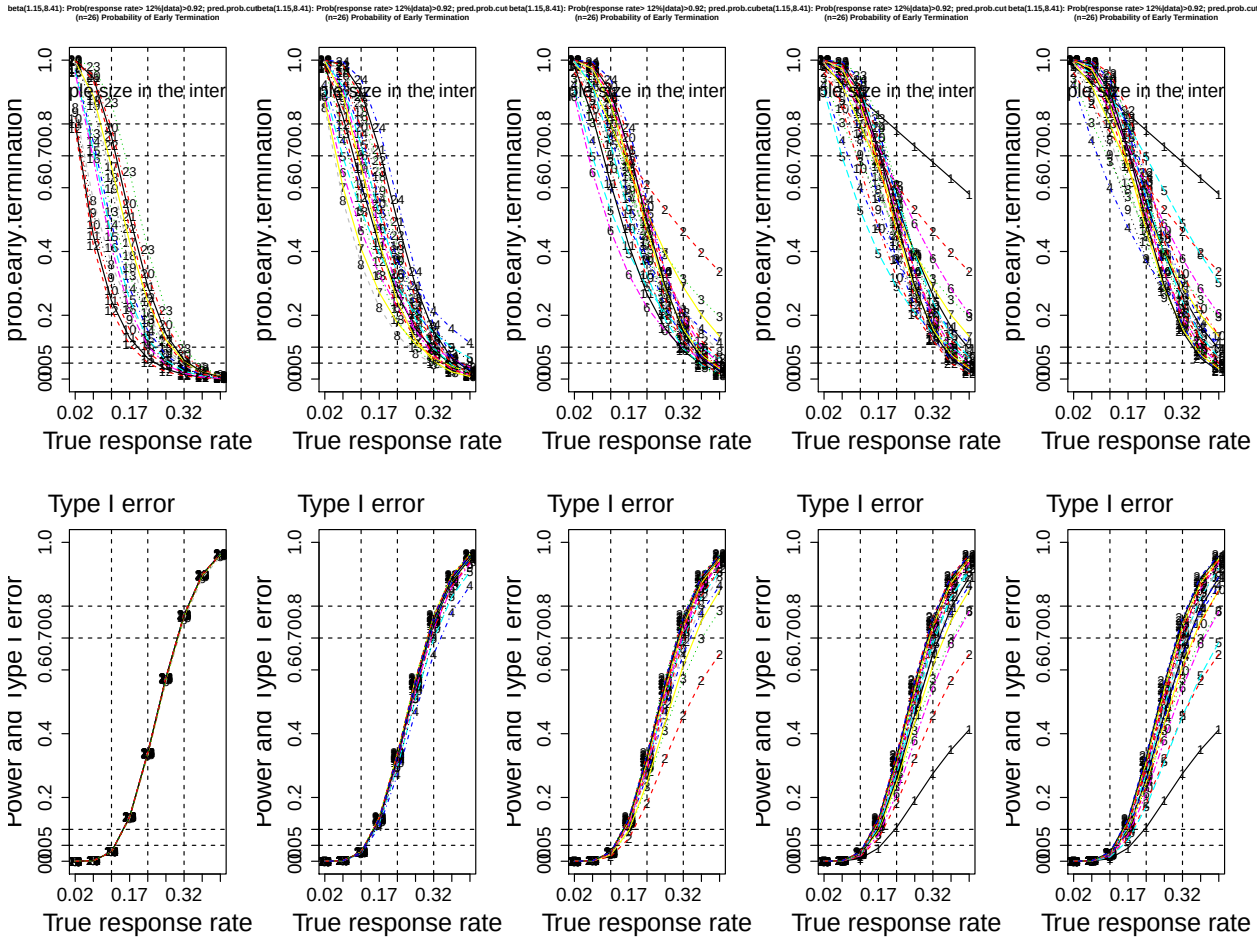

beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=30
η = 0.92
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=30
η = 0.92
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=30
η = 0.92
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

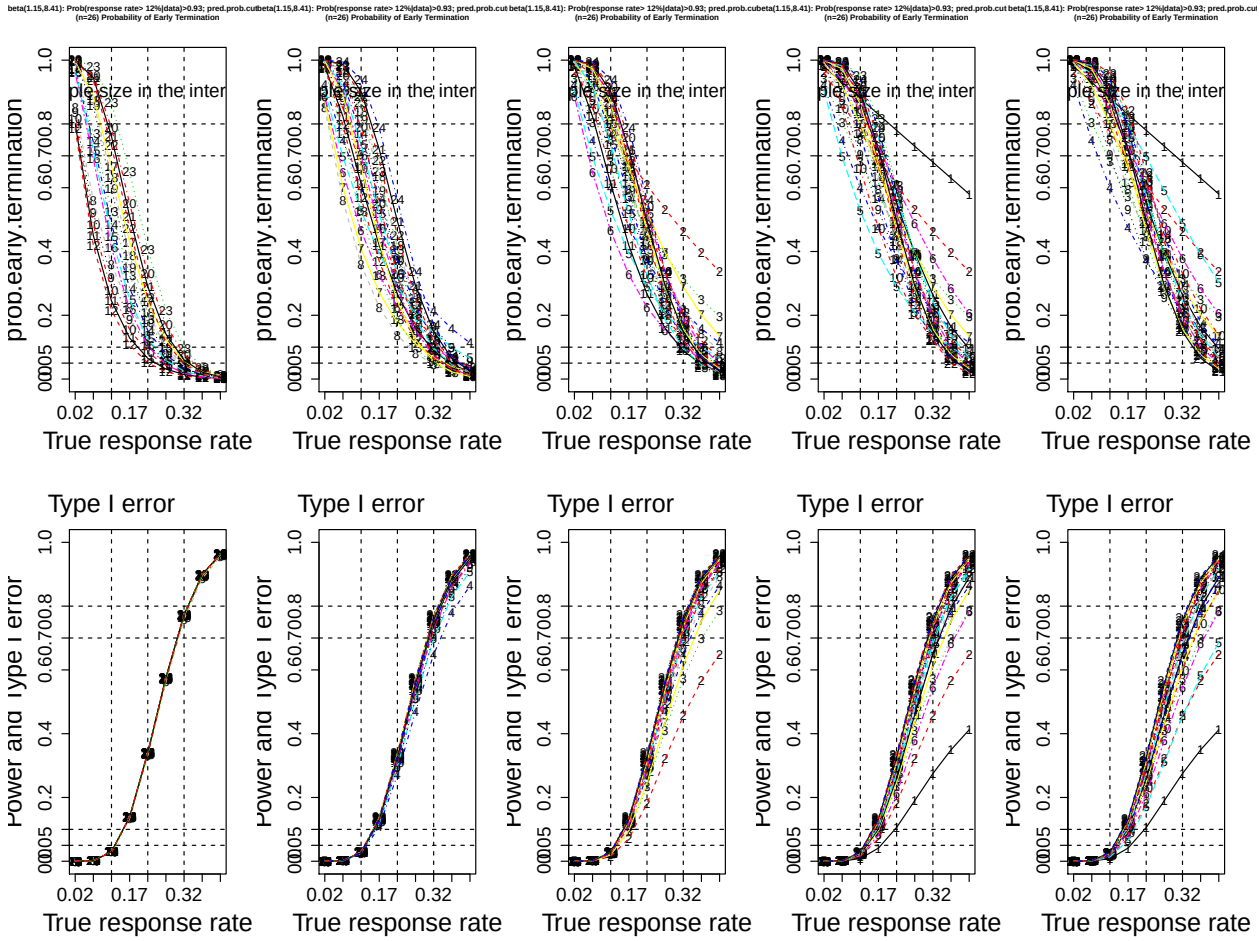

beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=30
η = 0.93
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=30
η = 0.93
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(0,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=30
η = 0.93
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

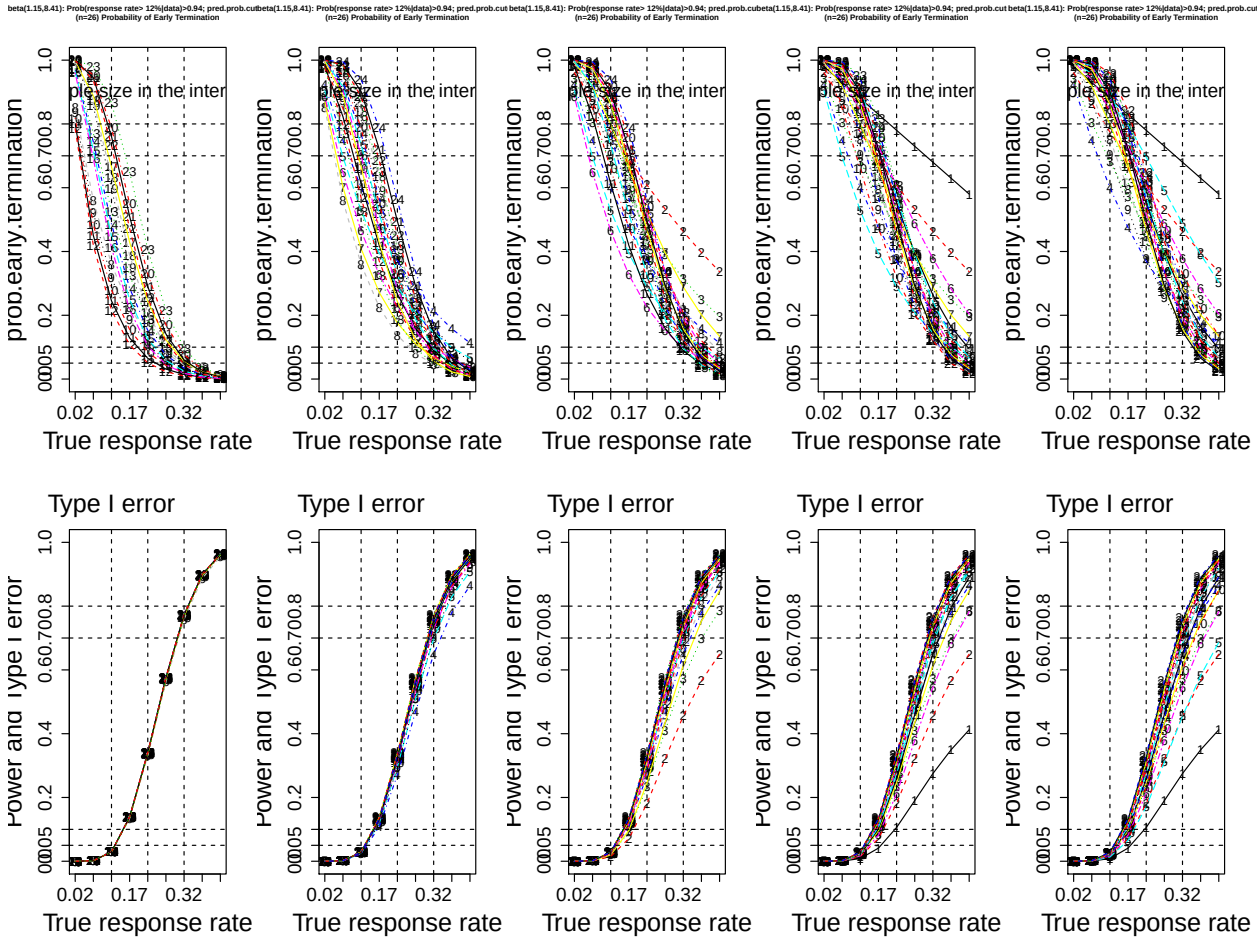
Prior Distribution: beta(1.15,8.41)

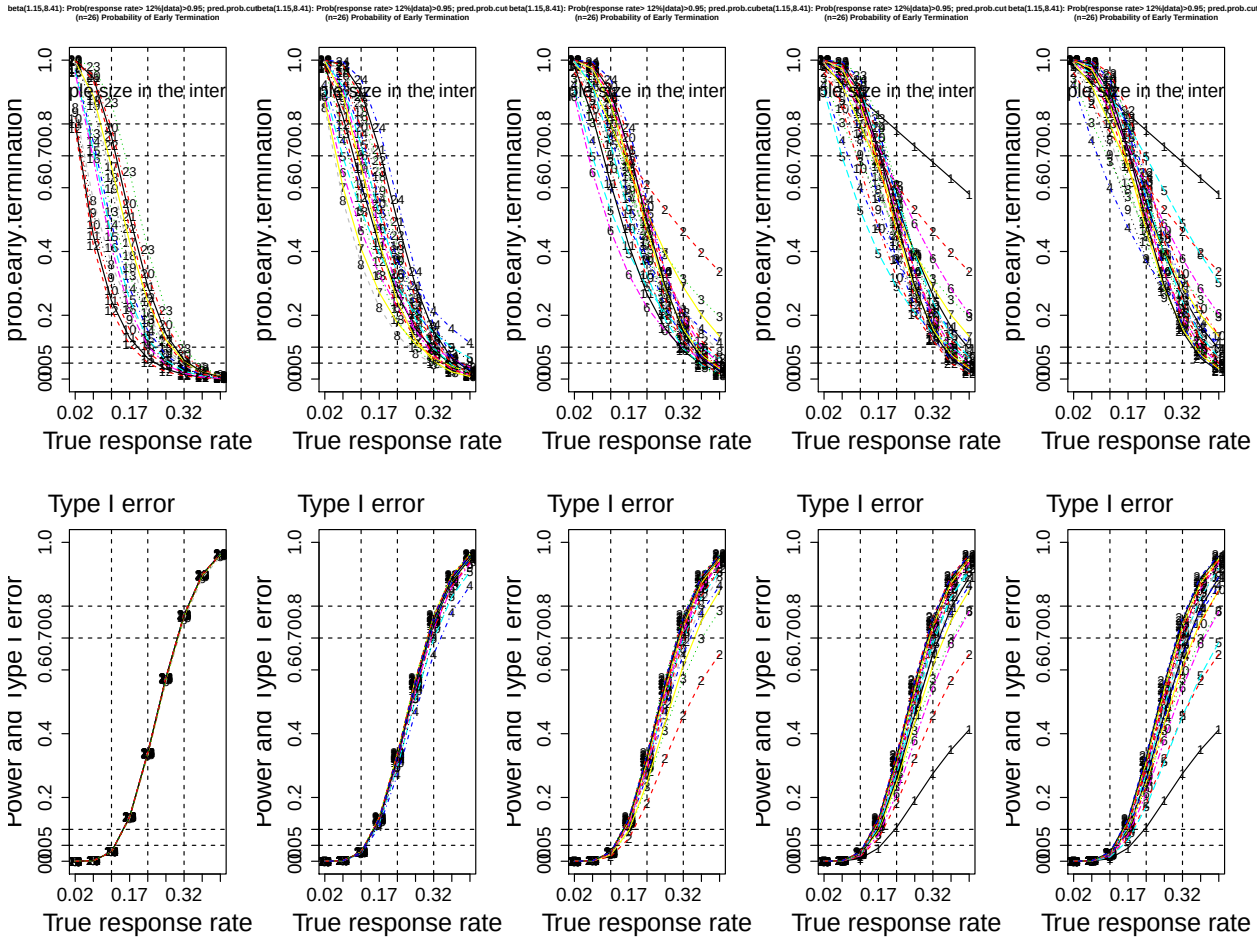


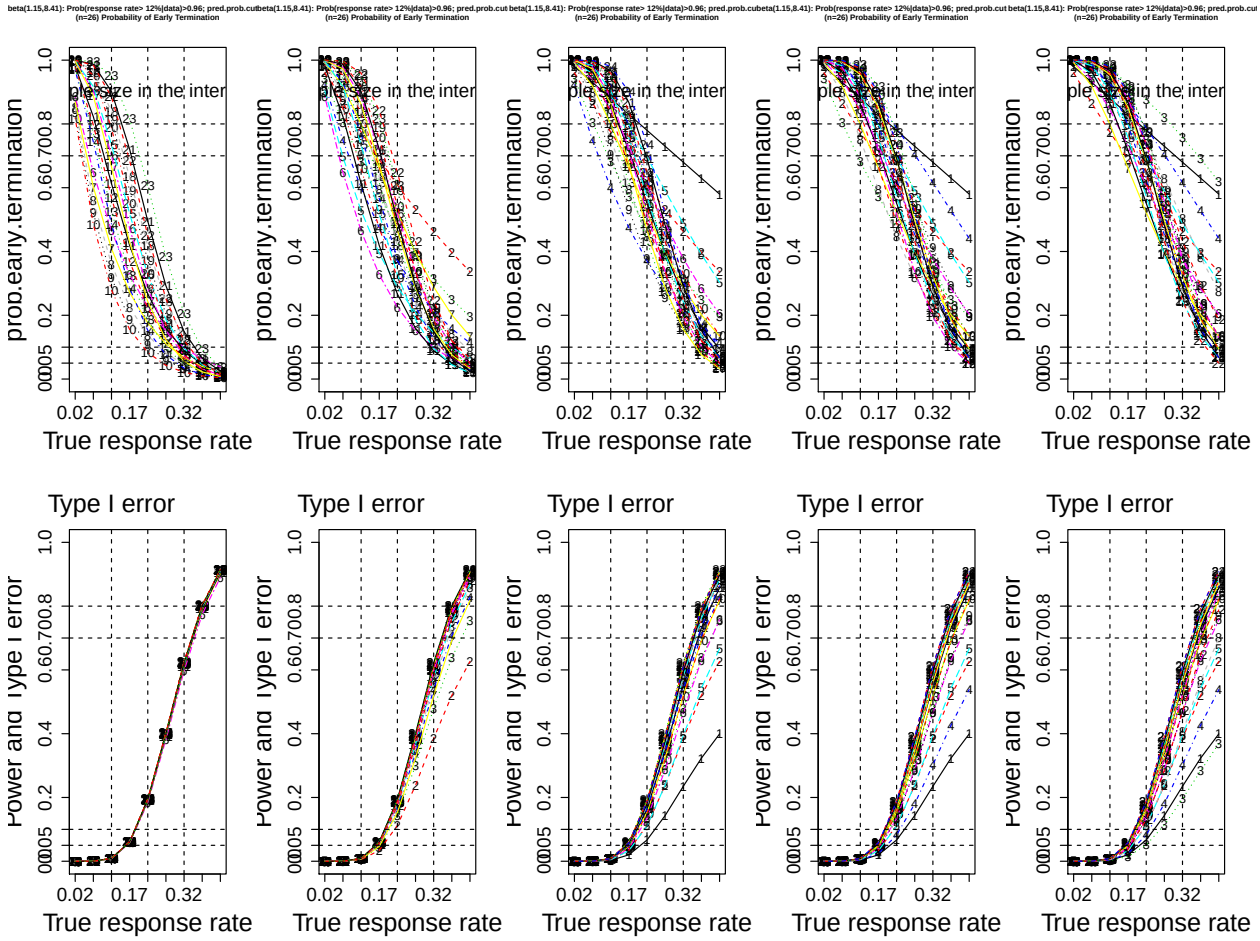


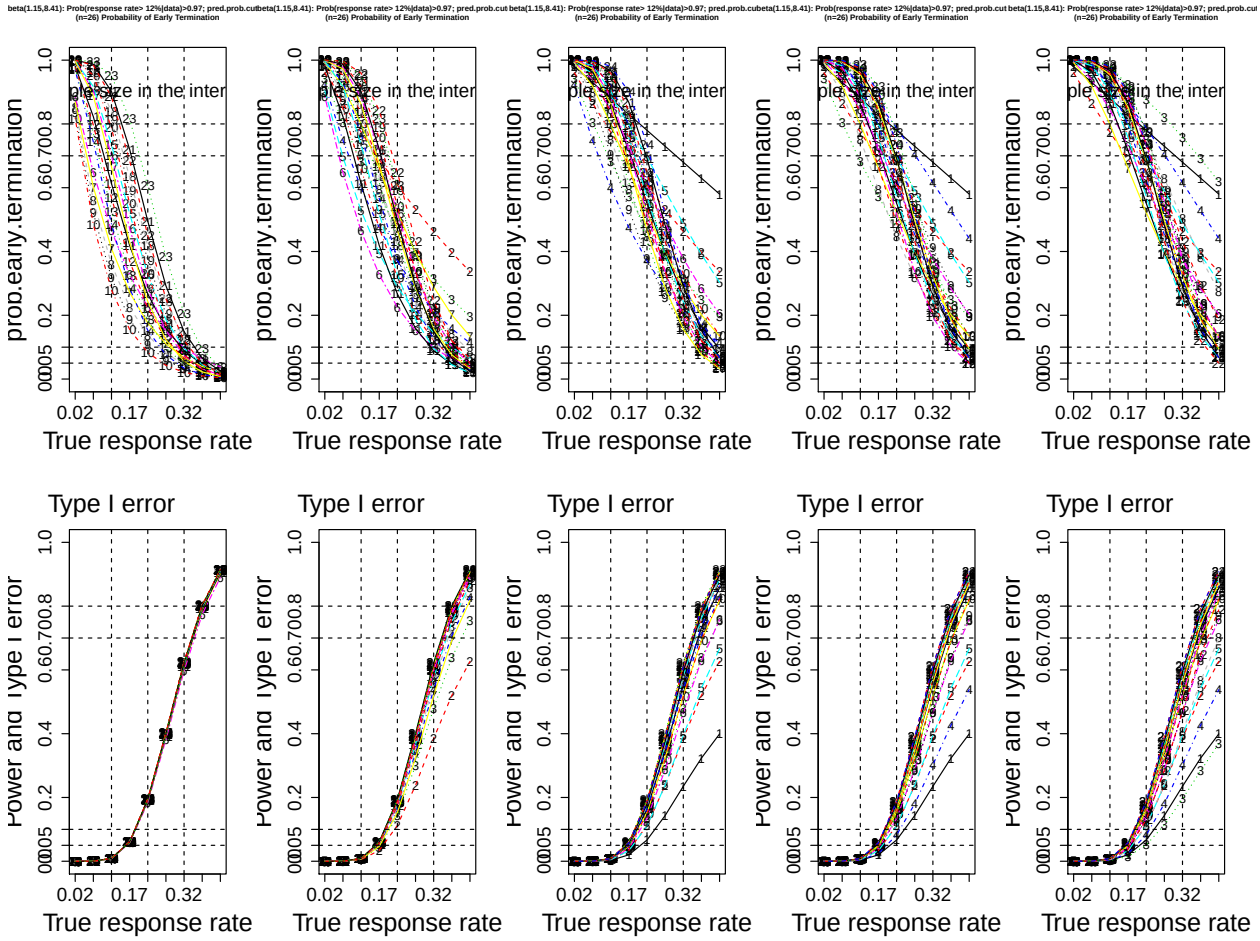

beta(1.15,8.41): Prob(response rate> 12%|data)>0.92; pred.prob.cut
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

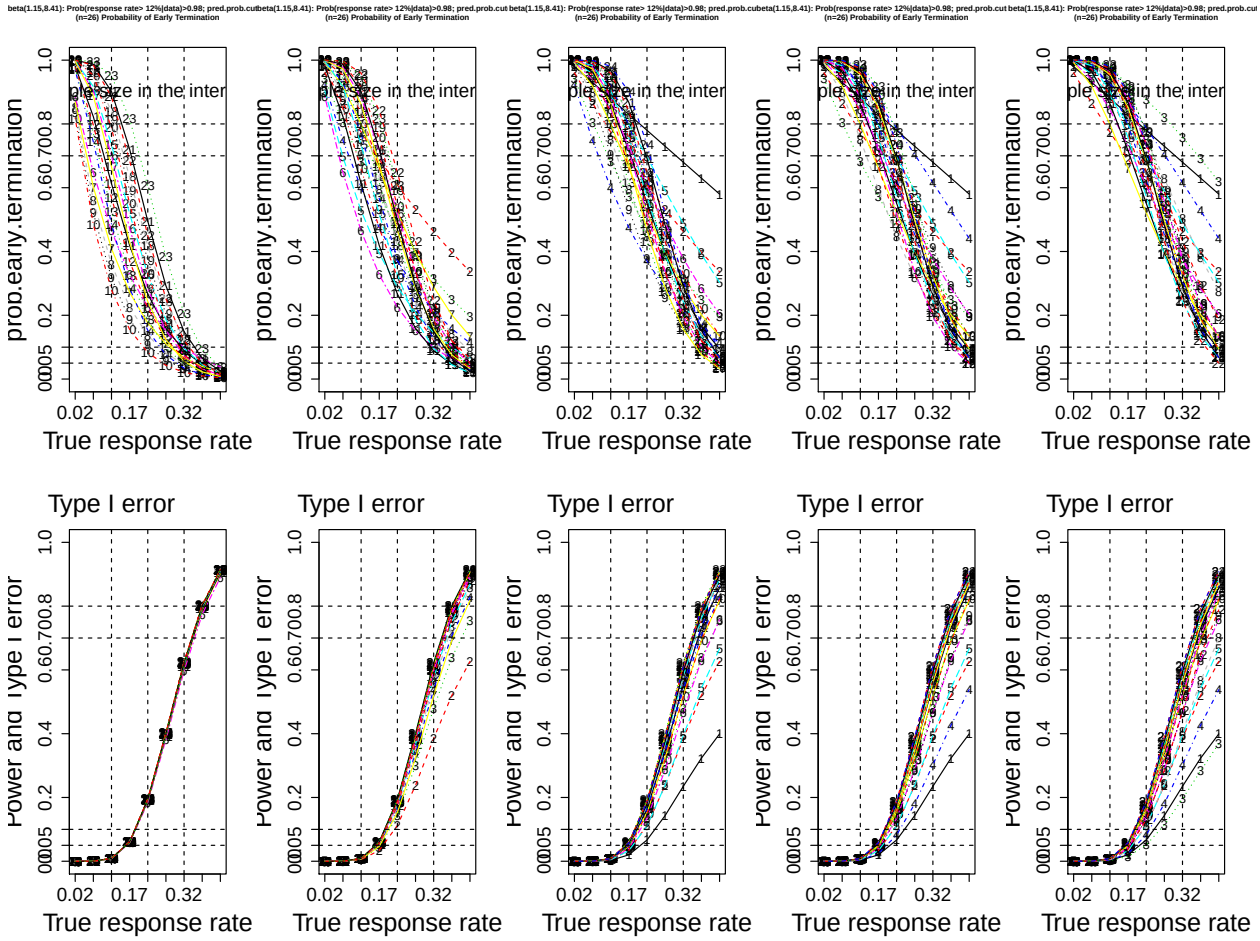

beta(1.15,8.41): Prob(response rate> 12%|data)>0.93; pred.prob.cut
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

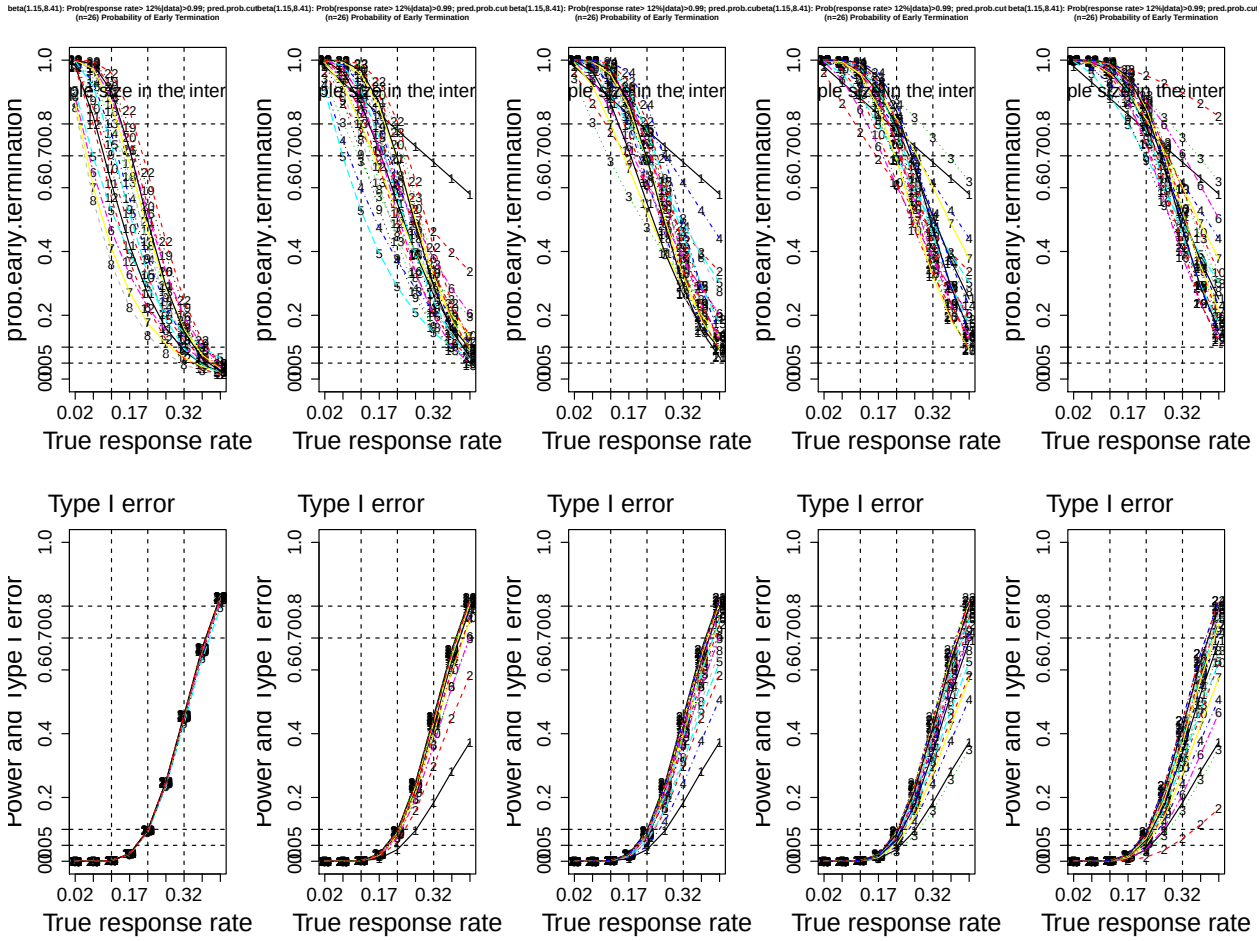

beta(1.15,8.41): Prob(response rate> 12%|data)>0.94; pred.prob.cut
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

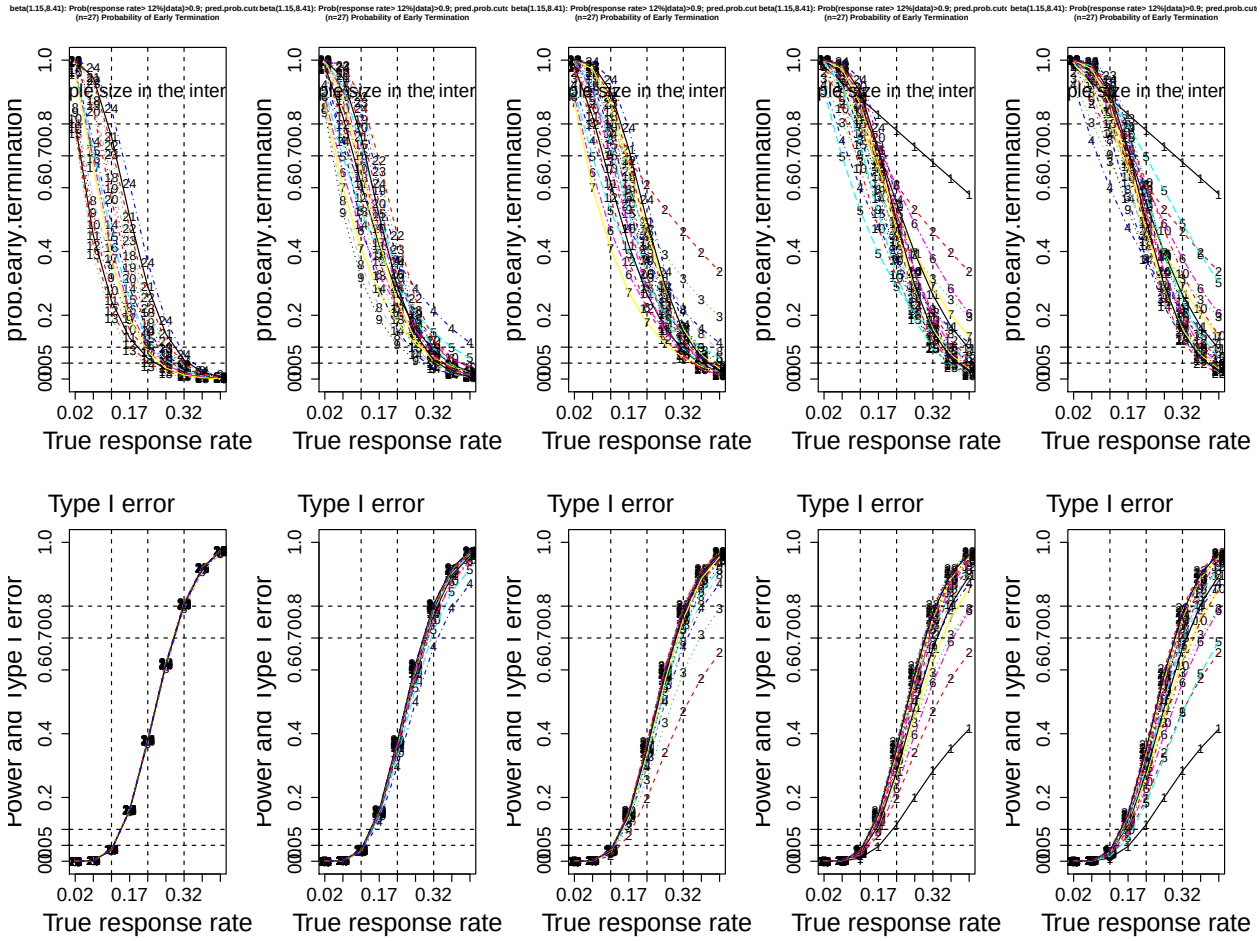

beta(1.15,8.41): Prob(response rate> 12%|data)>0.95; pred.prob.cut
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

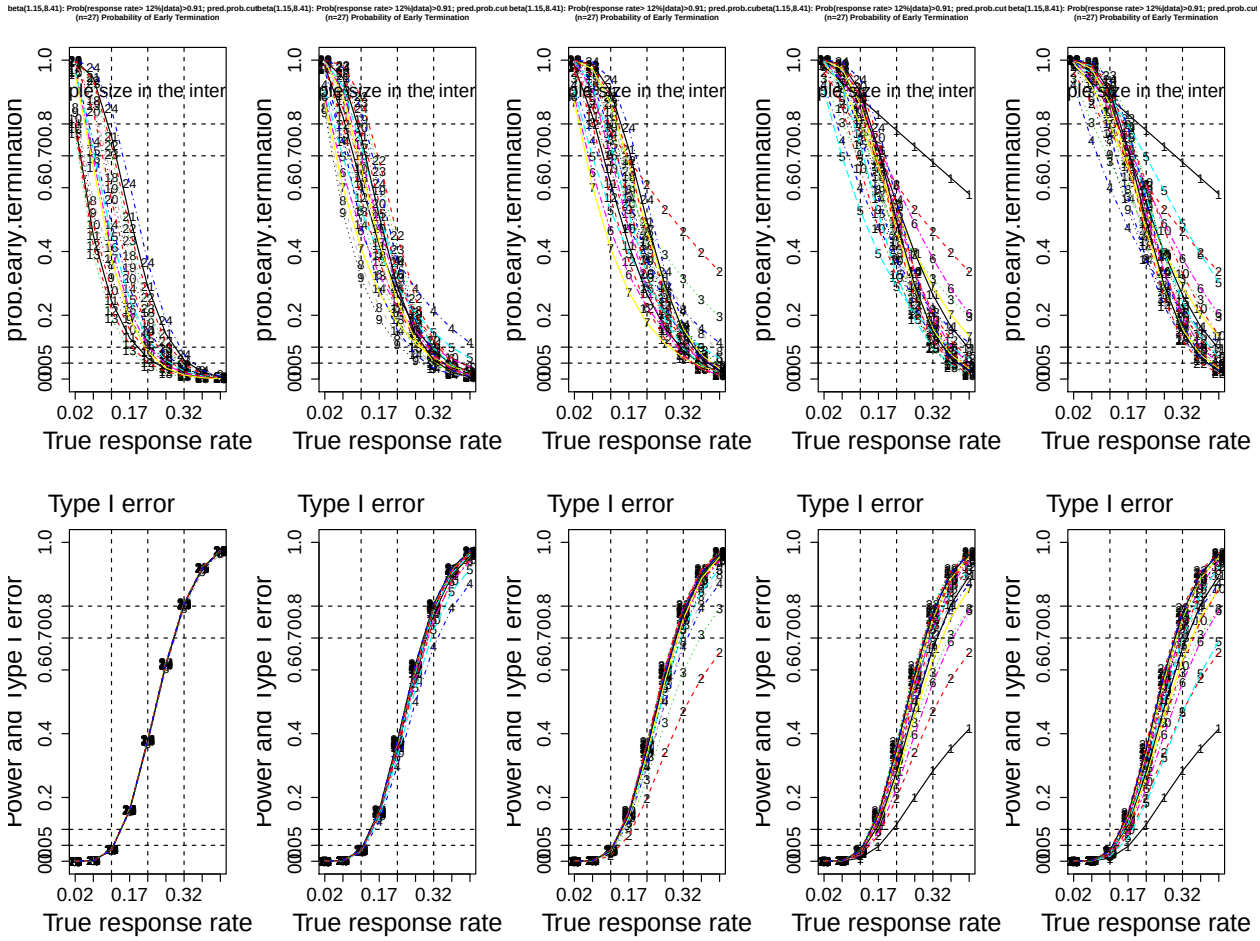

beta(1.15,8.41): Prob(response rate> 12%|data)>0.96; pred.prob.cut
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

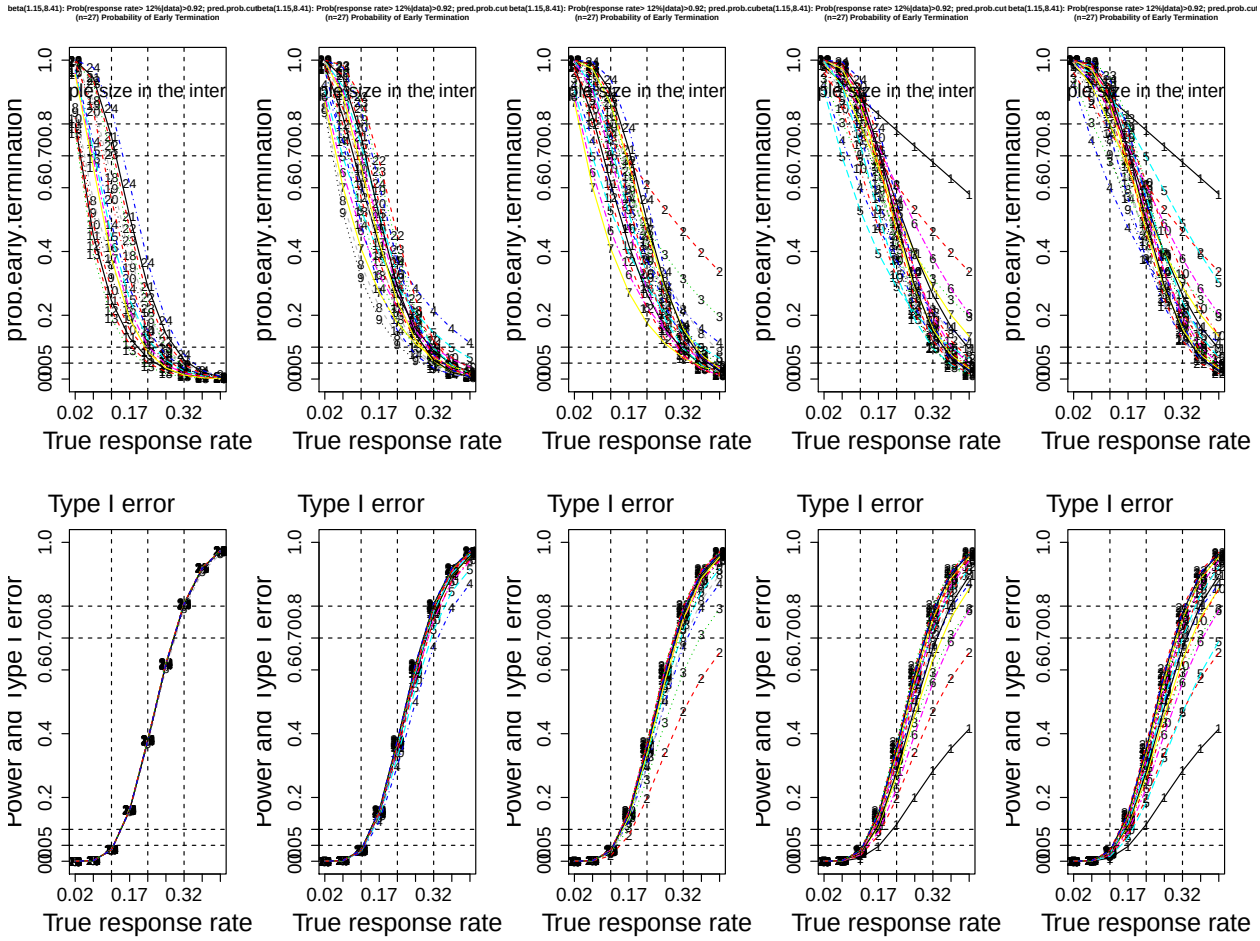

beta(1.15,8.41): Prob(response rate> 12%|data)>0.97; pred.prob.cut
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

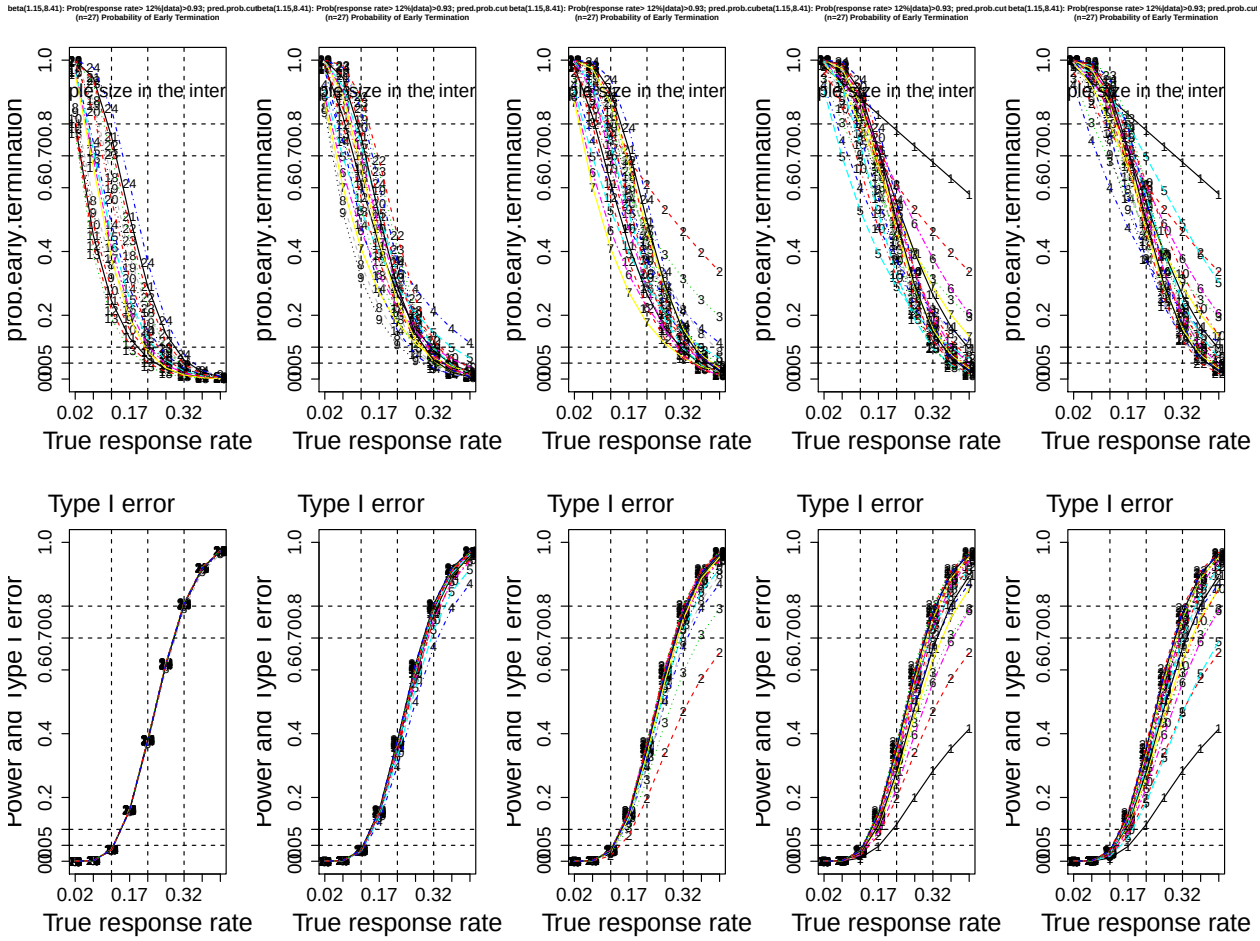

beta(1.15,8.41): Prob(response rate> 12%|data)>0.98; pred.prob.cut
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

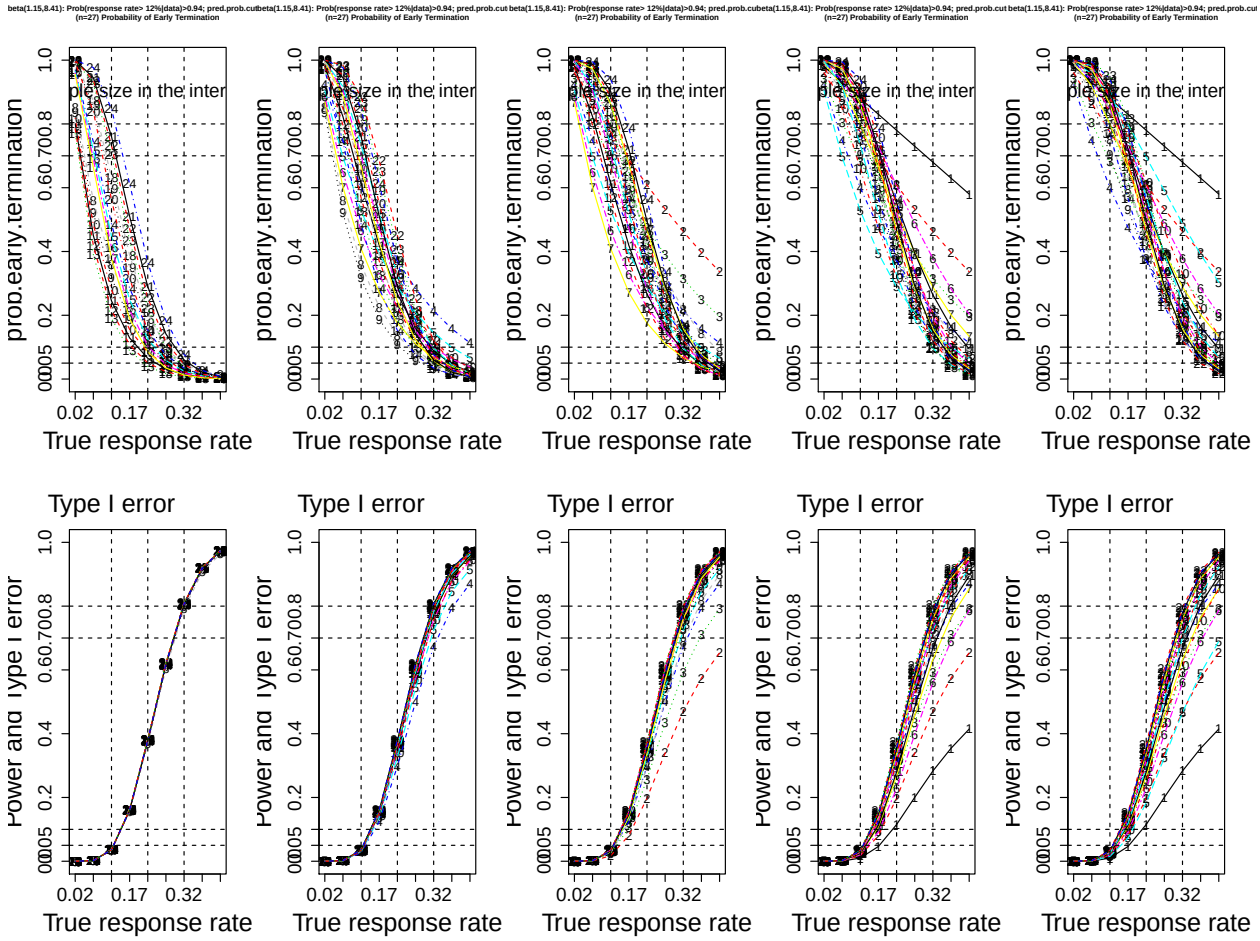

beta(1.15,8.41): Prob(response rate> 12%|data)>0.99; pred.prob.cut
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

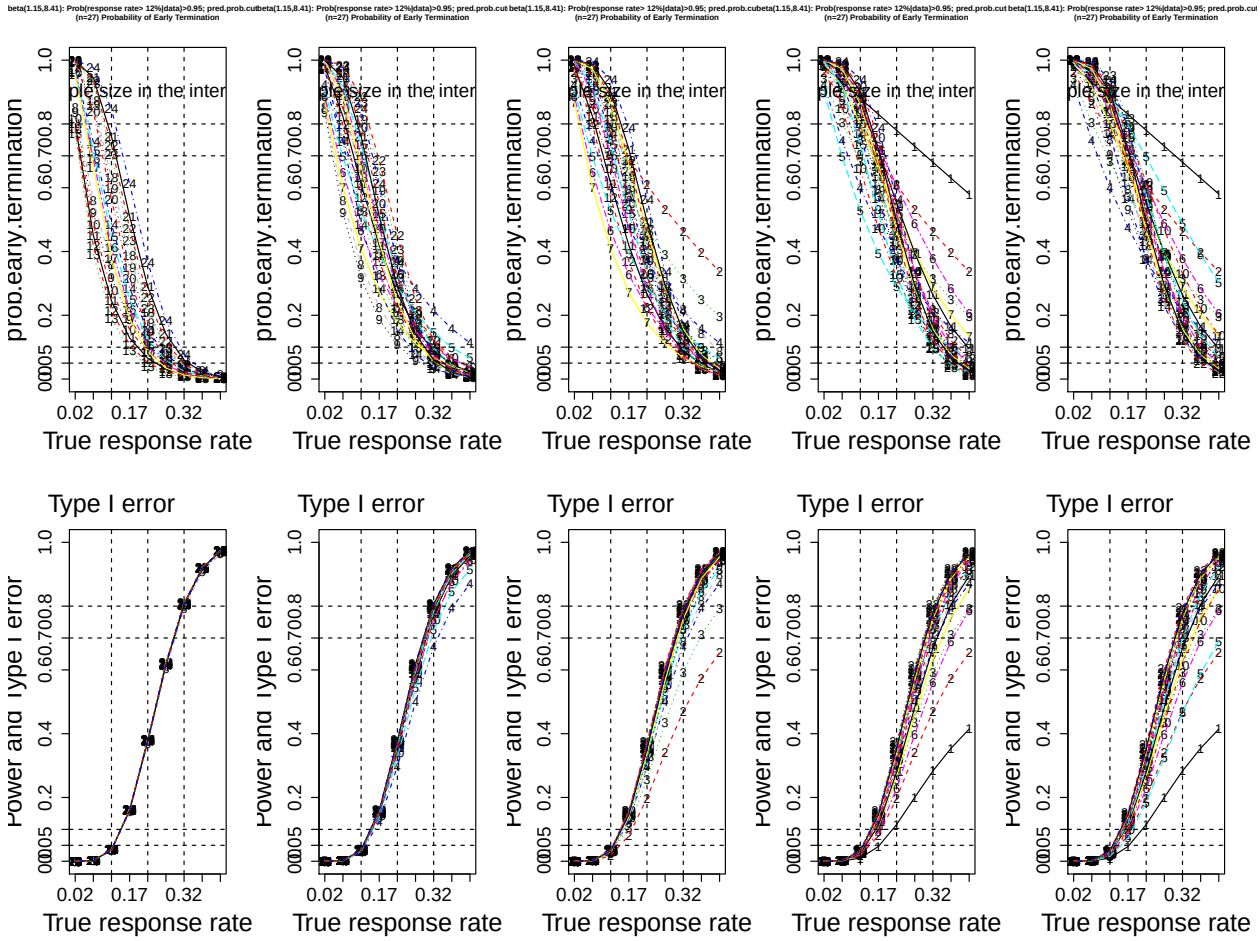

beta(1.15,8.41): Prob(response rate> 12%|data)>0.9; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

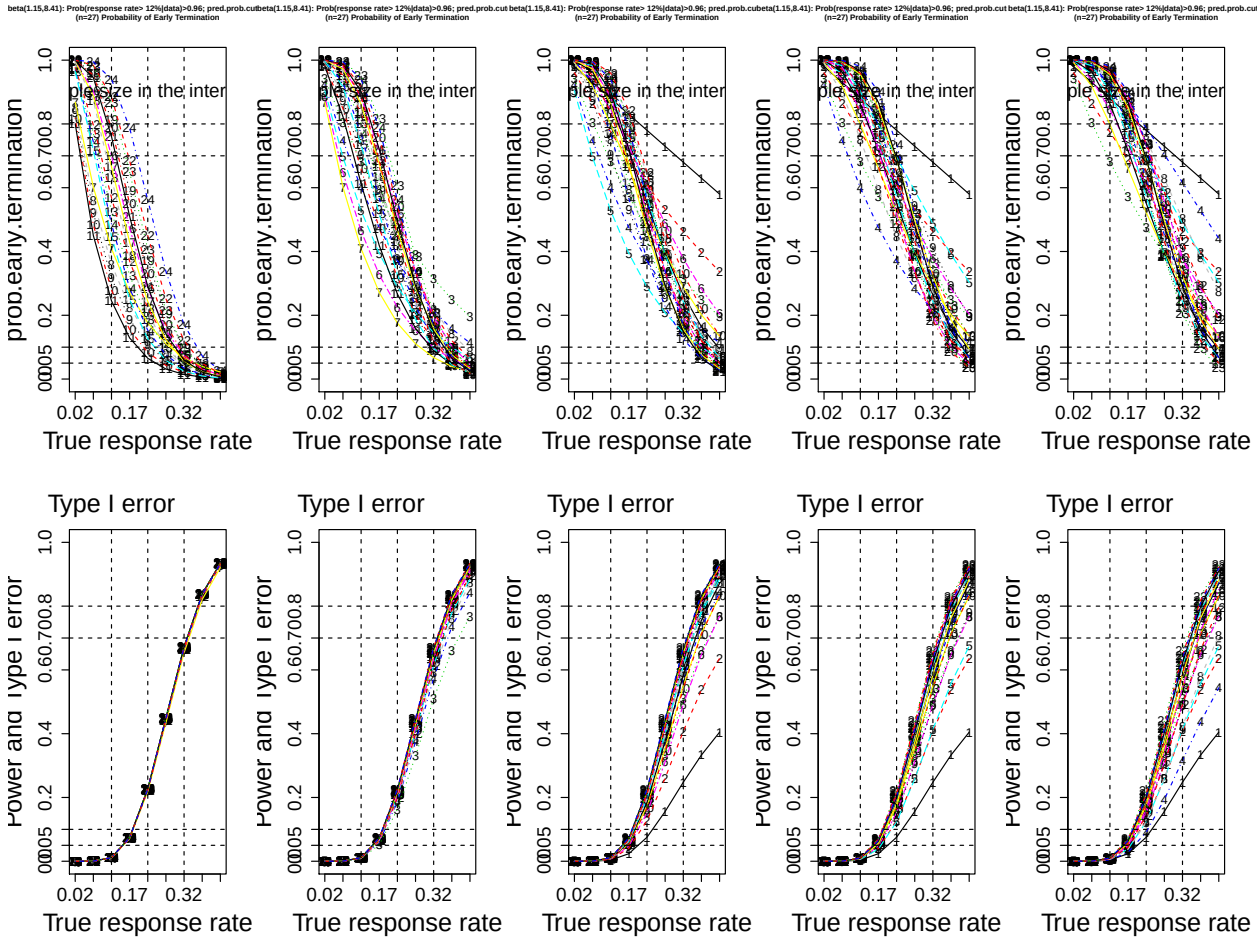

beta(1.15,8.41): Prob(response rate> 12%|data)>0.91; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

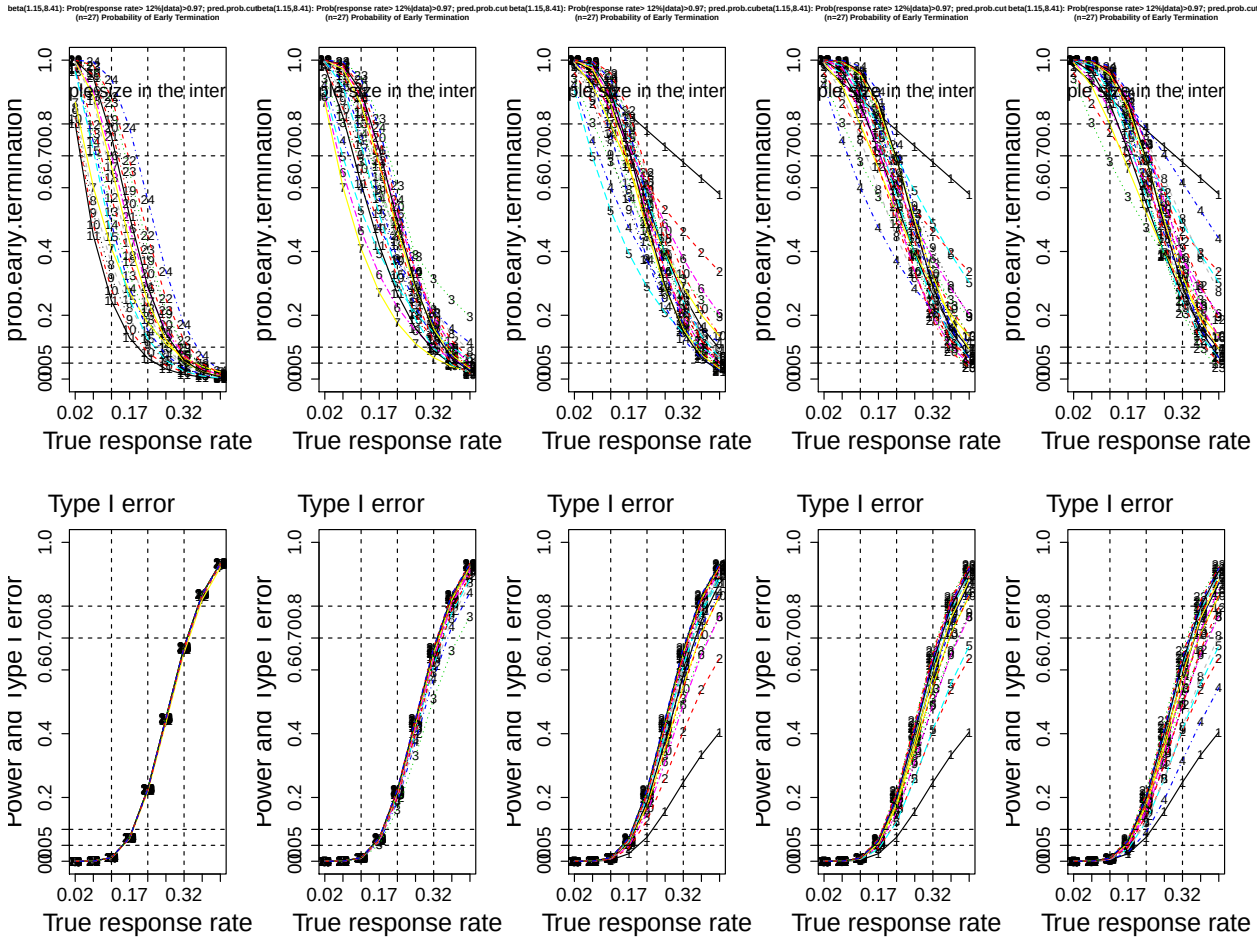

beta(1.15,8.41): Prob(response rate> 12%|data)>0.92; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

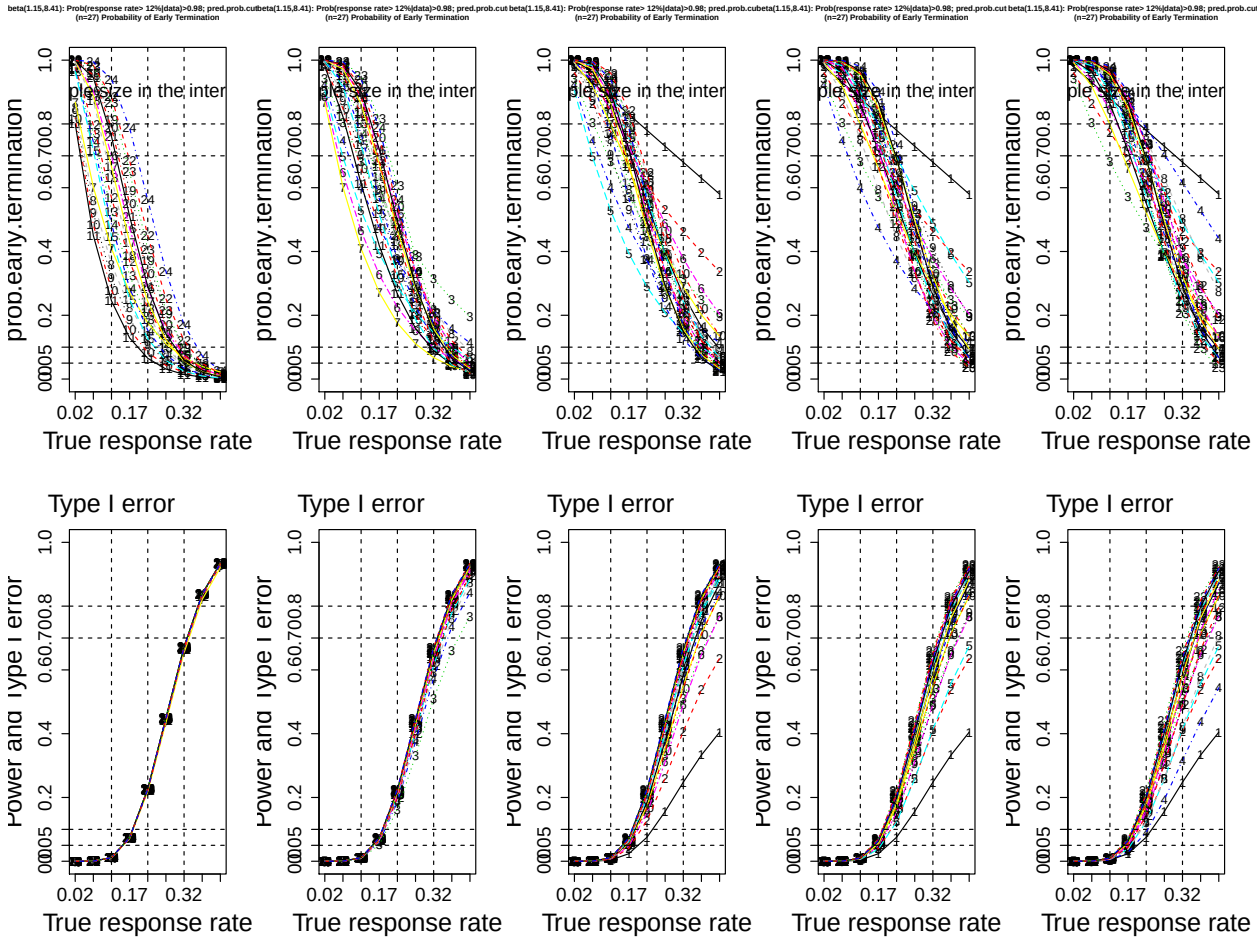

beta(1.15,8.41): Prob(response rate> 12%|data)>0.93; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

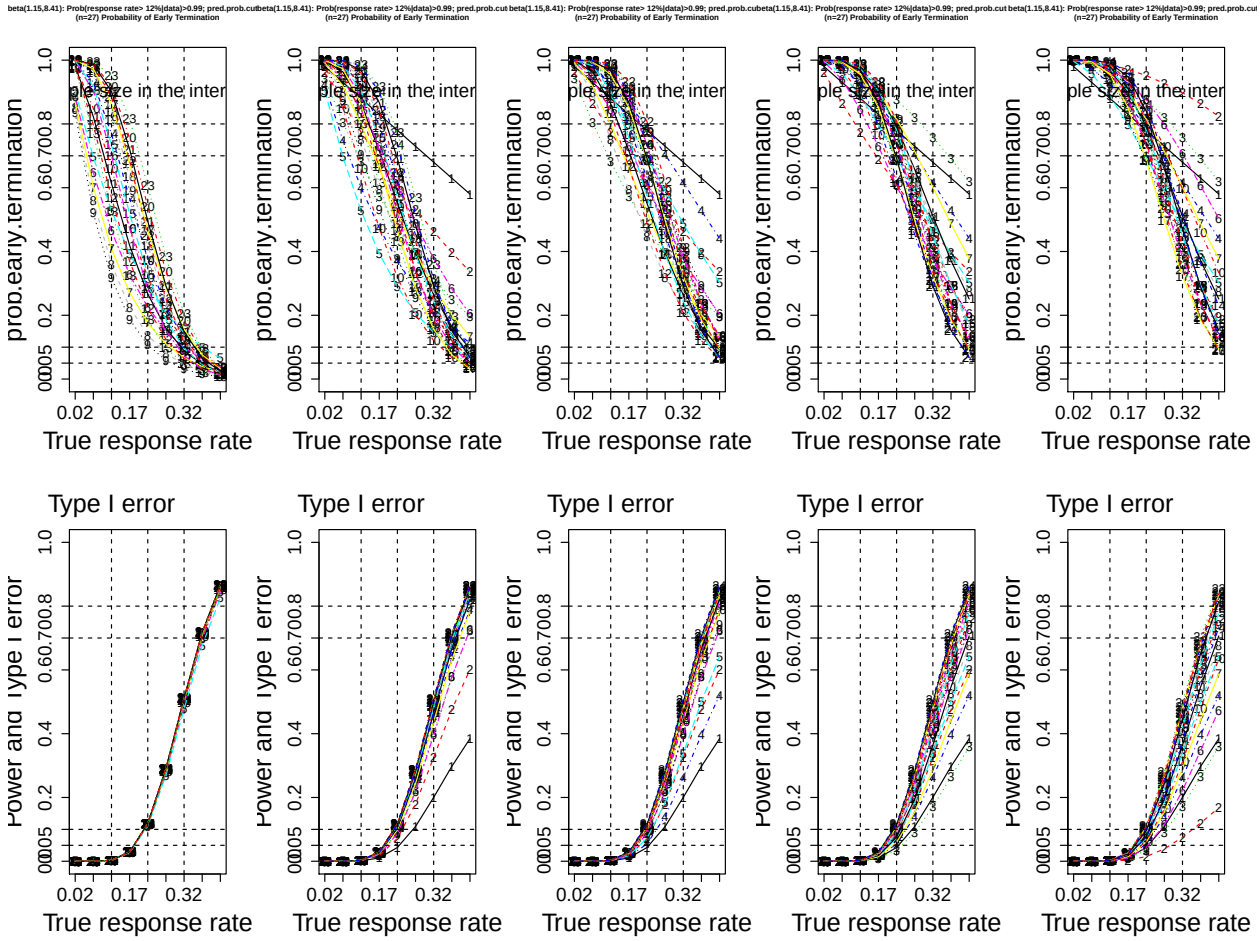

beta(1.15,8.41): Prob(response rate> 12%|data)>0.94; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

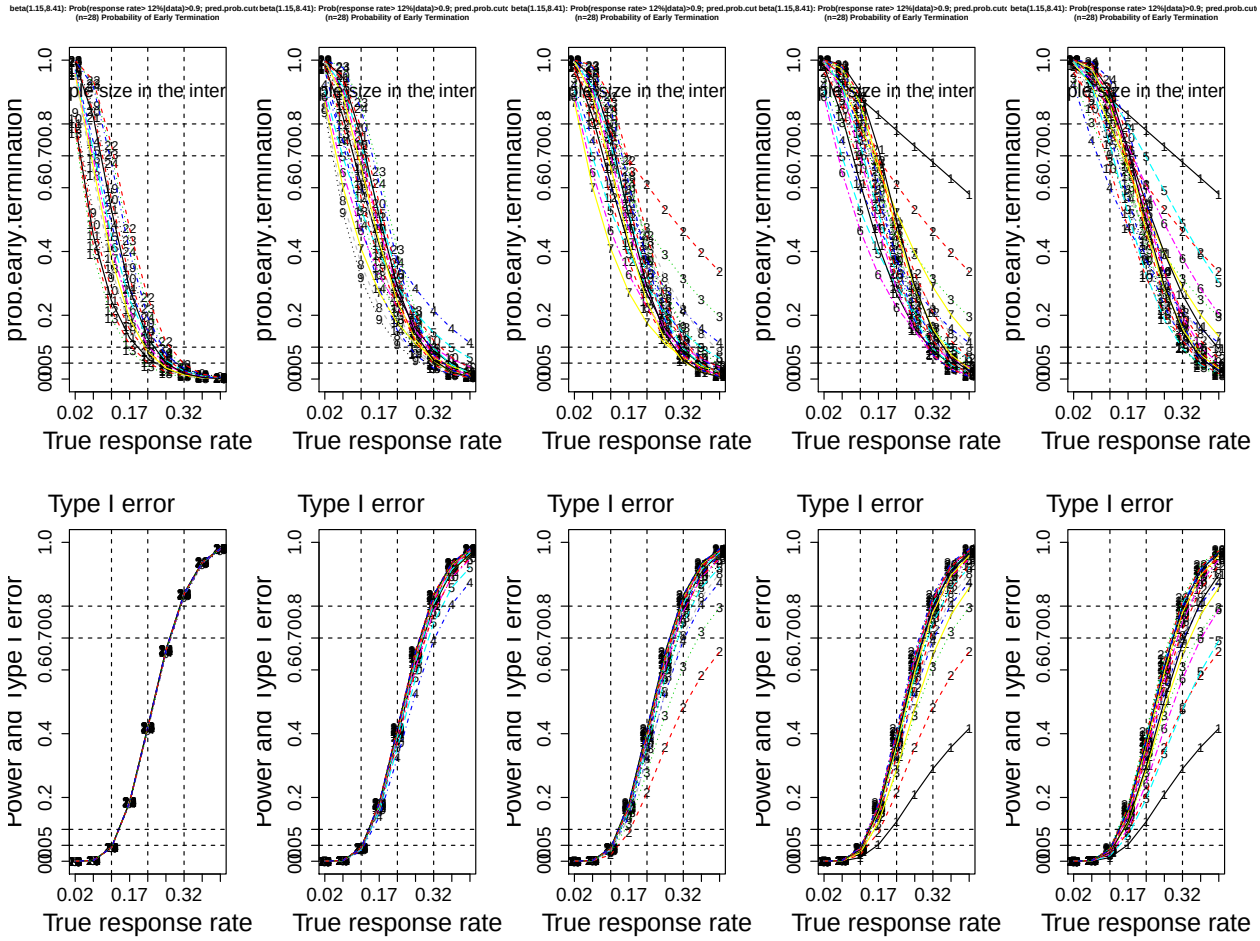

beta(1.15,8.41): Prob(response rate> 12%|data)>0.95; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

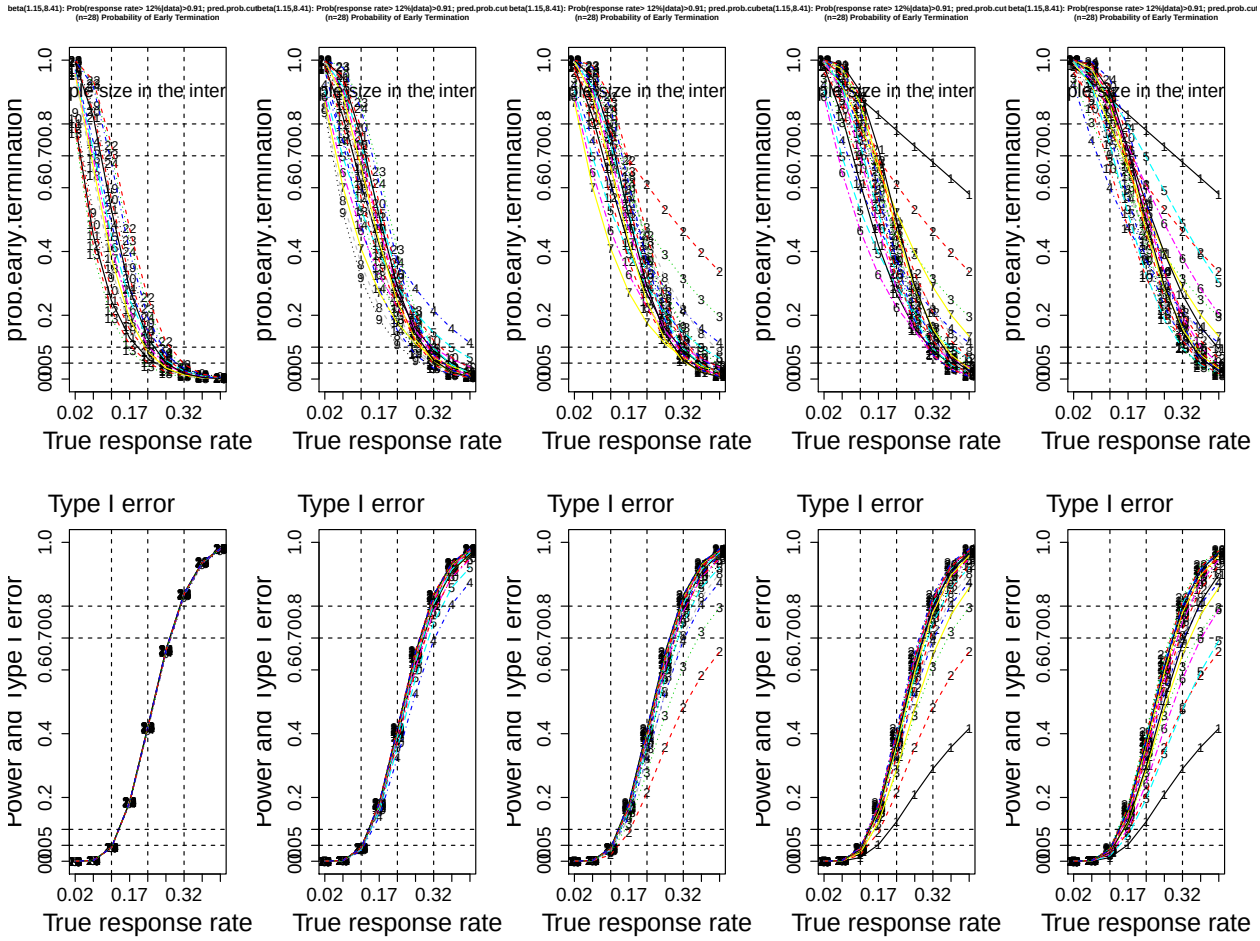

beta(1.15,8.41): Prob(response rate> 12%|data)>0.96; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

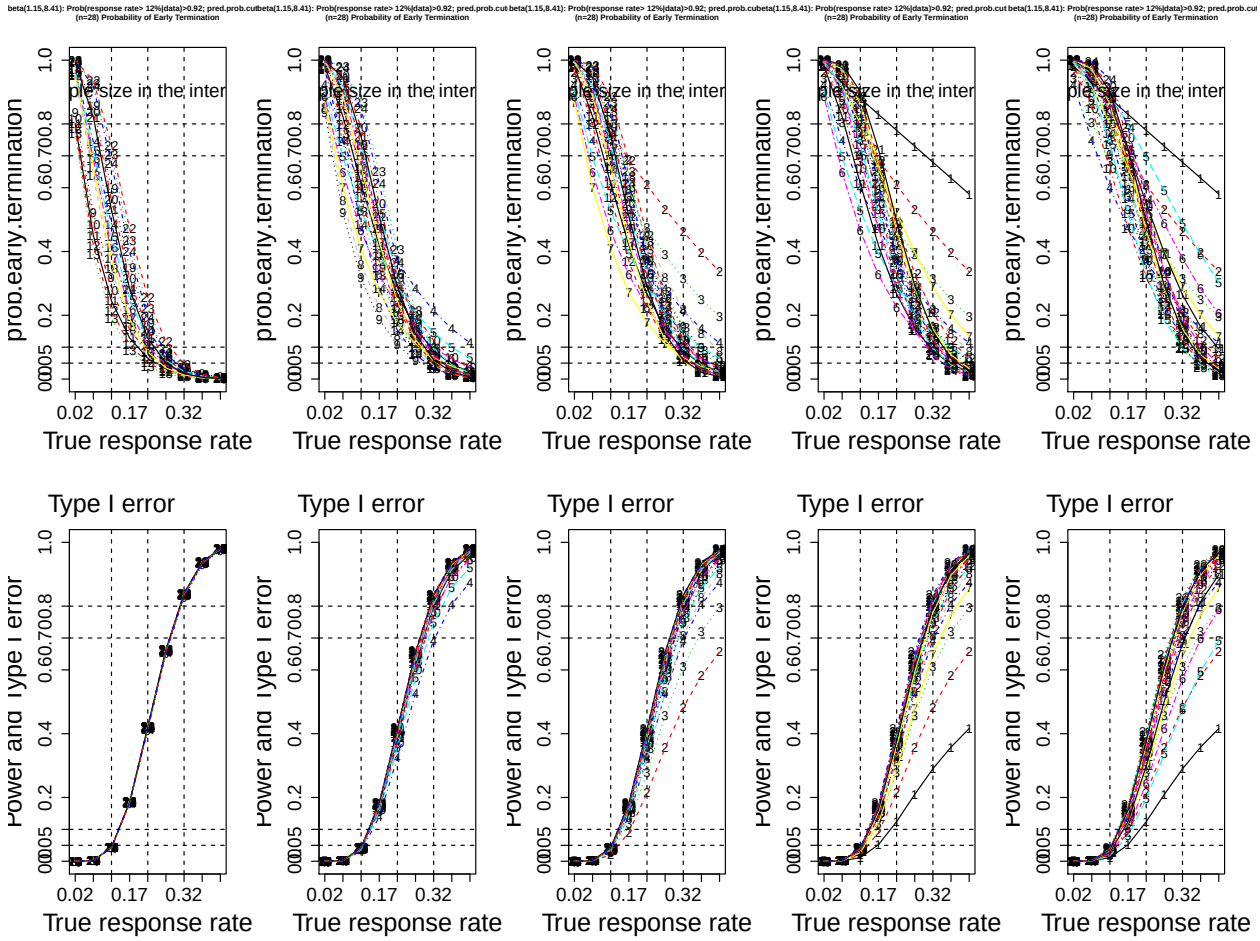

beta(1.15,8.41): Prob(response rate> 12%|data)>0.97; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

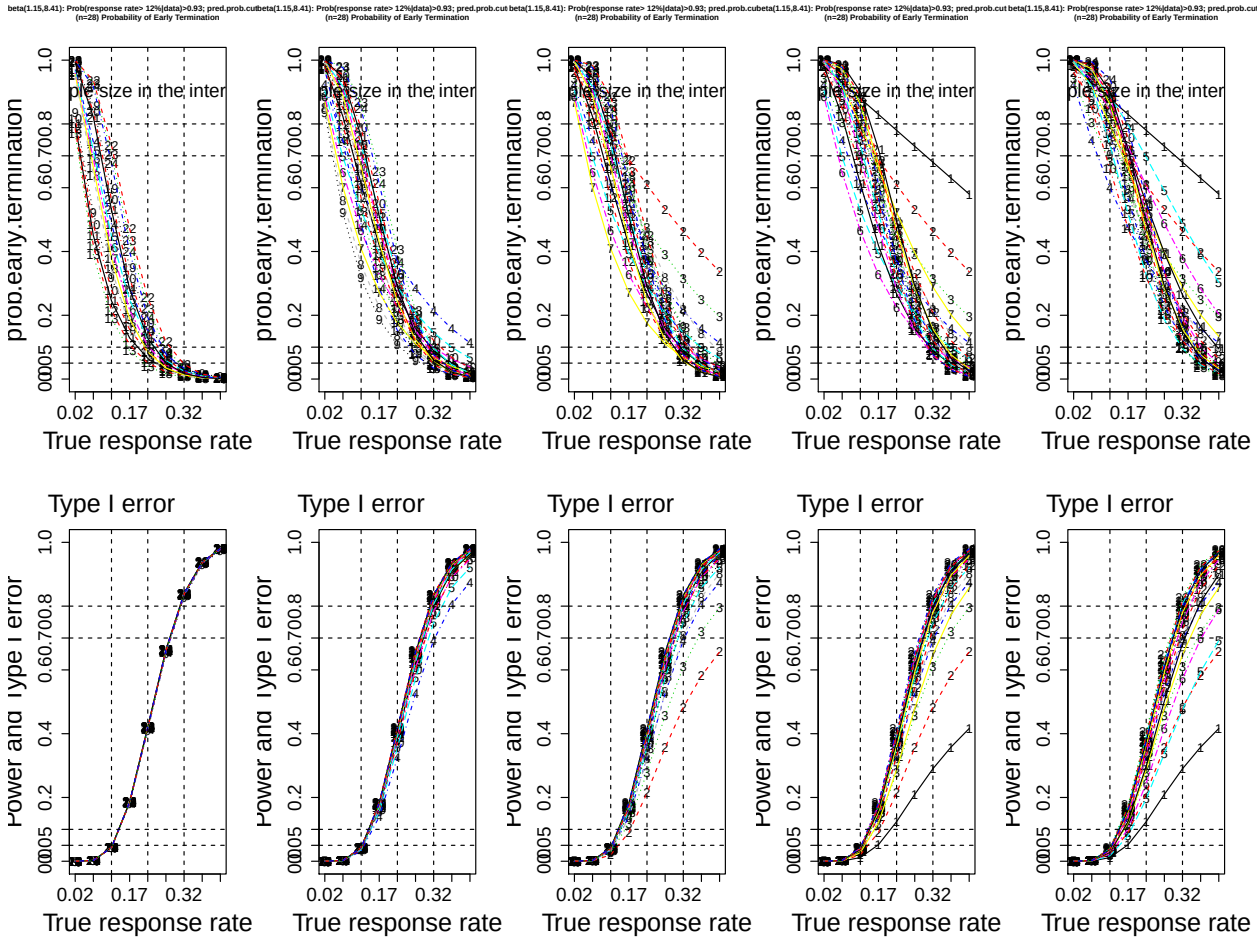

beta(1.15,8.41): Prob(response rate> 12%|data)>0.98; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

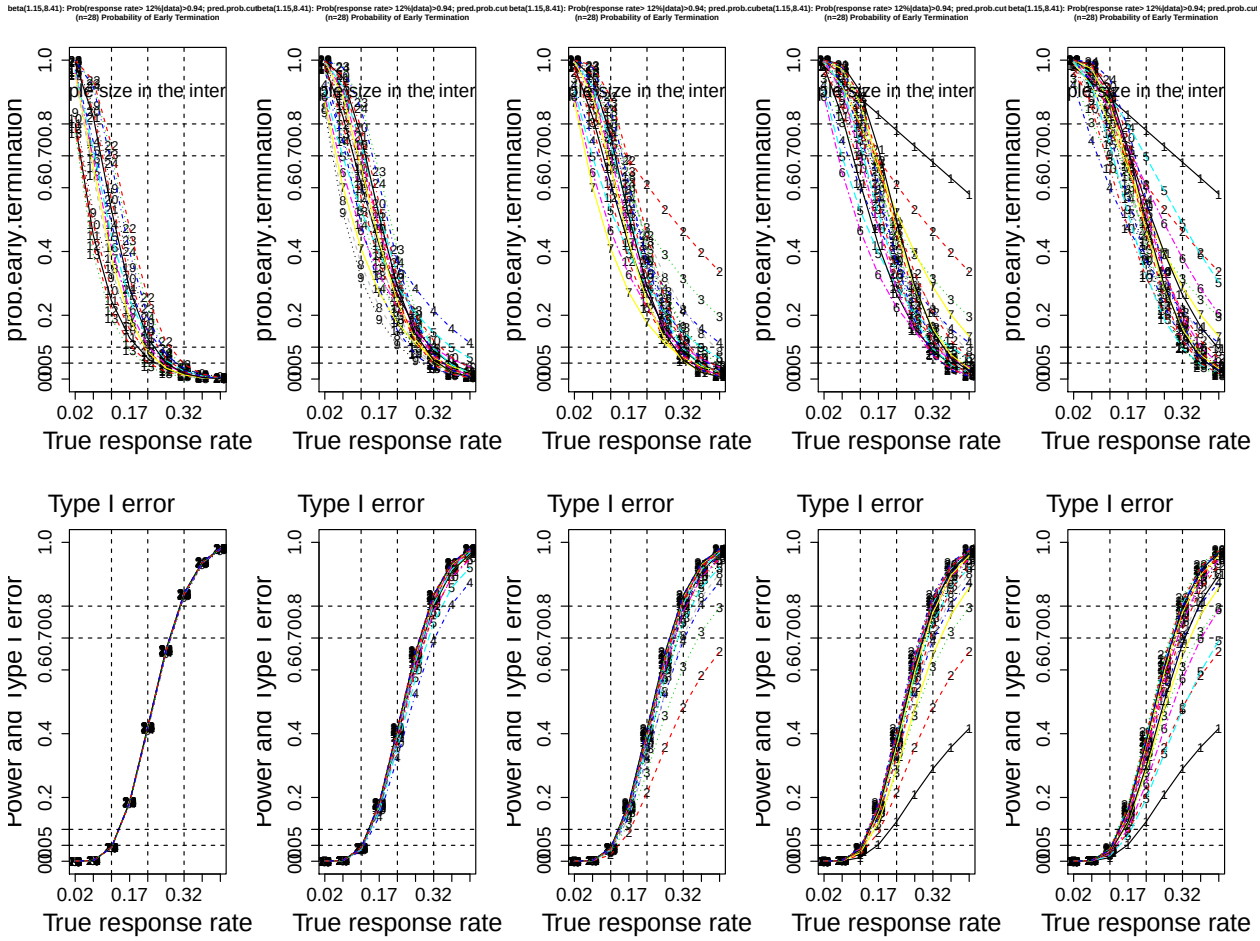

beta(1.15,8.41): Prob(response rate> 12%|data)>0.99; pred.prob.cut
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

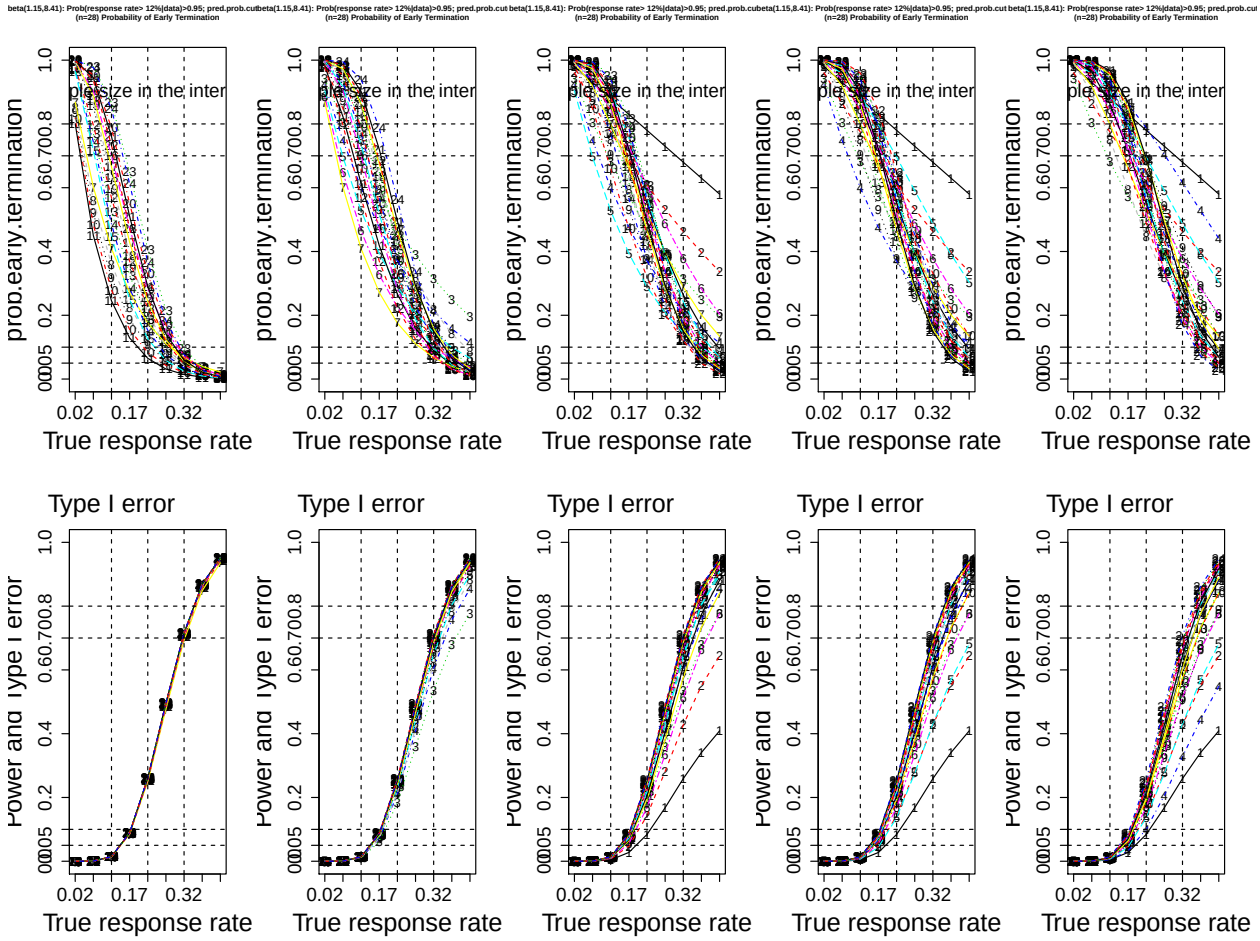

beta(1.15,8.41): Prob(response rate> 12%|data)>0.9; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

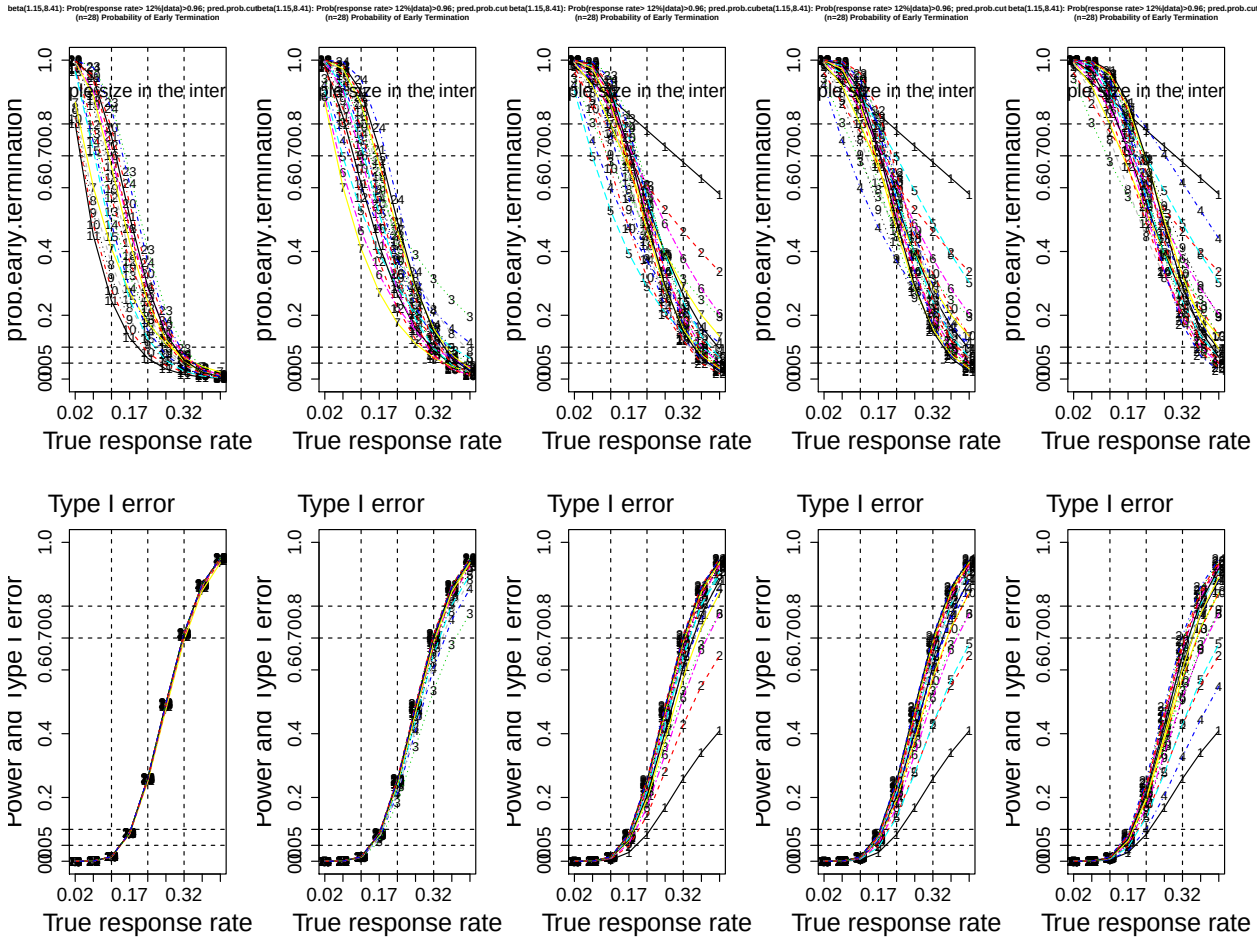

beta(1.15,8.41): Prob(response rate> 12%|data)>0.91; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

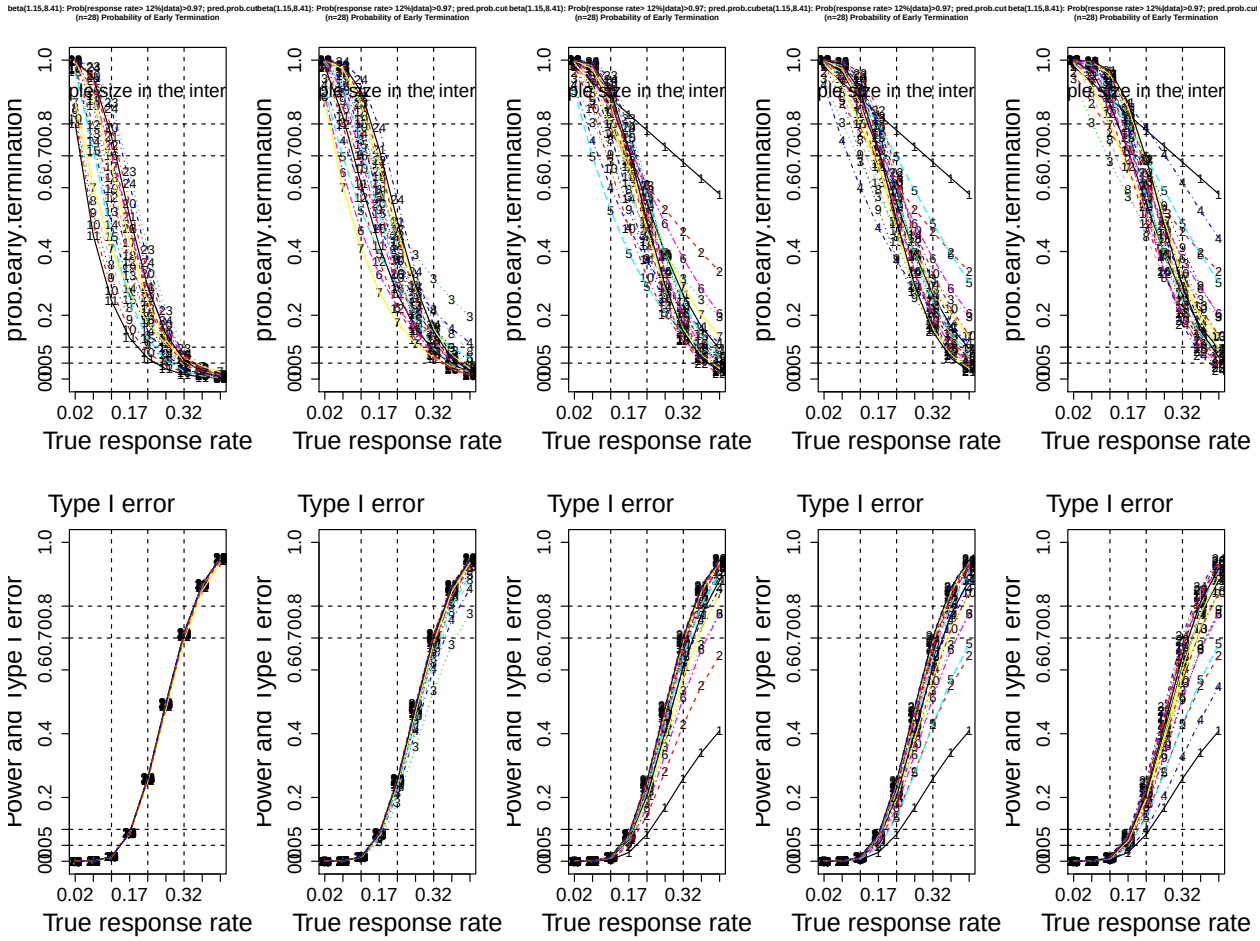

beta(1.15,8.41): Prob(response rate> 12%|data)>0.92; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

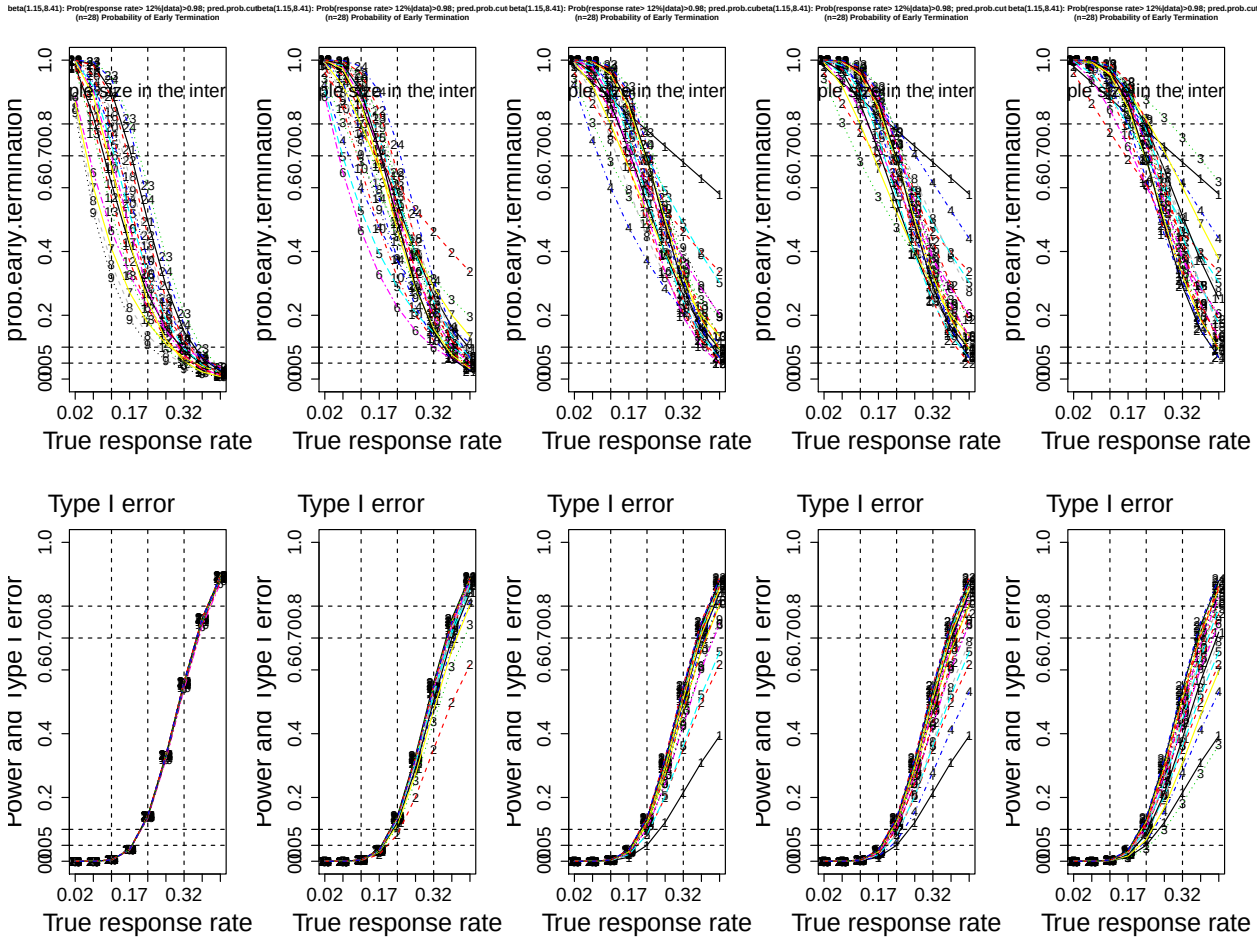

beta(1.15,8.41): Prob(response rate> 12%|data)>0.93; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

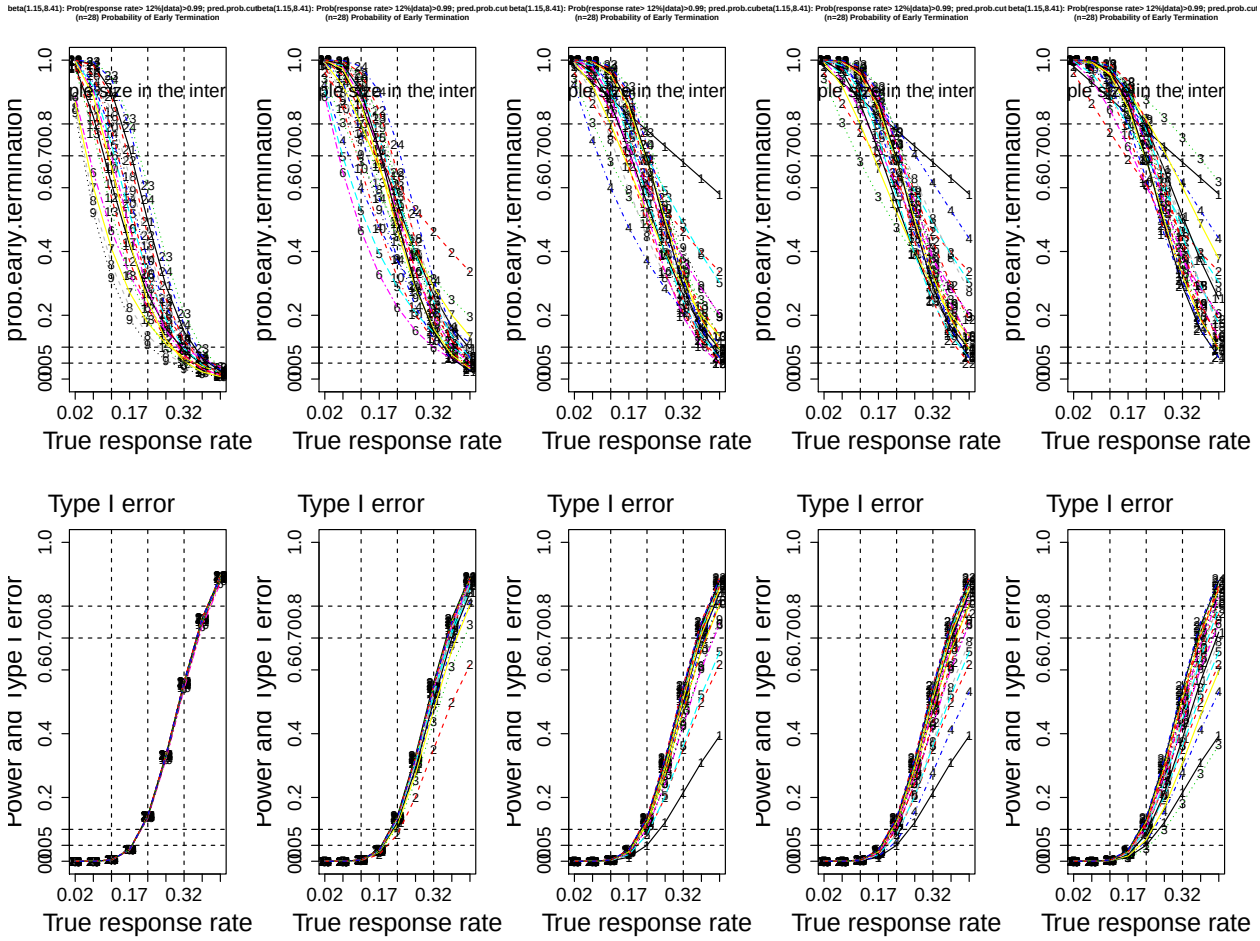

beta(1.15,8.41): Prob(response rate> 12%|data)>0.94; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

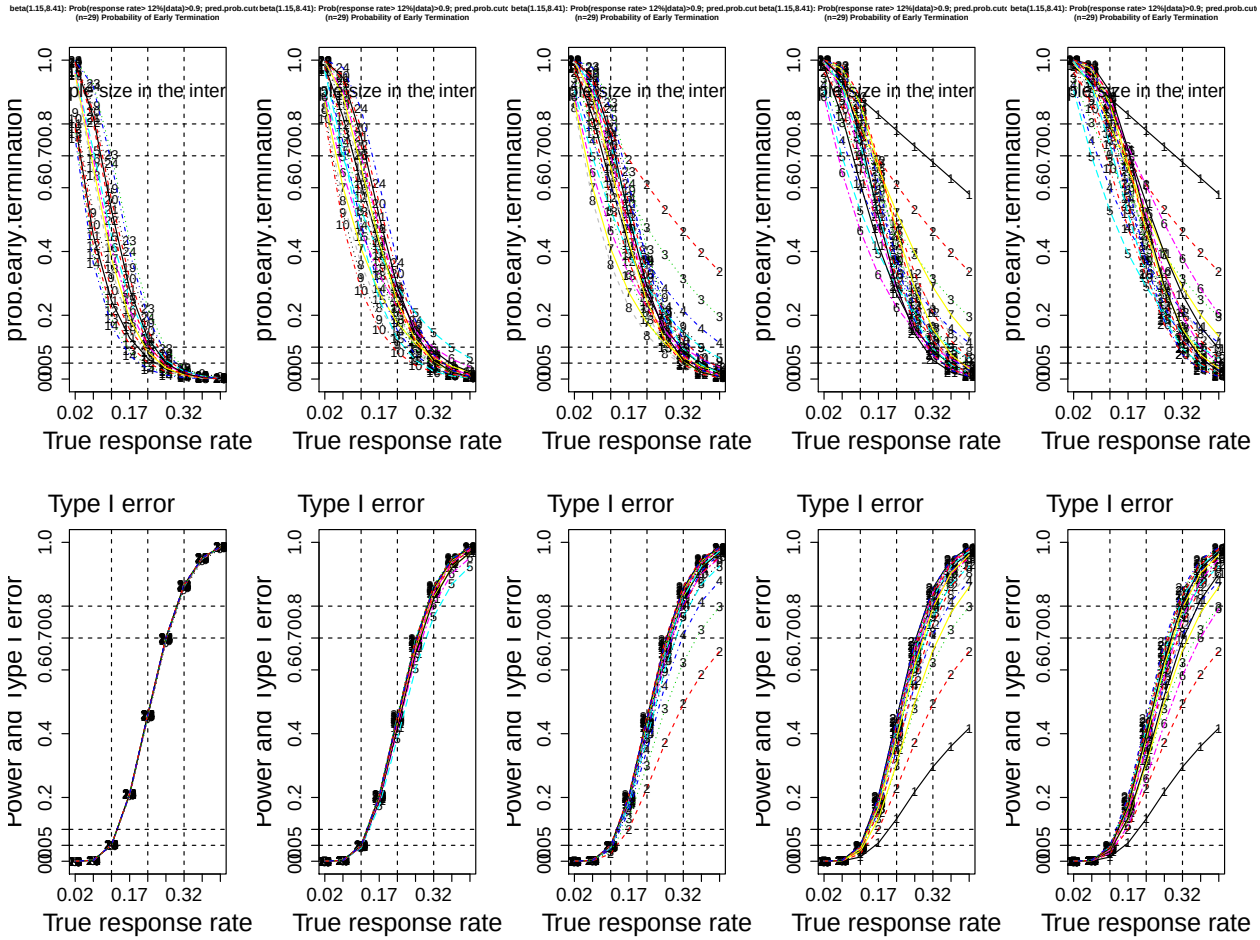

beta(1.15,8.41): Prob(response rate> 12%|data)>0.95; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

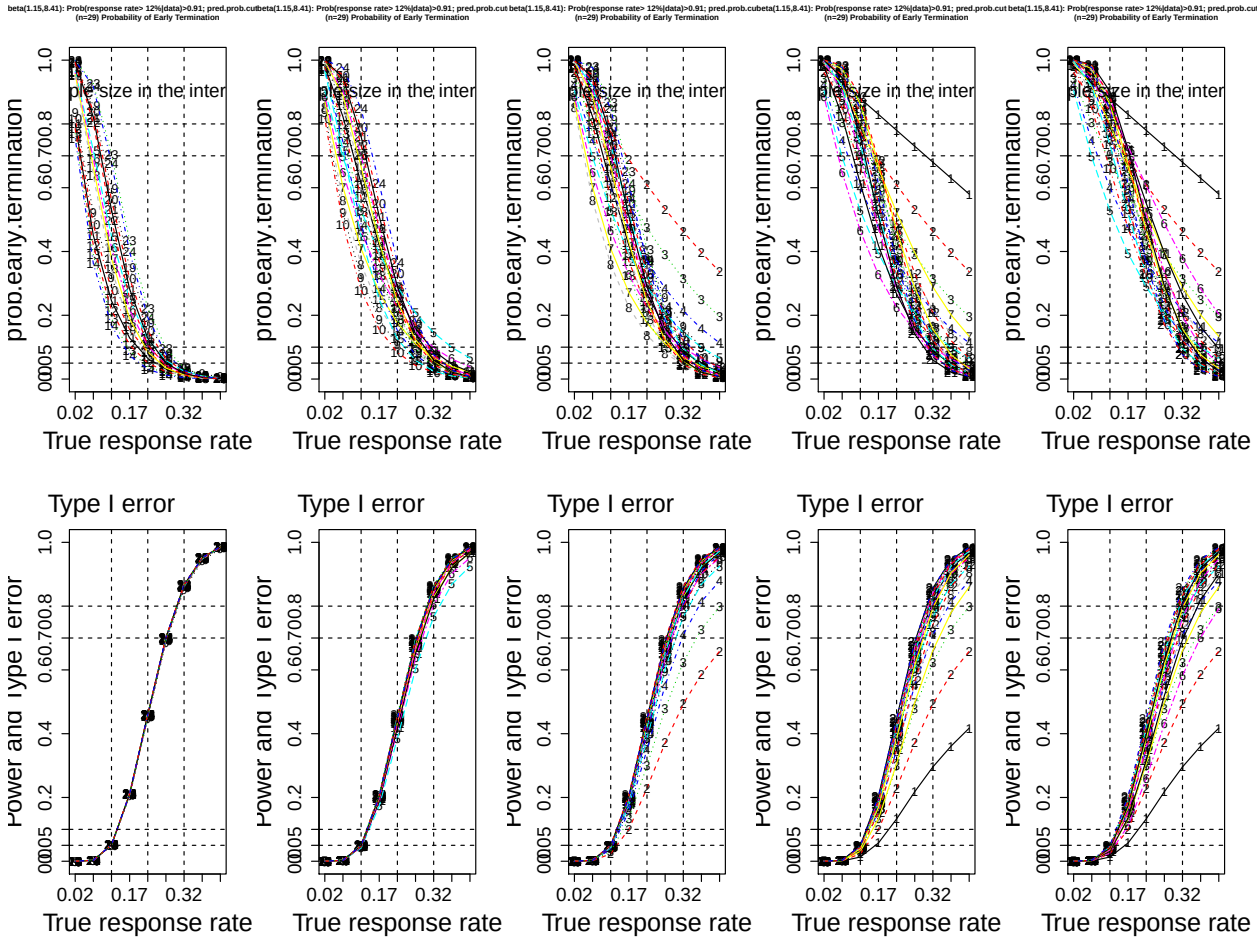

beta(1.15,8.41): Prob(response rate> 12%|data)>0.96; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

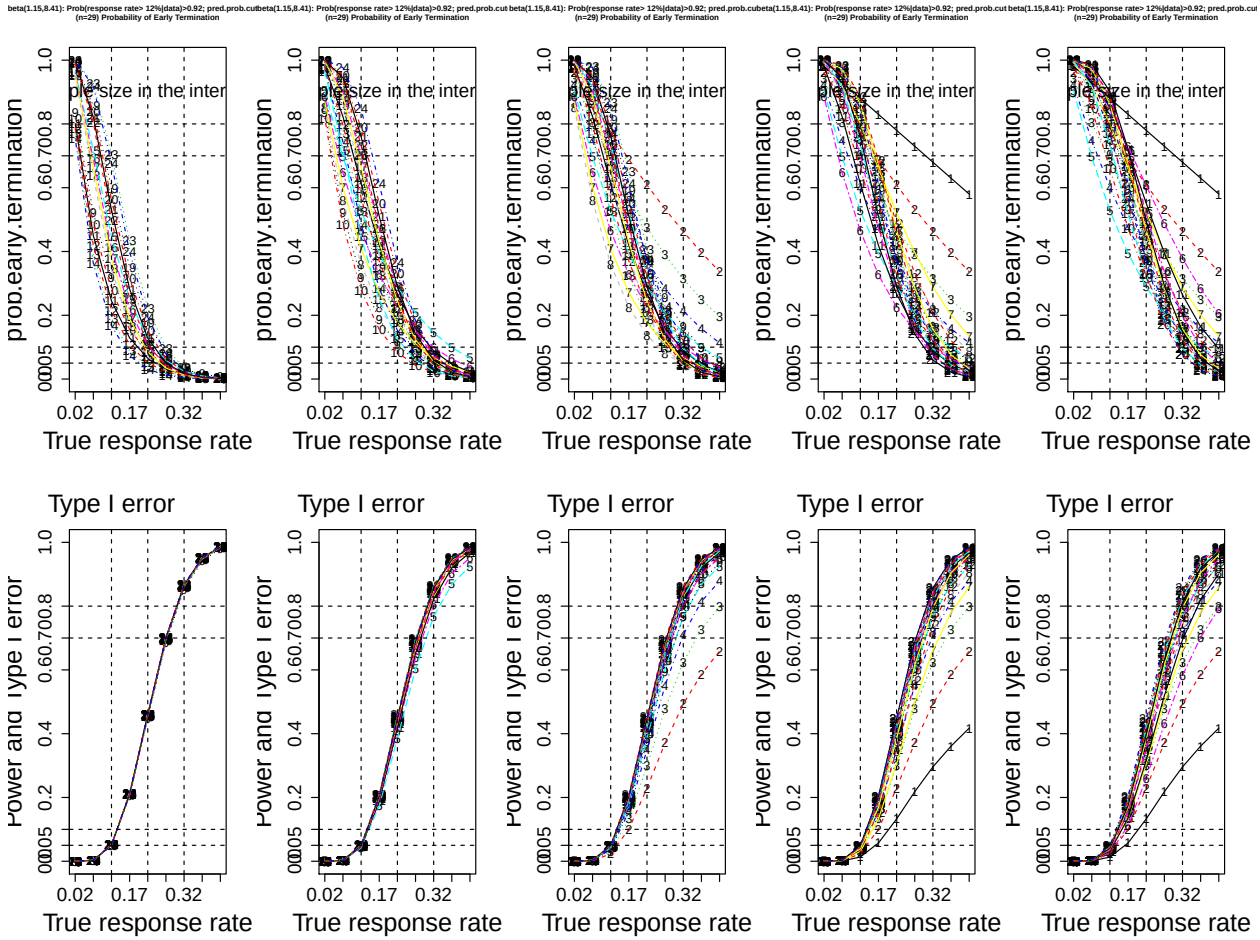

beta(1.15,8.41): Prob(response rate> 12%|data)>0.97; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

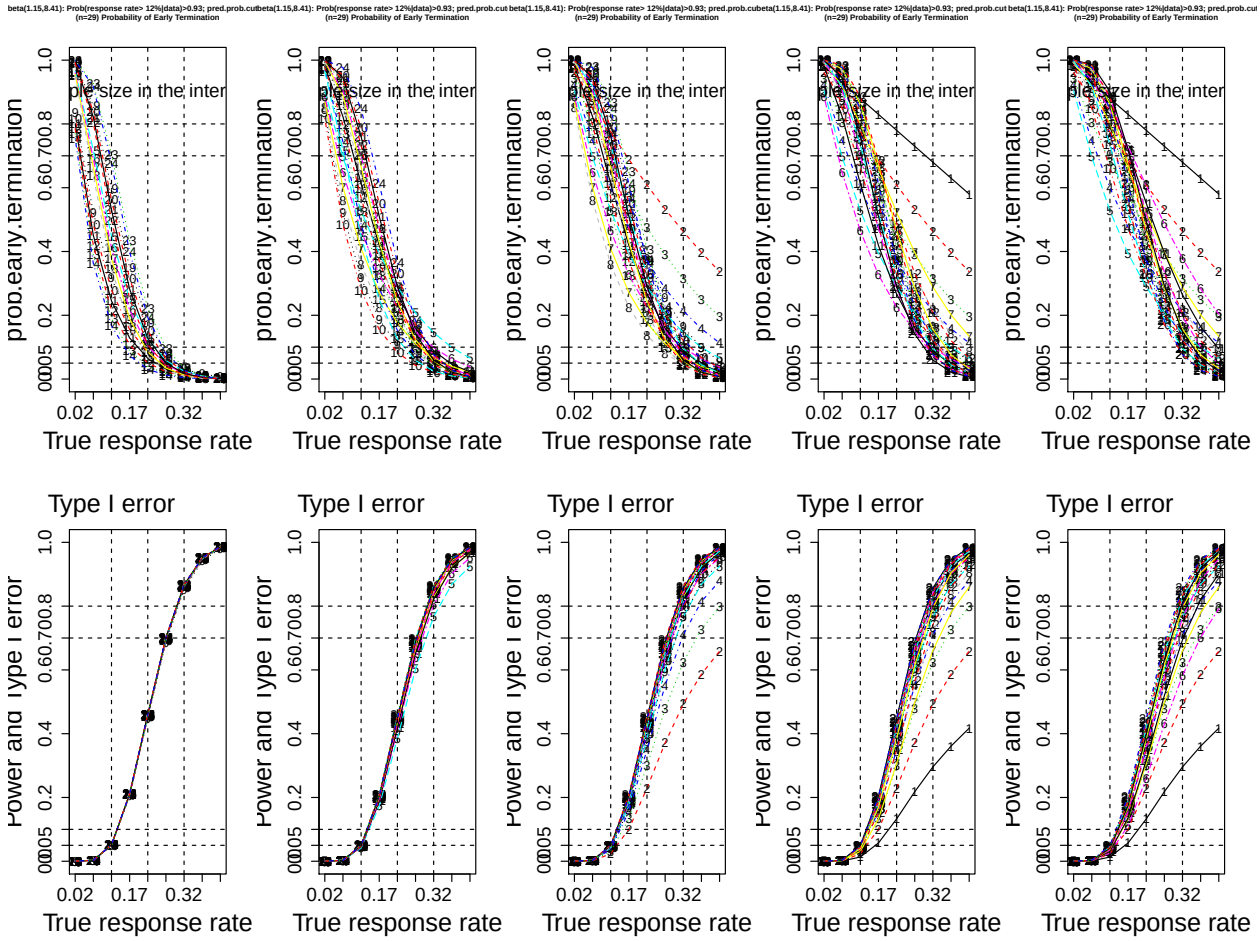

beta(1.15,8.41): Prob(response rate> 12%|data)>0.98; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

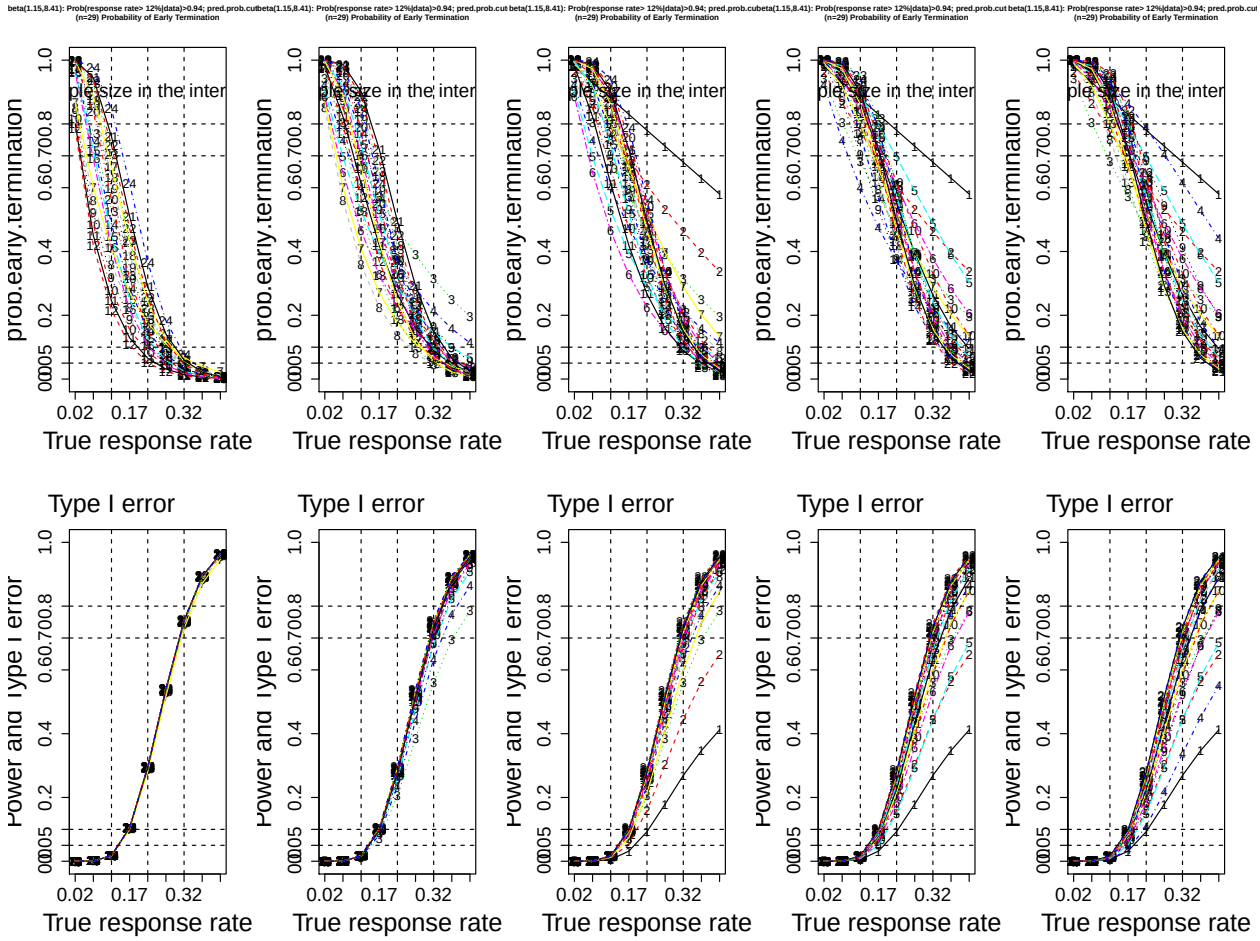

beta(1.15,8.41): Prob(response rate> 12%|data)>0.99; pred.prob.cut
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

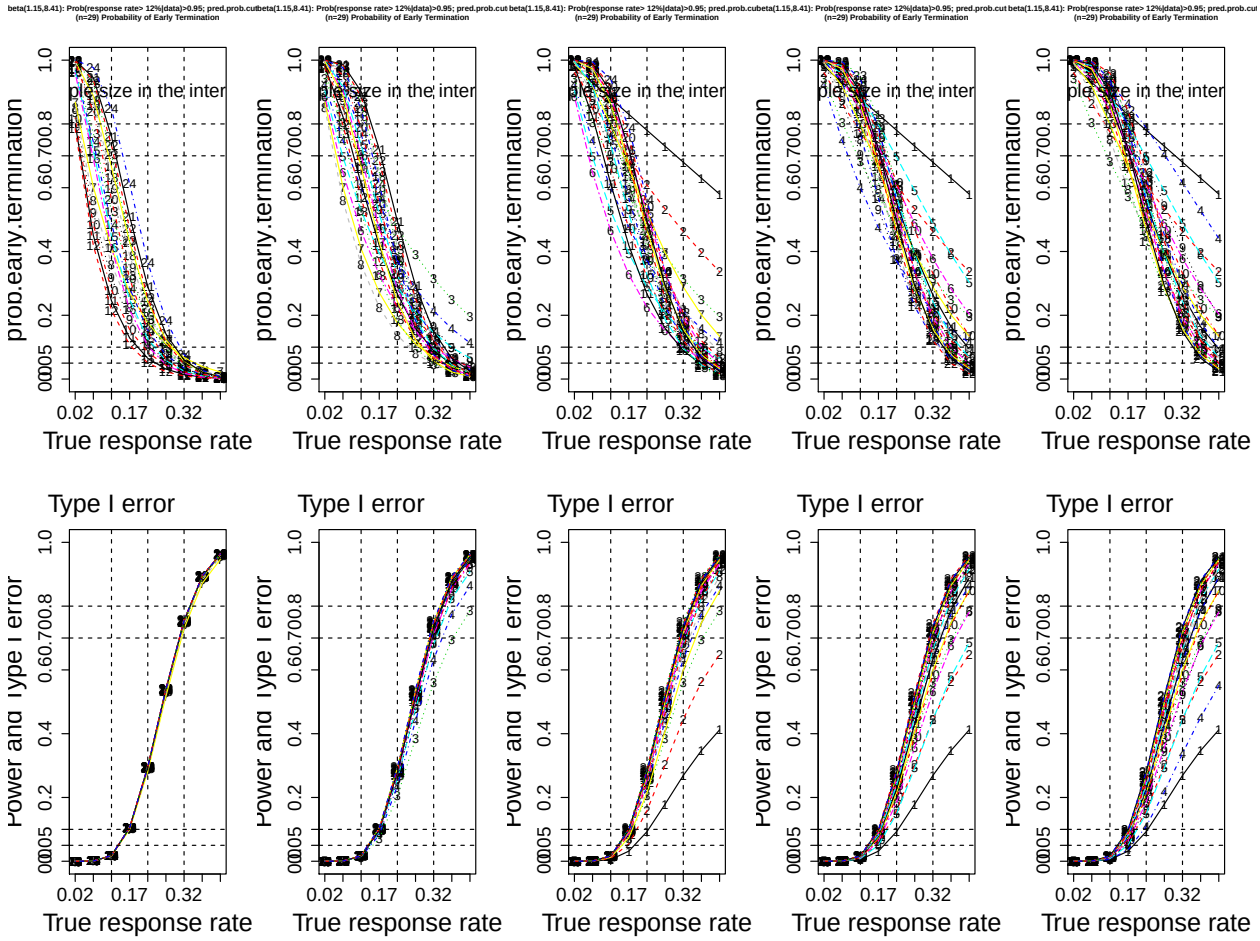

beta(1.15,8.41): Prob(response rate> 12%|data)>0.9; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.00
0.05
0.2
0.4
0.60
0.70
0.8
1.0

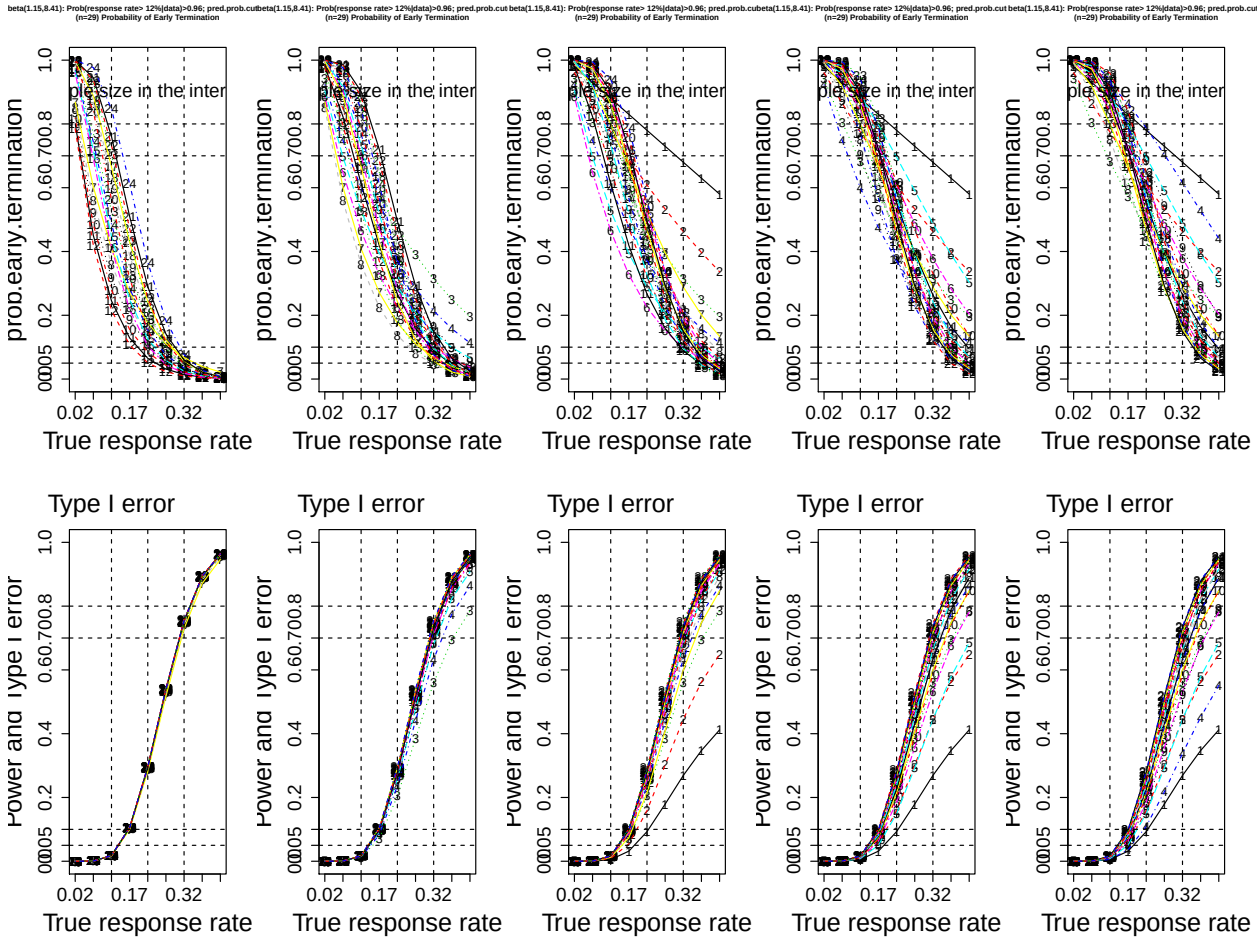

beta(1.15,8.41): Prob(response rate> 12%|data)>0.91; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

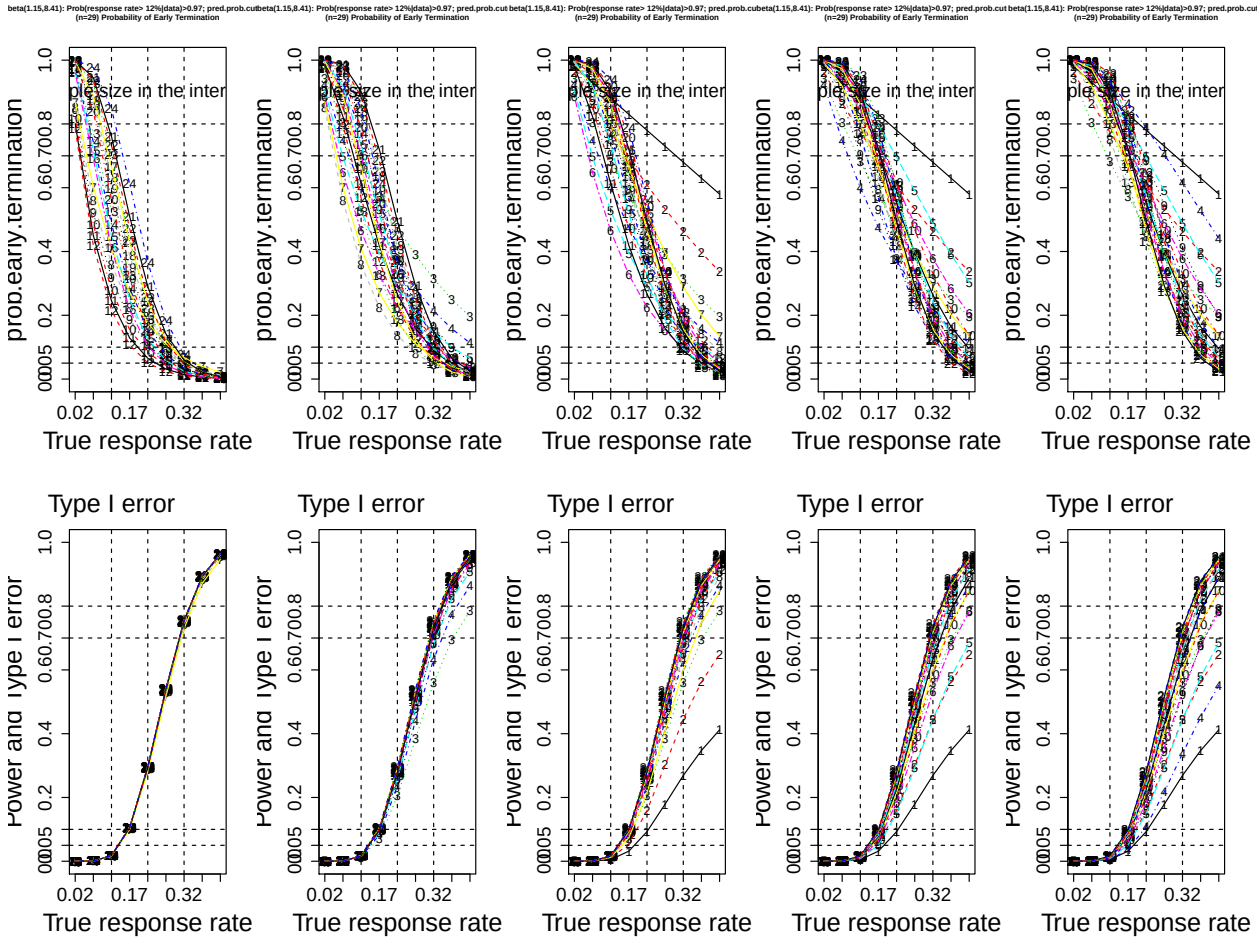

beta(1.15,8.41): Prob(response rate> 12%|data)>0.92; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

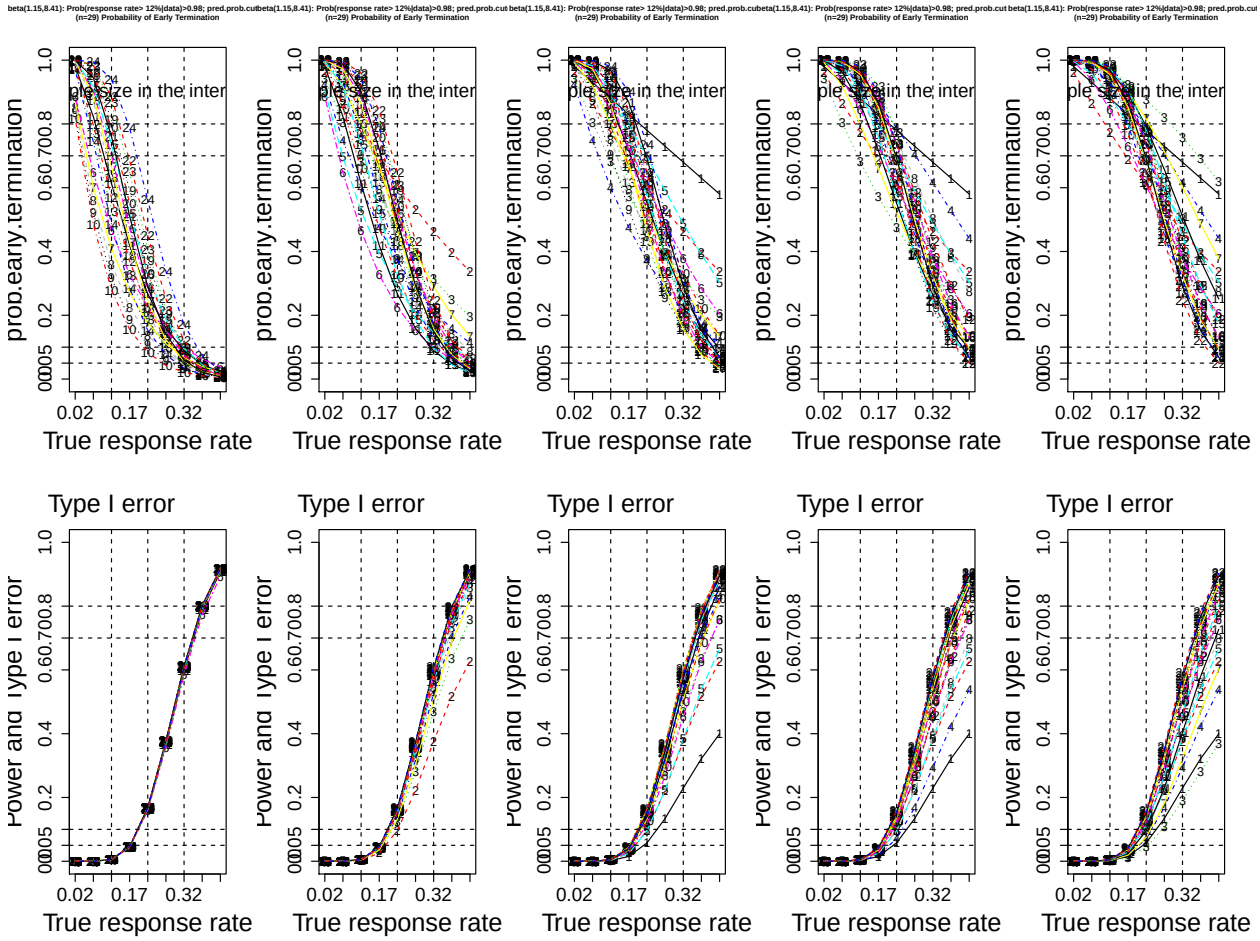

beta(1.15,8.41): Prob(response rate> 12%|data)>0.93; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

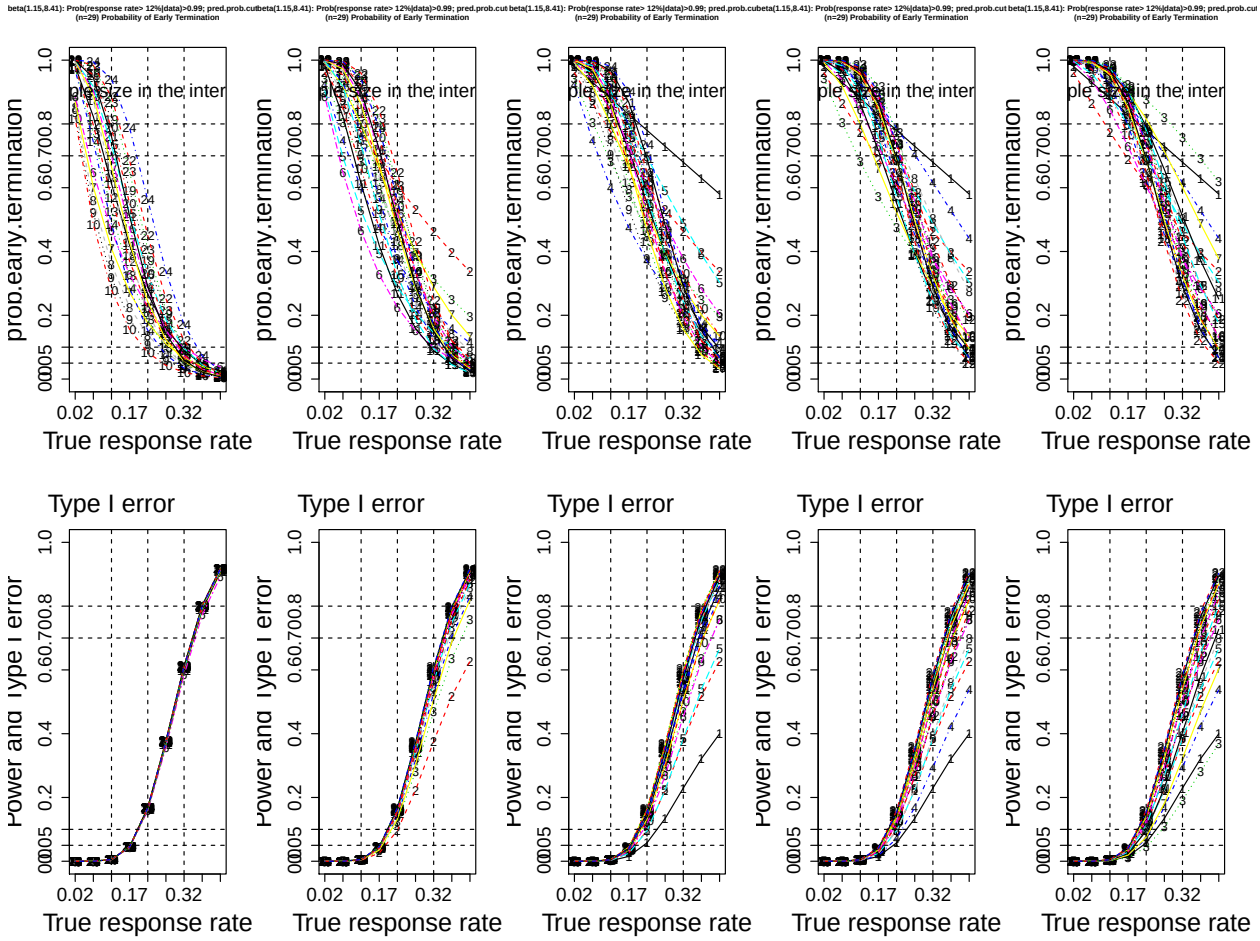

beta(1.15,8.41): Prob(response rate> 12%|data)>0.94; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

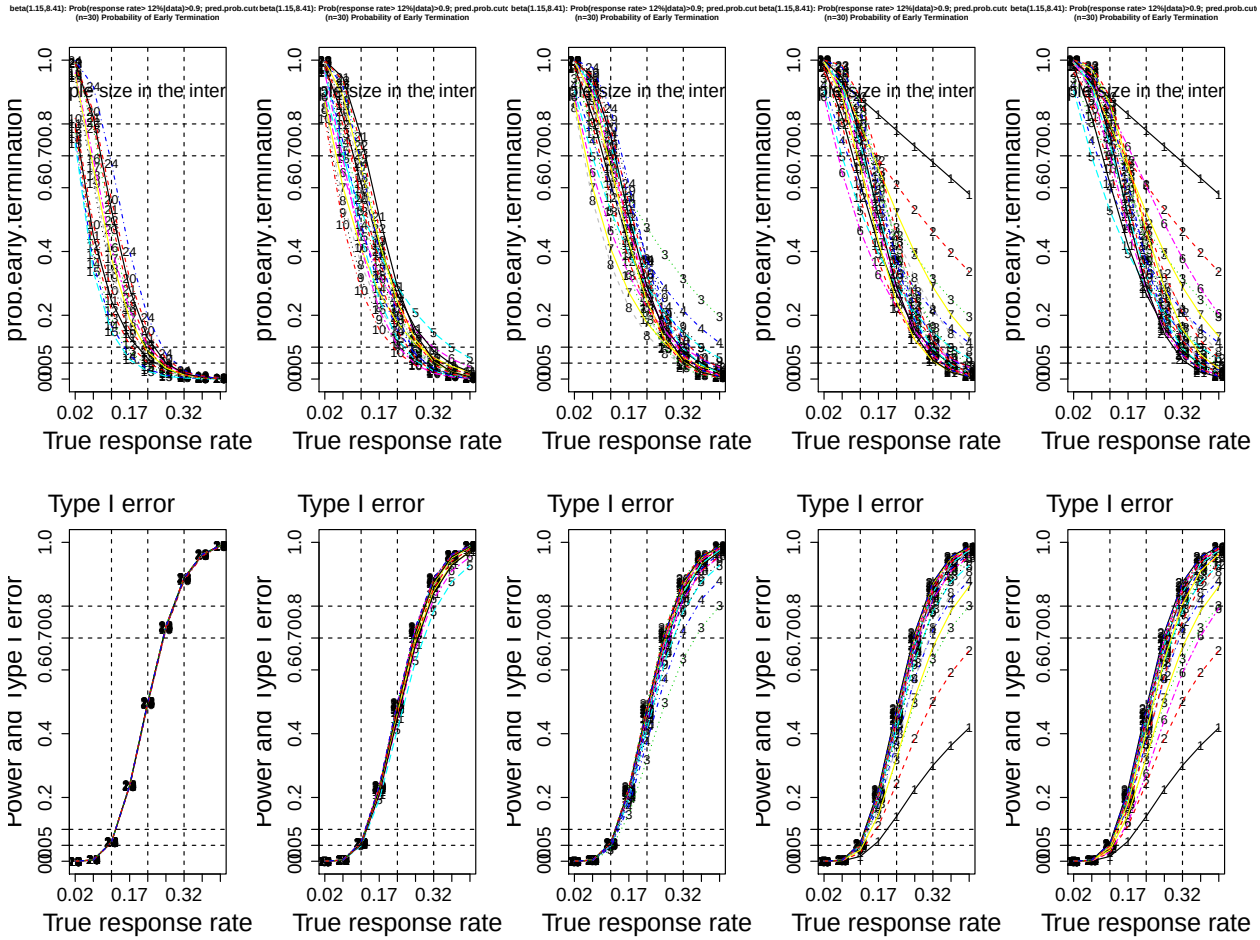

beta(1.15,8.41): Prob(response rate> 12%|data)>0.95; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

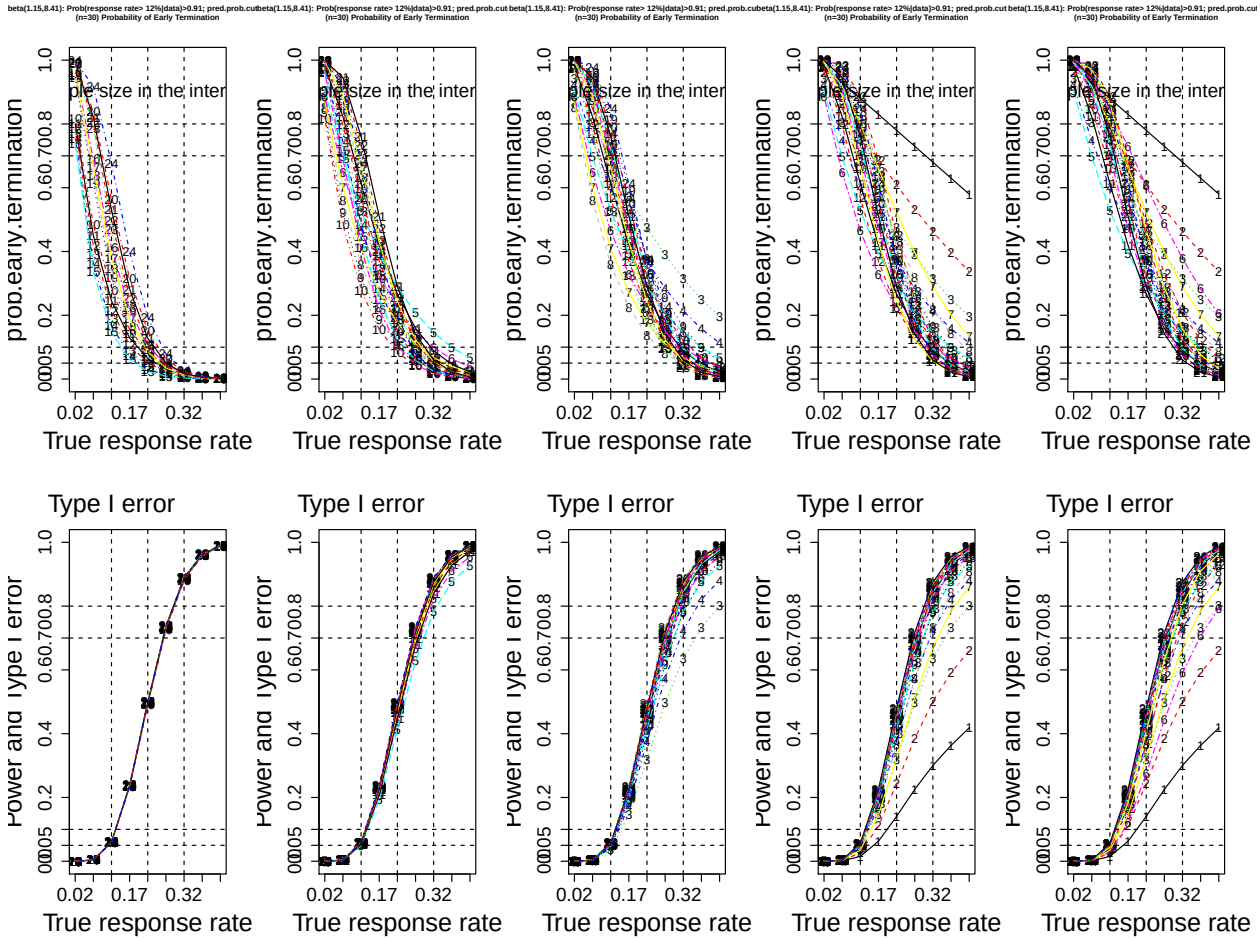

beta(1.15,8.41): Prob(response rate> 12%|data)>0.96; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.00
0.05
0.2
0.4
0.6
0.7
0.8
1.0

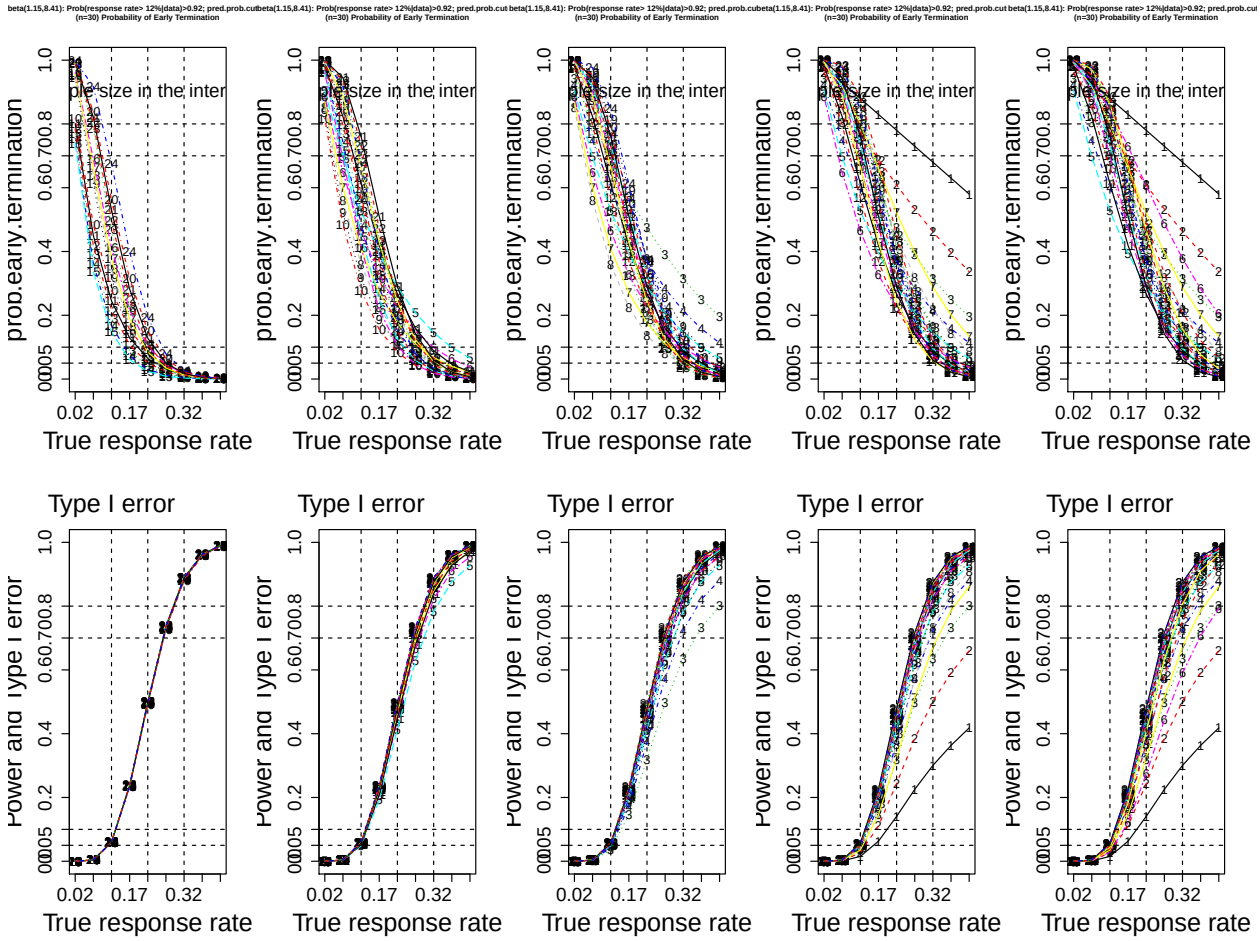

beta(1.15,8.41): Prob(response rate> 12%|data)>0.97; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

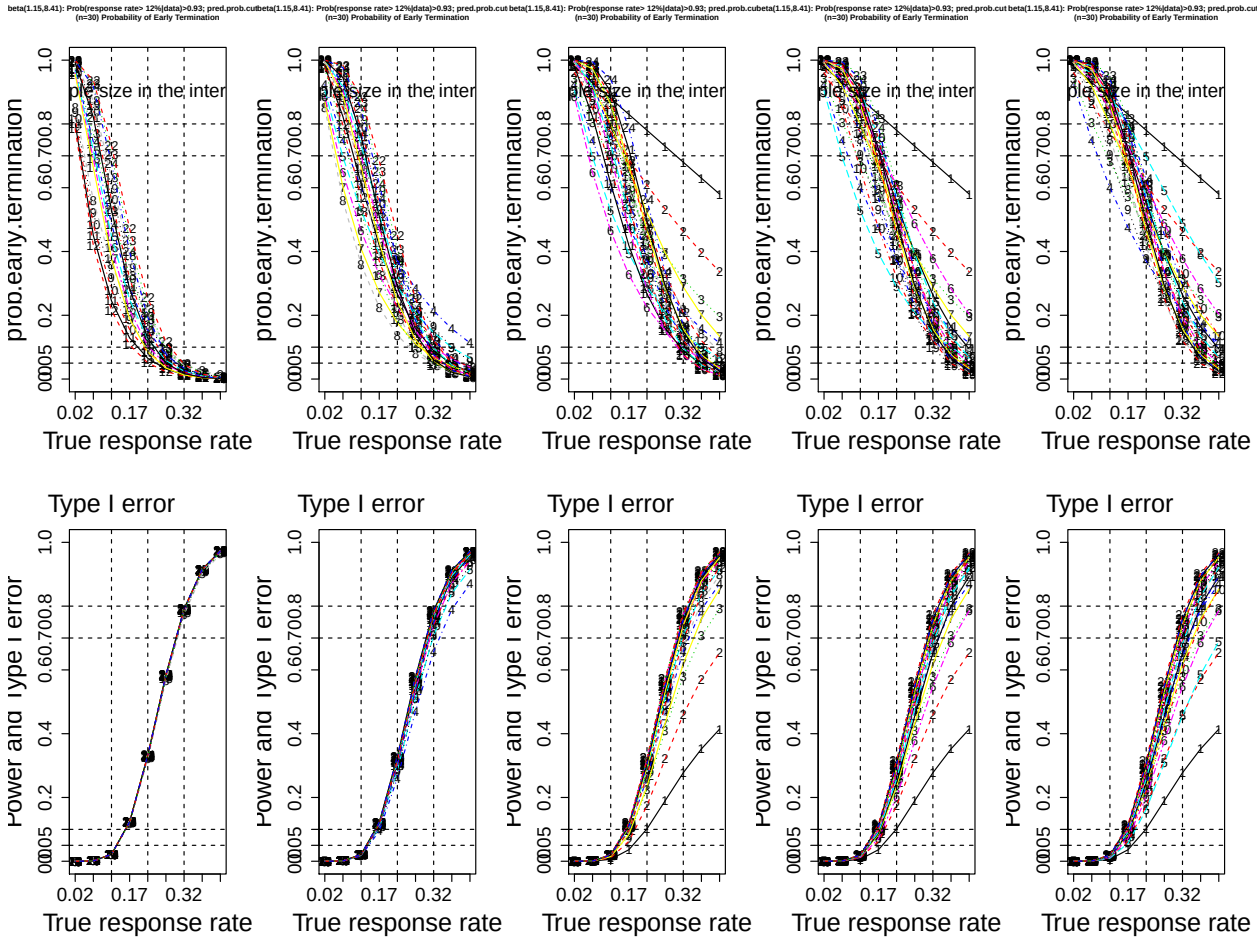

beta(1.15,8.41): Prob(response rate> 12%|data)>0.98; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

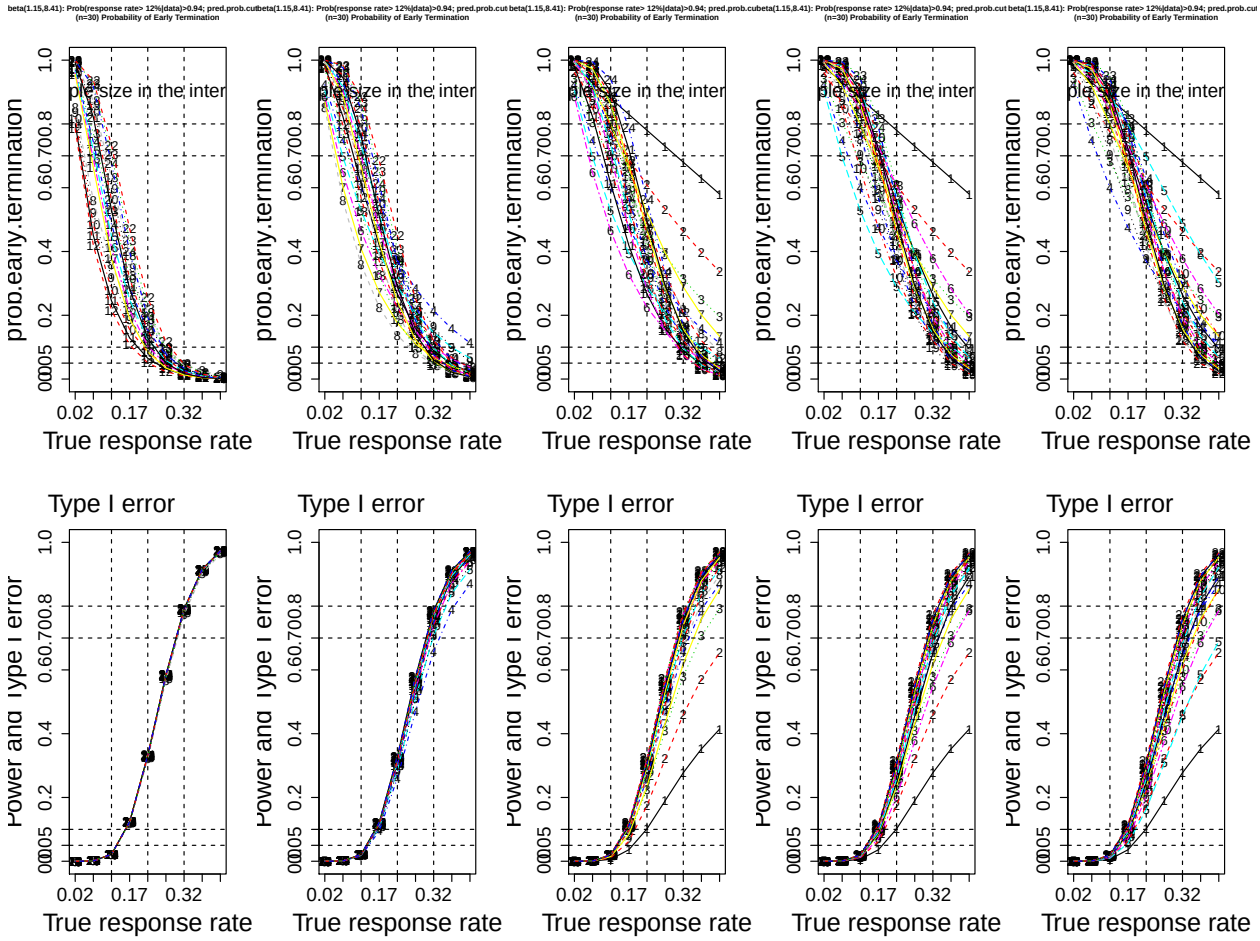

beta(1.15,8.41): Prob(response rate> 12%|data)>0.99; pred.prob.cut
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

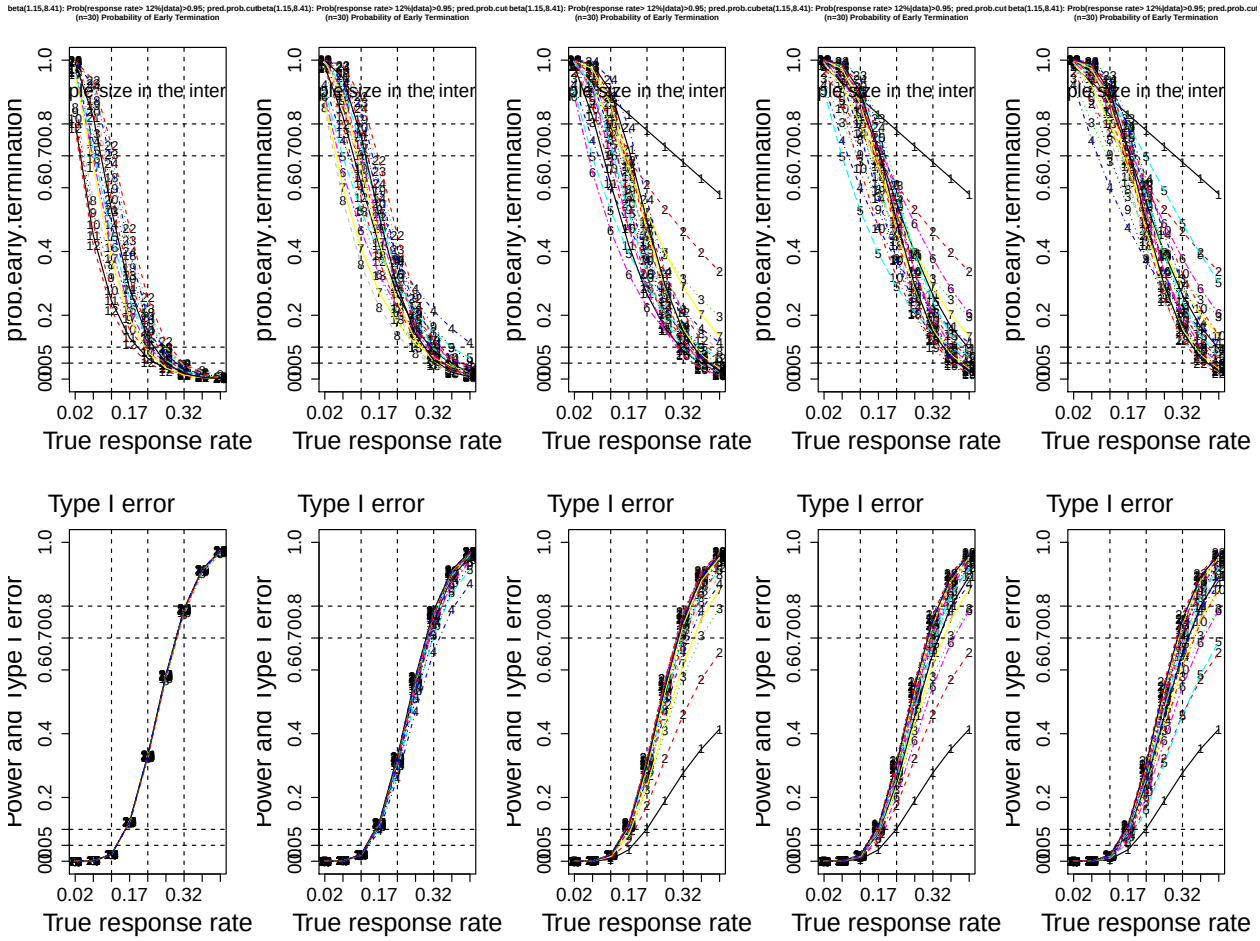

beta(1.15,8.41): Prob(response rate> 12%|data)>0.9; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

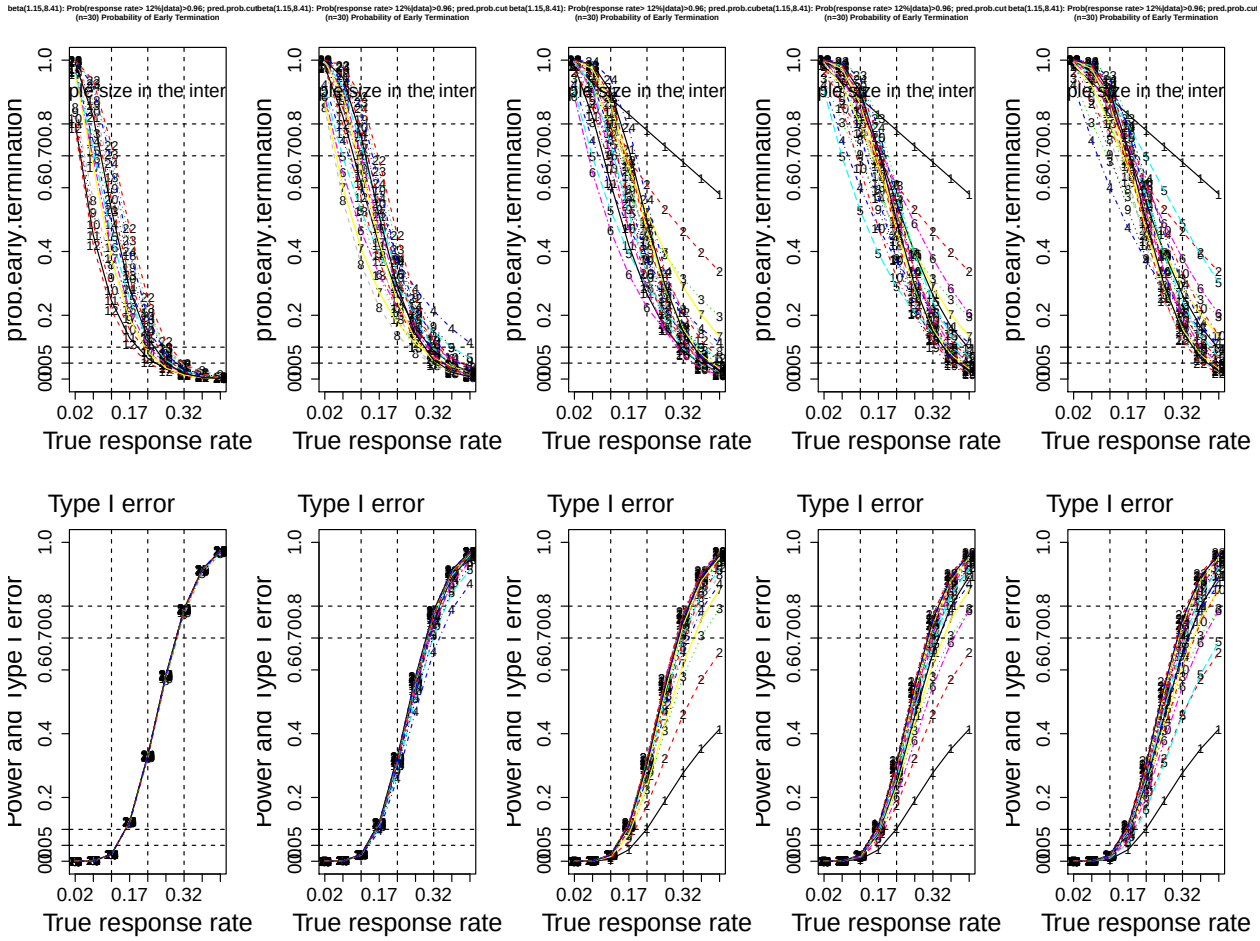

beta(1.15,8.41): Prob(response rate> 12%|data)>0.91; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

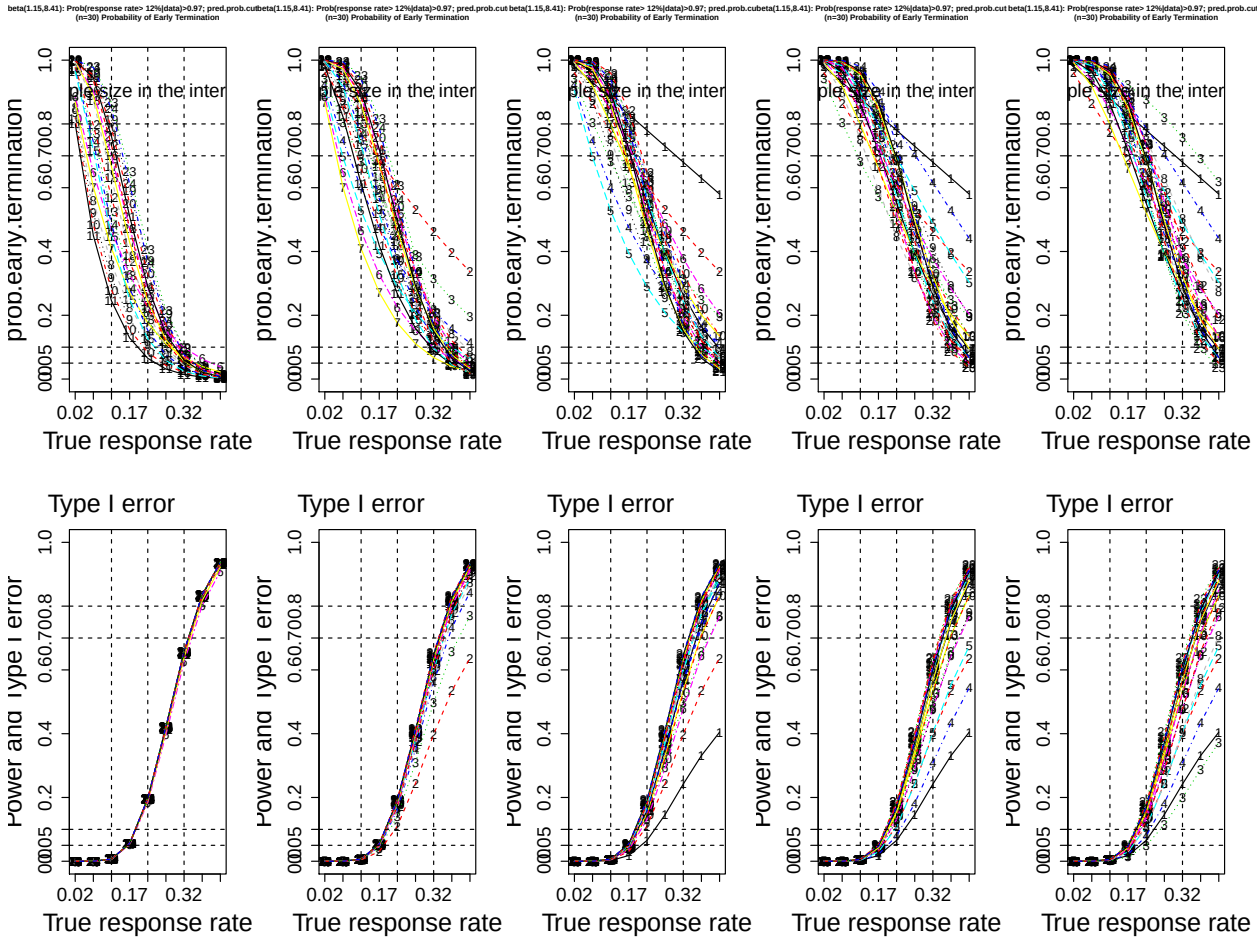

beta(1.15,8.41): Prob(response rate> 12%|data)>0.92; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

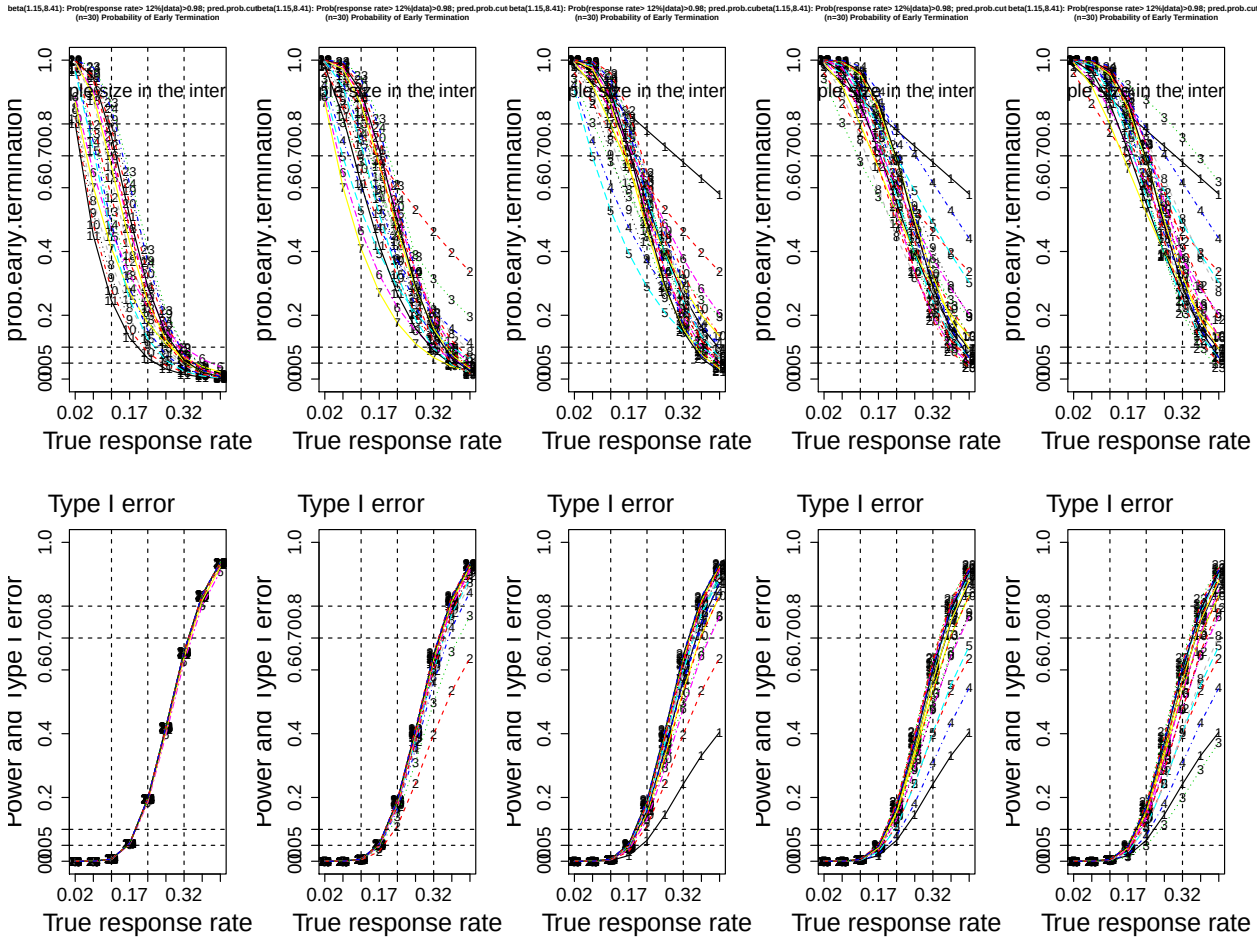

beta(1.15,8.41): Prob(response rate> 12%|data)>0.93; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

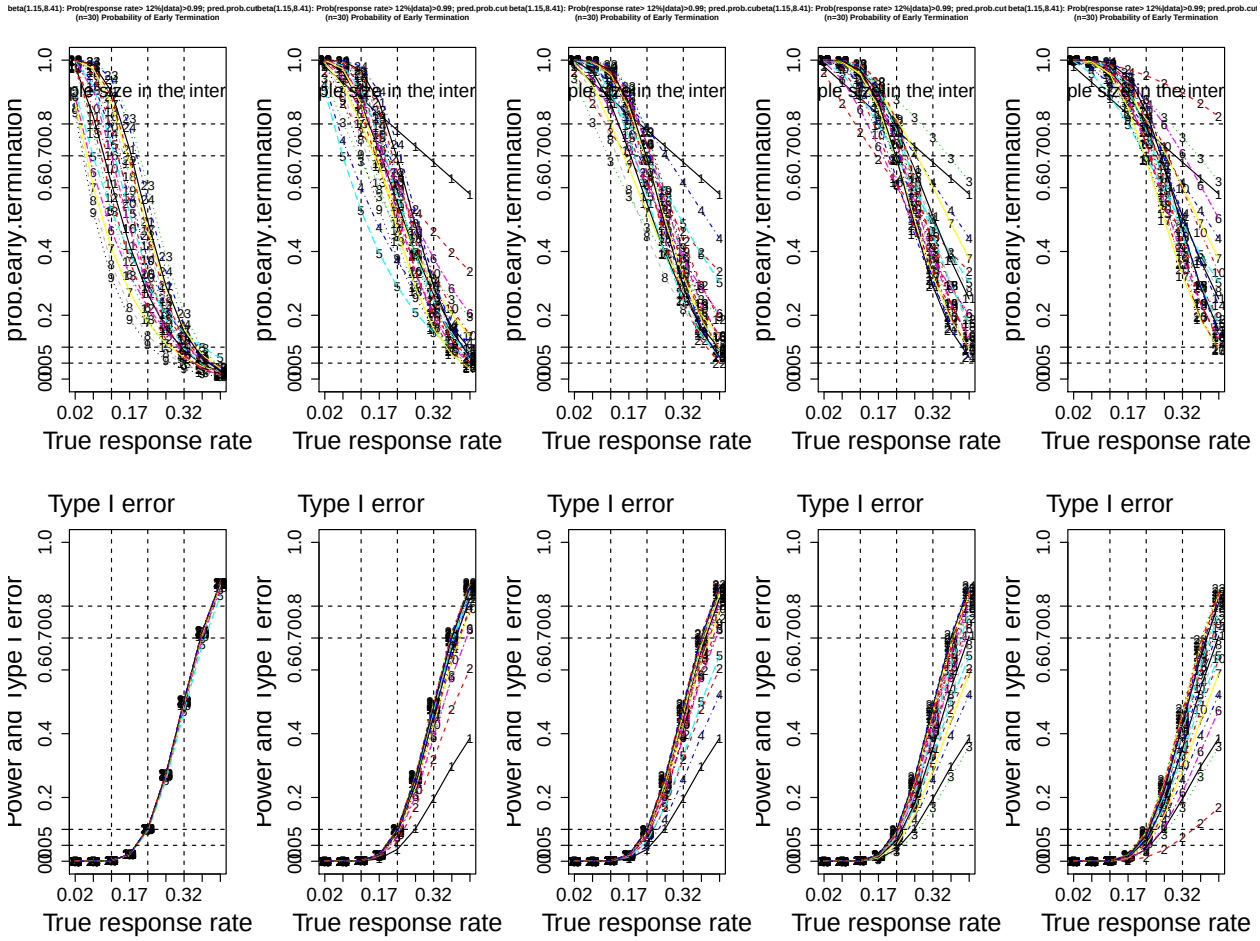

beta(1.15,8.41): Prob(response rate> 12%|data)>0.94; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

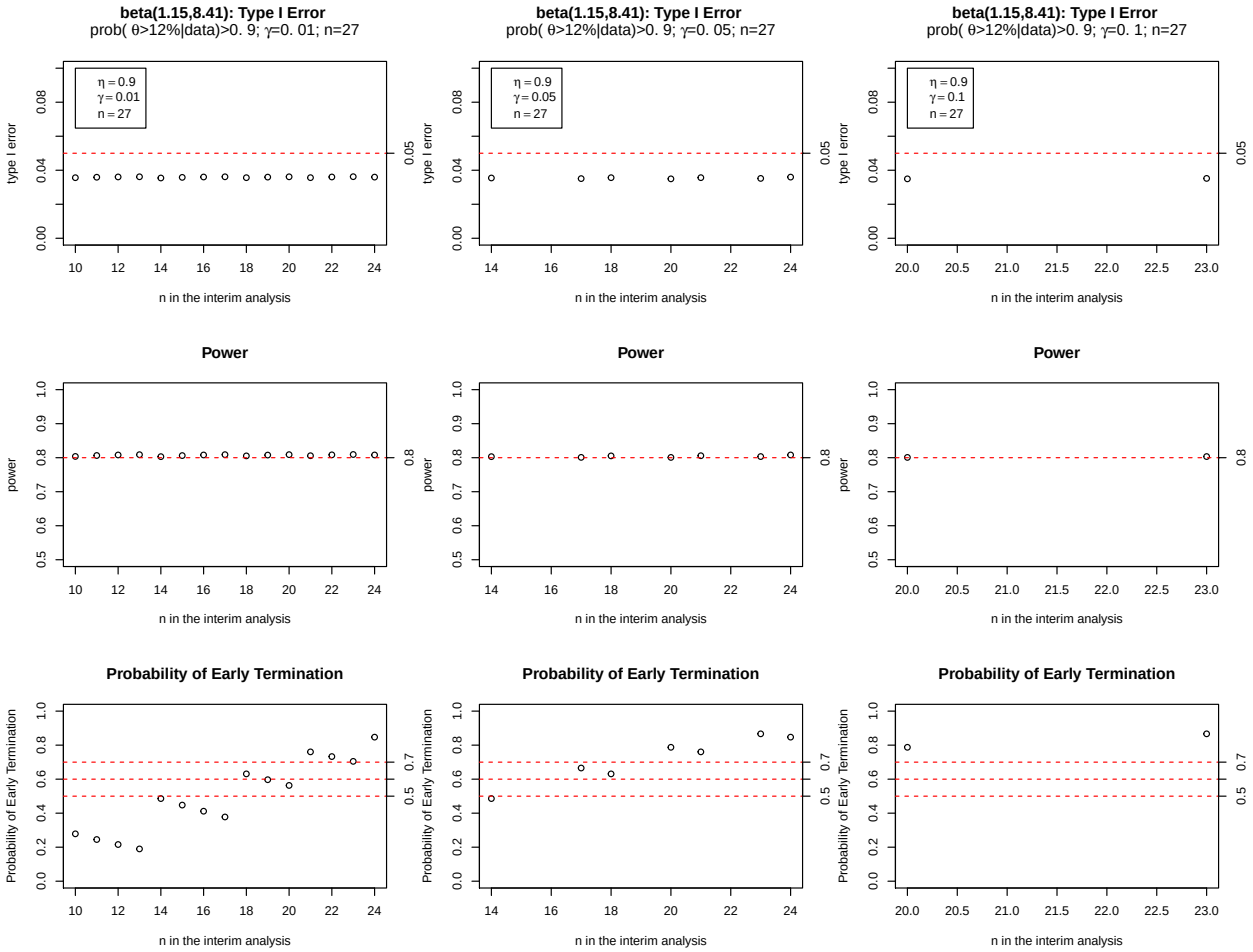

beta(1.15,8.41): Prob(response rate> 12%|data)>0.95; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.00
0.05
0.2
0.4
0.60
0.70
0.8
1.0

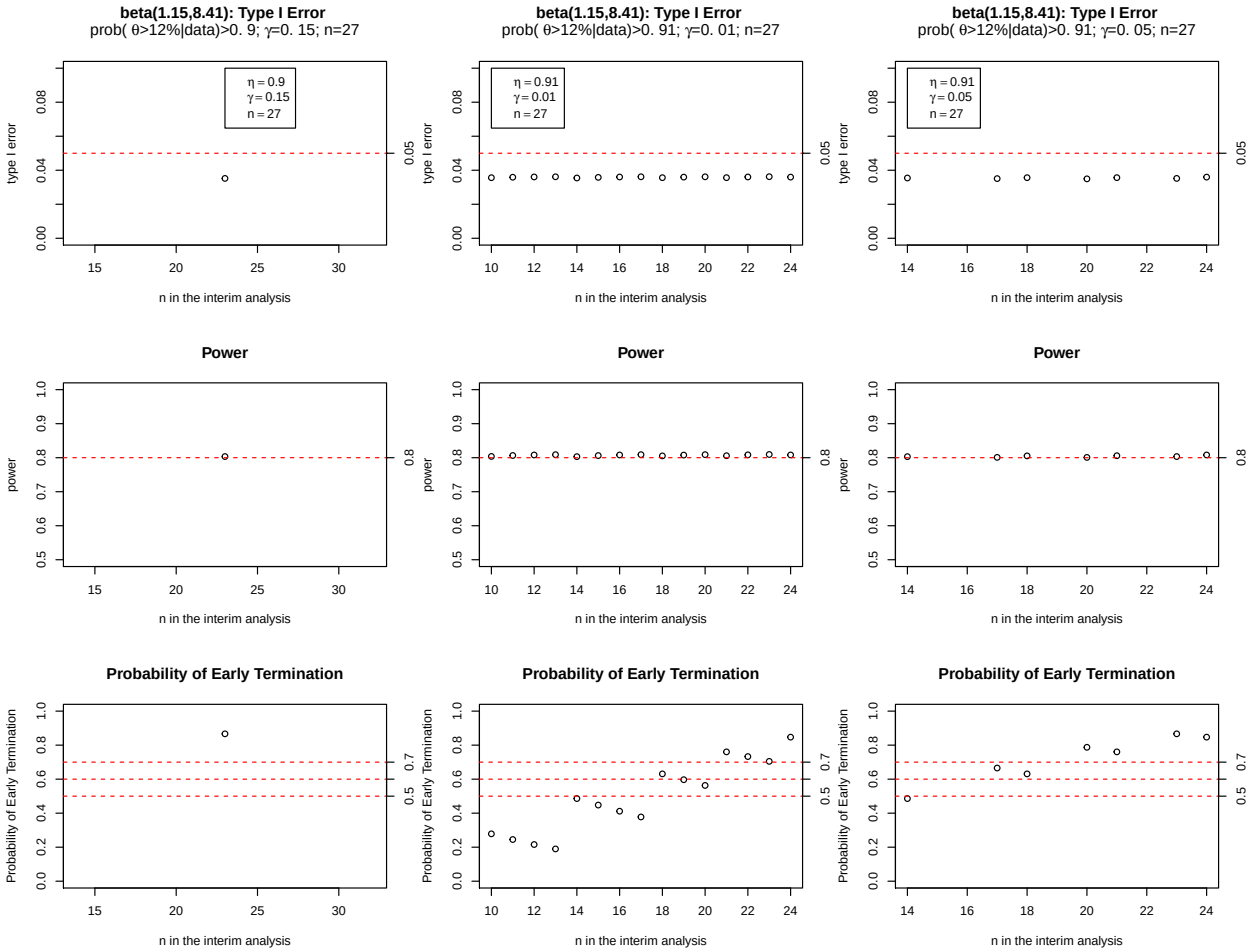

beta(1.15,8.41): Prob(response rate> 12%|data)>0.96; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

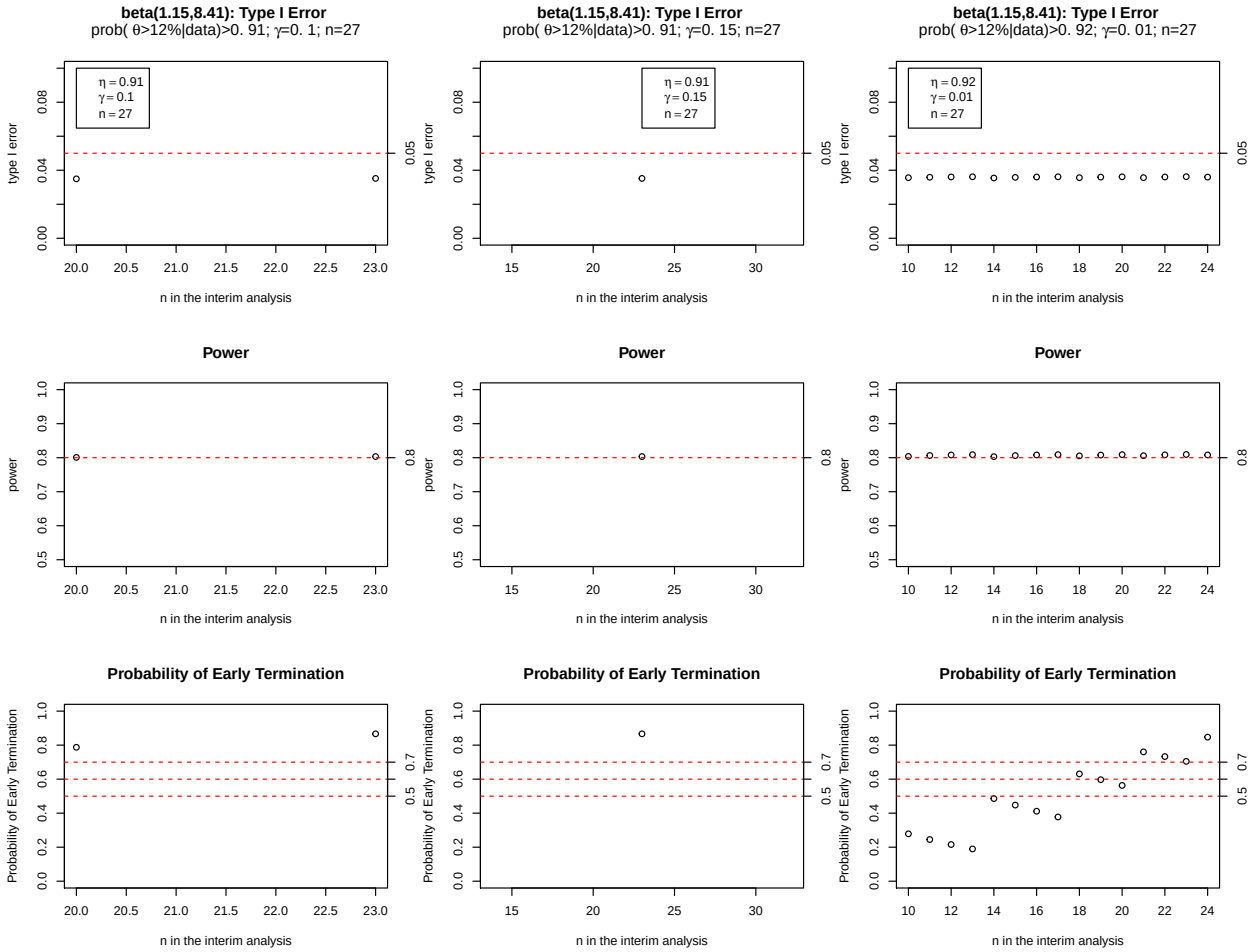

beta(1.15,8.41): Prob(response rate> 12%|data)>0.97; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

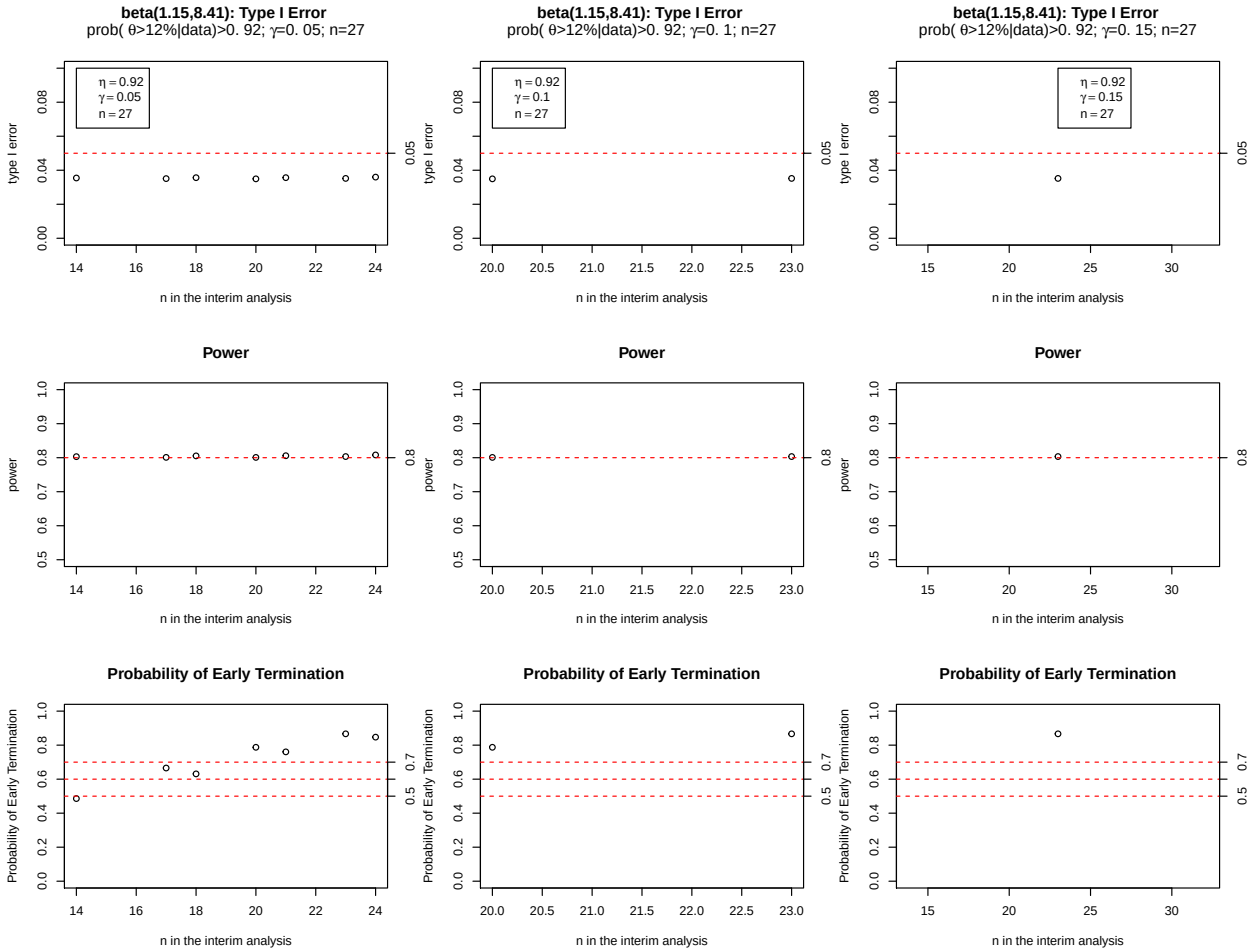

beta(1.15,8.41): Prob(response rate> 12%|data)>0.98; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

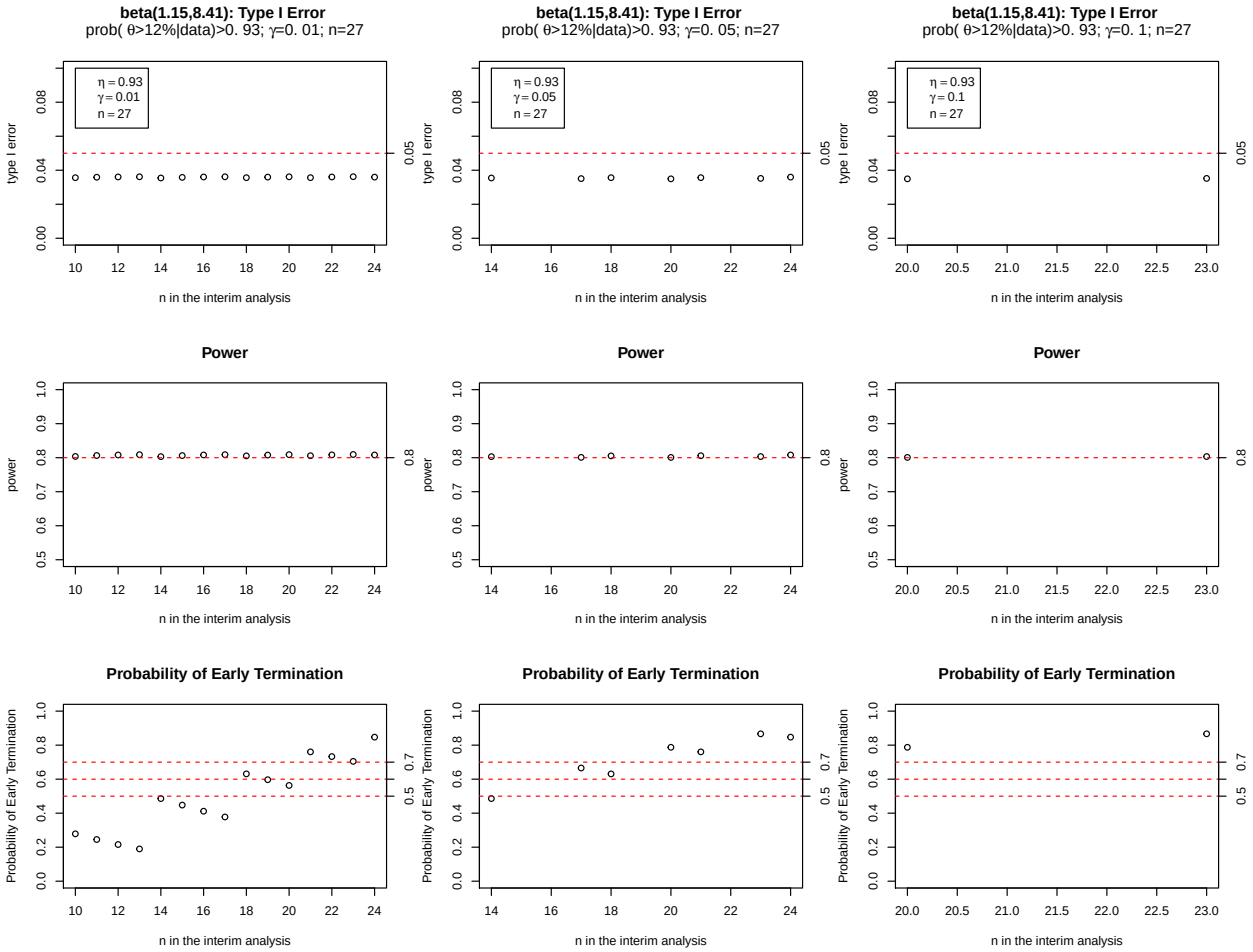

beta(1.15,8.41): Prob(response rate> 12%|data)>0.99; pred.prob.cut
(n=30) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

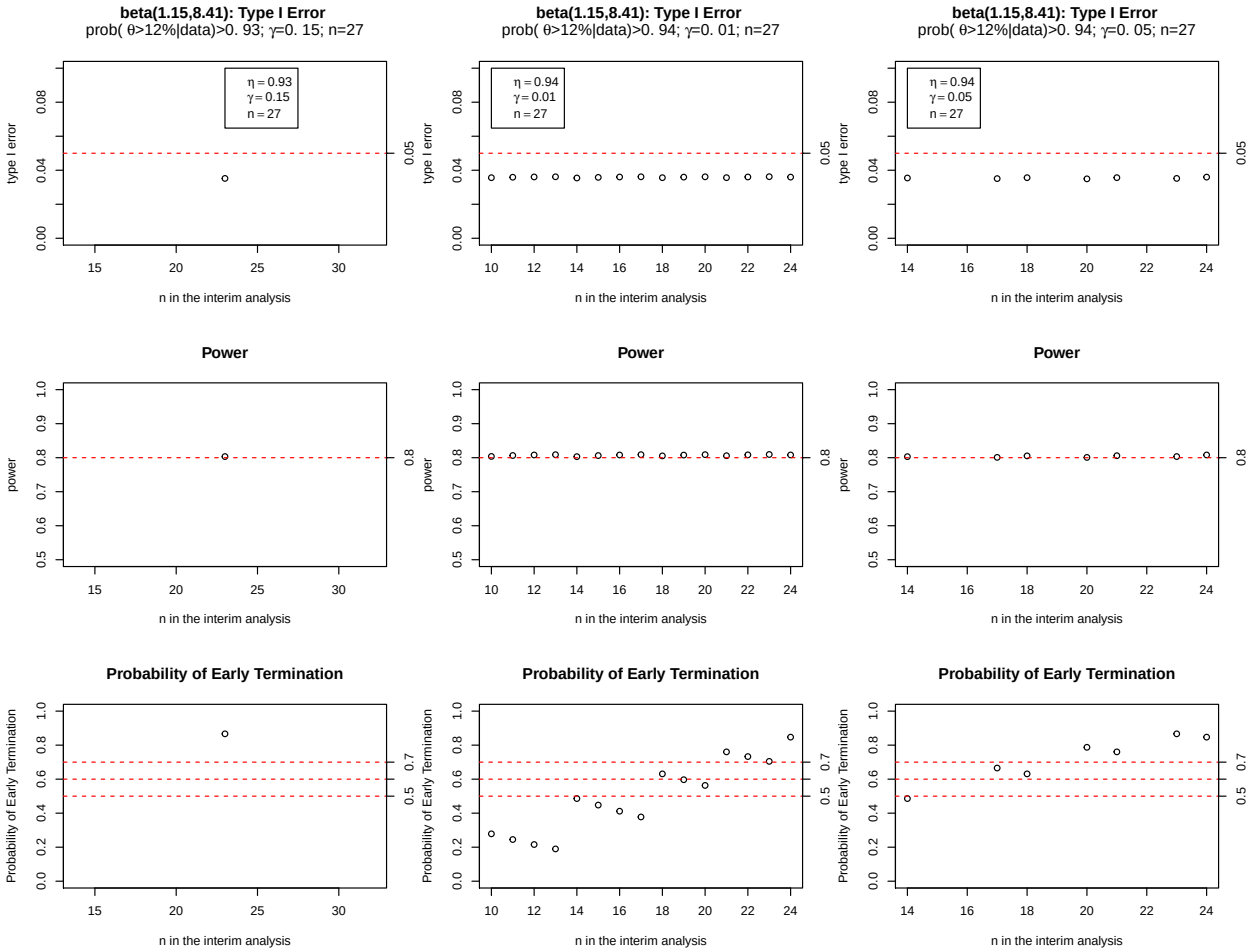

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 01; n=27
η = 0.9
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 05; n=27
η = 0.9
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=27
η = 0.9
γ = 0.1
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

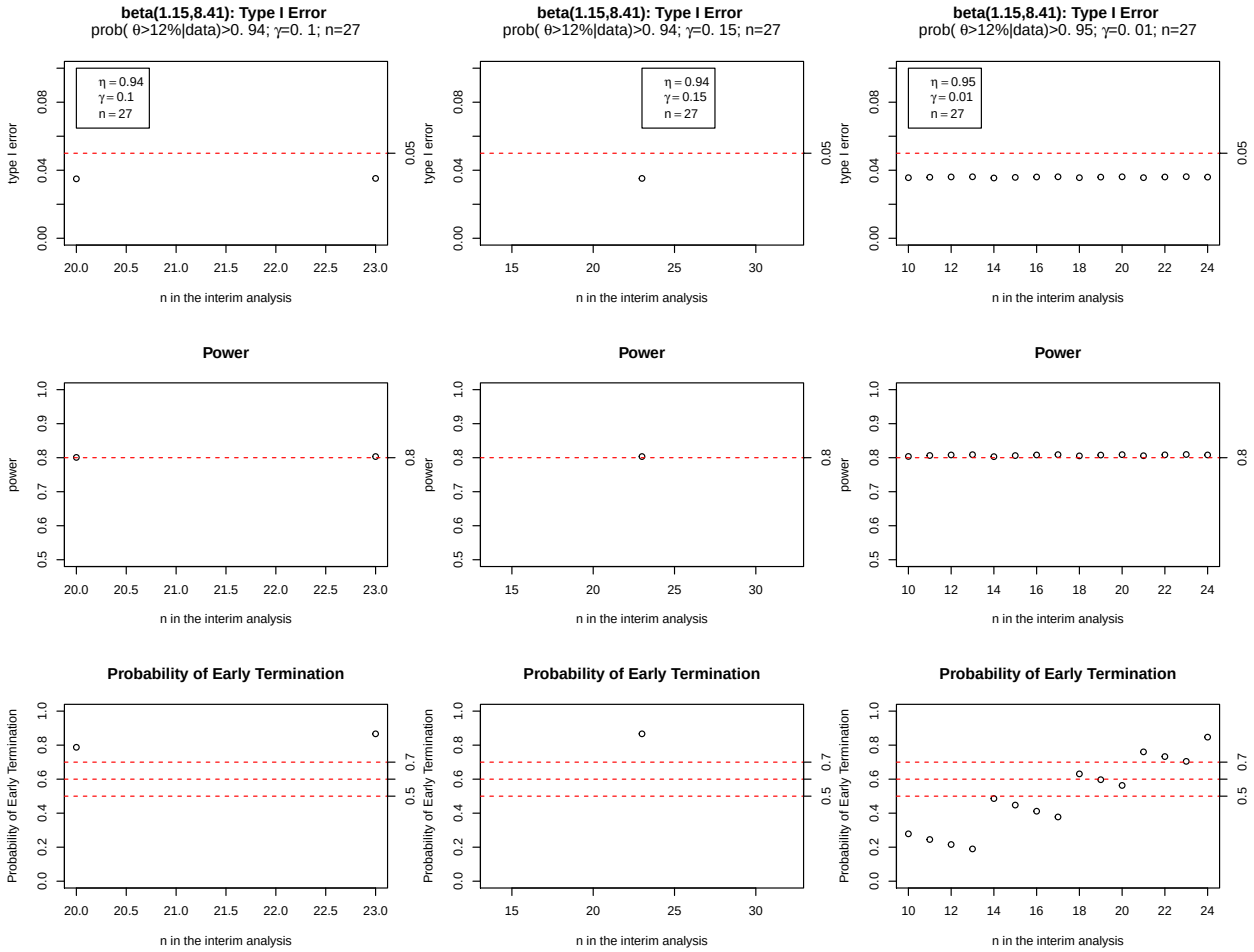

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=27
η = 0.9
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 01; n=27
η = 0.91
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 05; n=27
η = 0.91
γ = 0.05
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

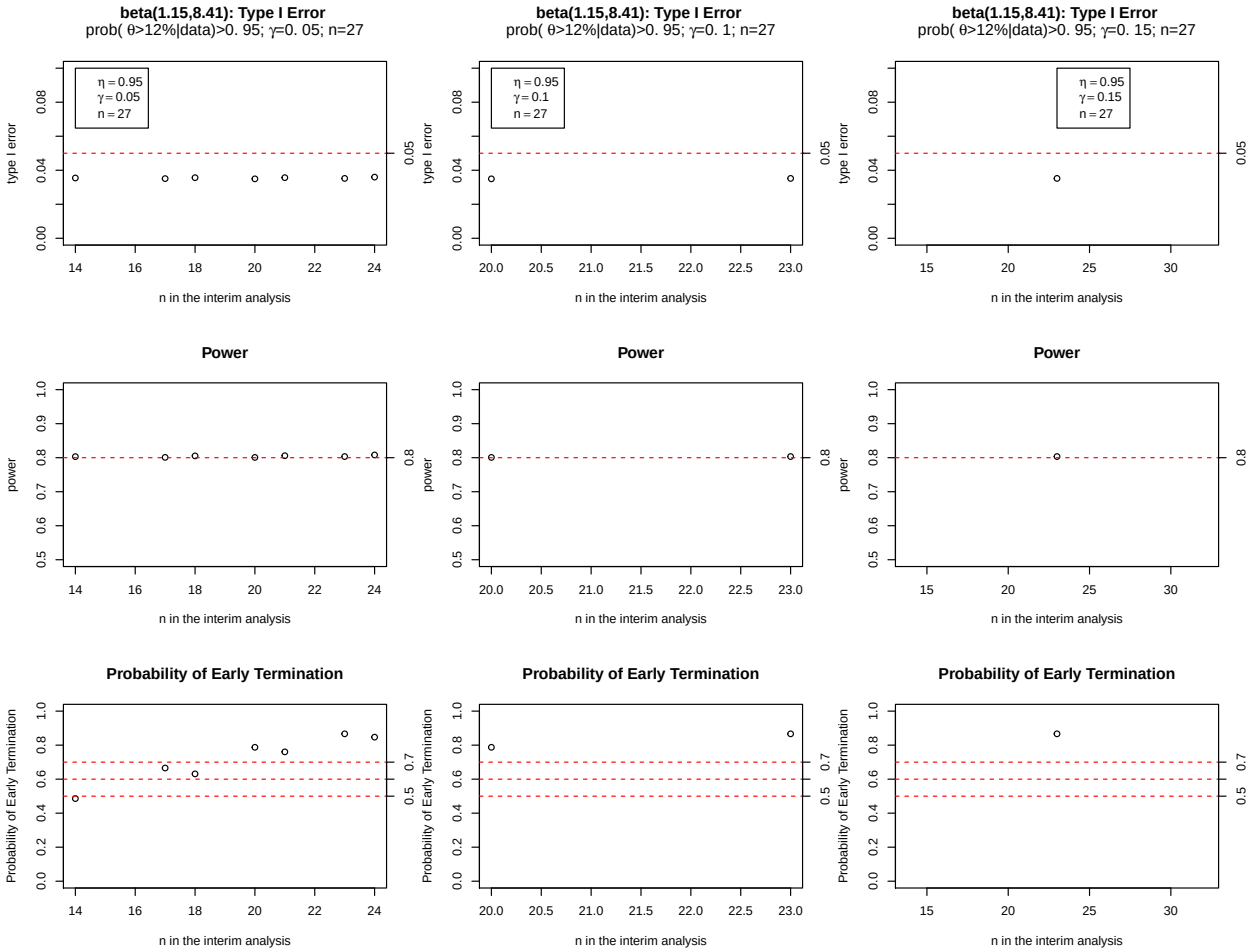

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=27
η = 0.91
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=27
η = 0.91
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=27
η = 0.92
γ = 0.01
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

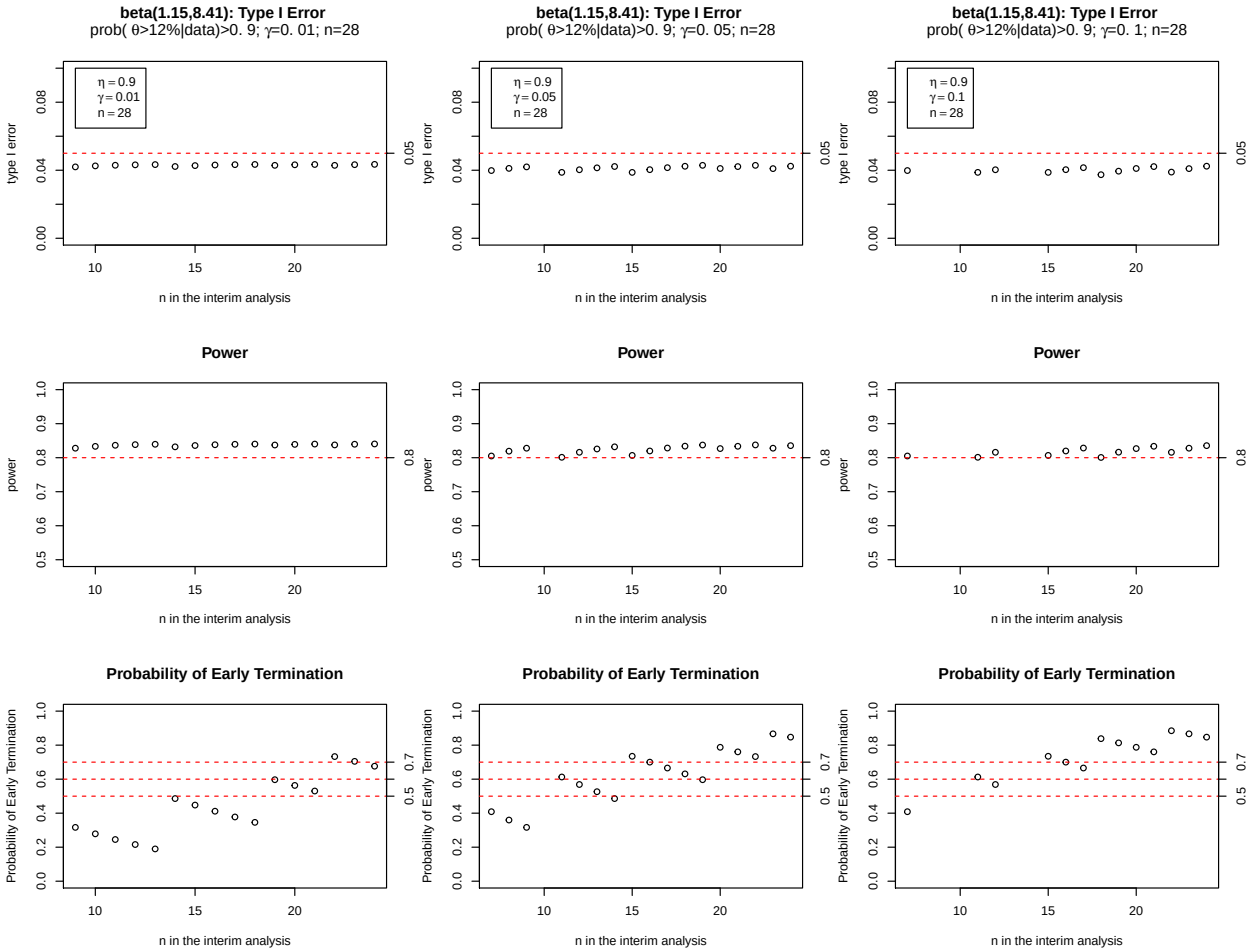

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=27
η = 0.92
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=27
η = 0.92
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=27
η = 0.92
γ = 0.15
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

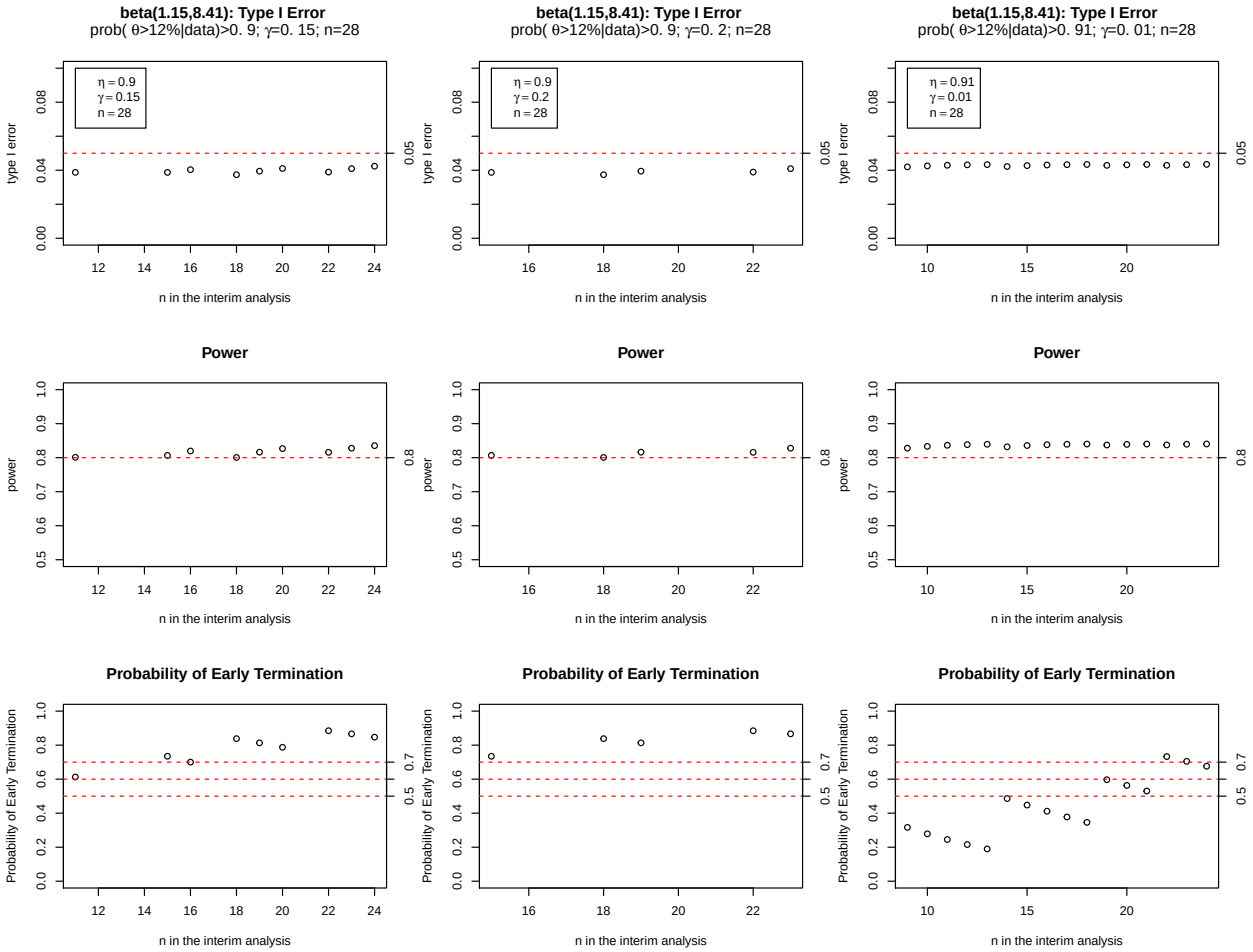

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=27
η = 0.93
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=27
η = 0.93
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=27
η = 0.93
γ = 0.1
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

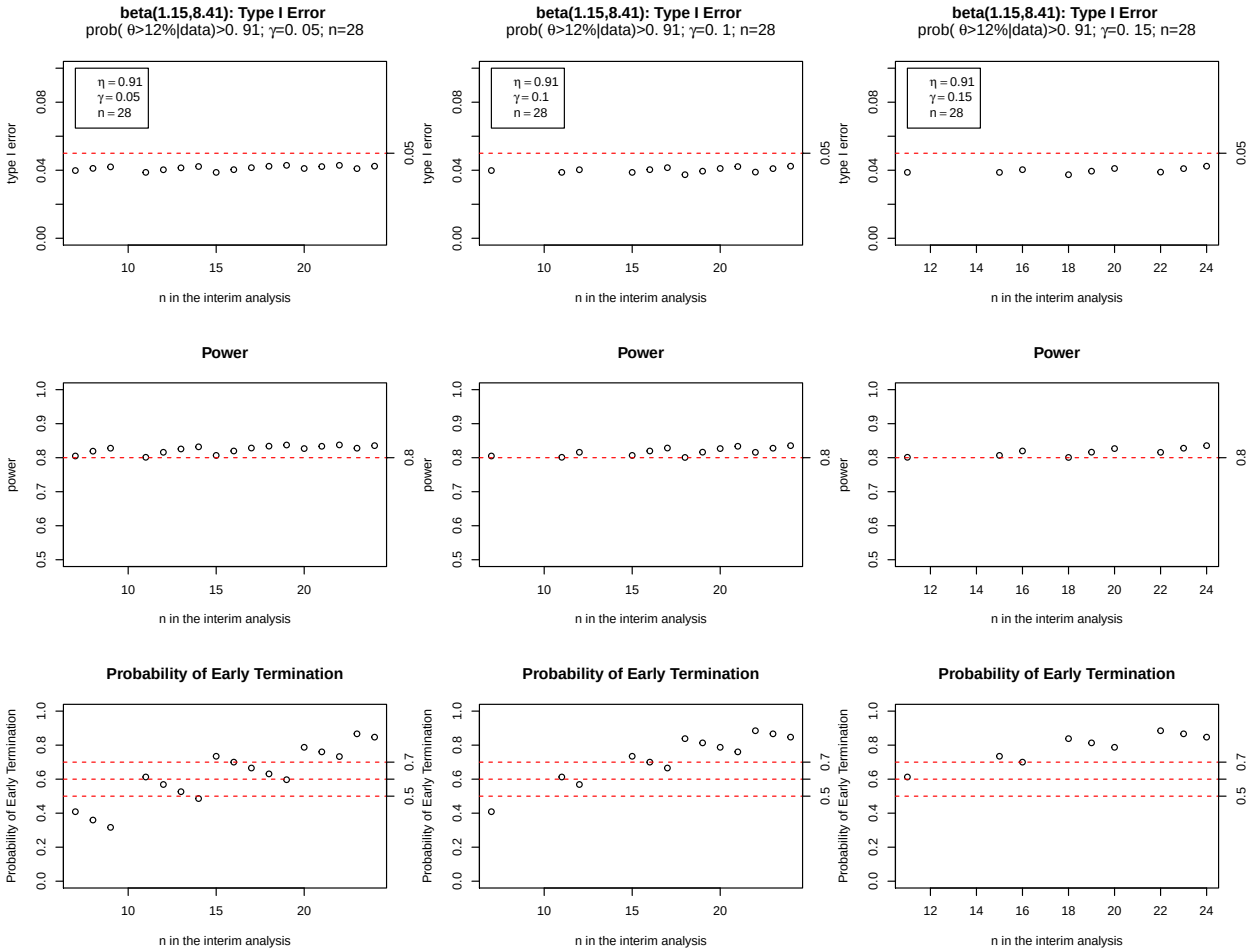

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=27
η = 0.93
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 01; n=27
η = 0.94
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=27
η = 0.94
γ = 0.05
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

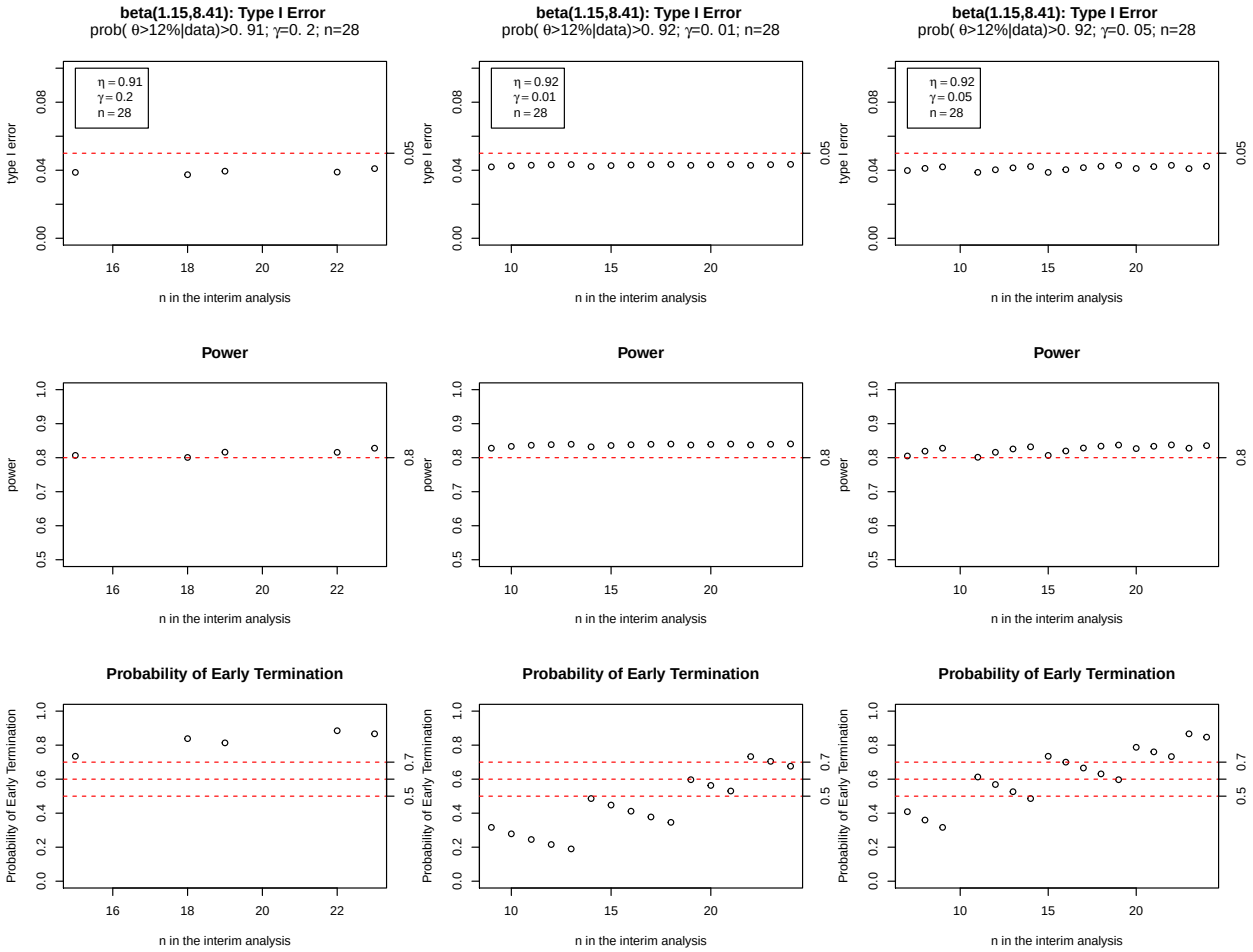

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=27
η = 0.94
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=27
η = 0.94
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 01; n=27
η = 0.95
γ = 0.01
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

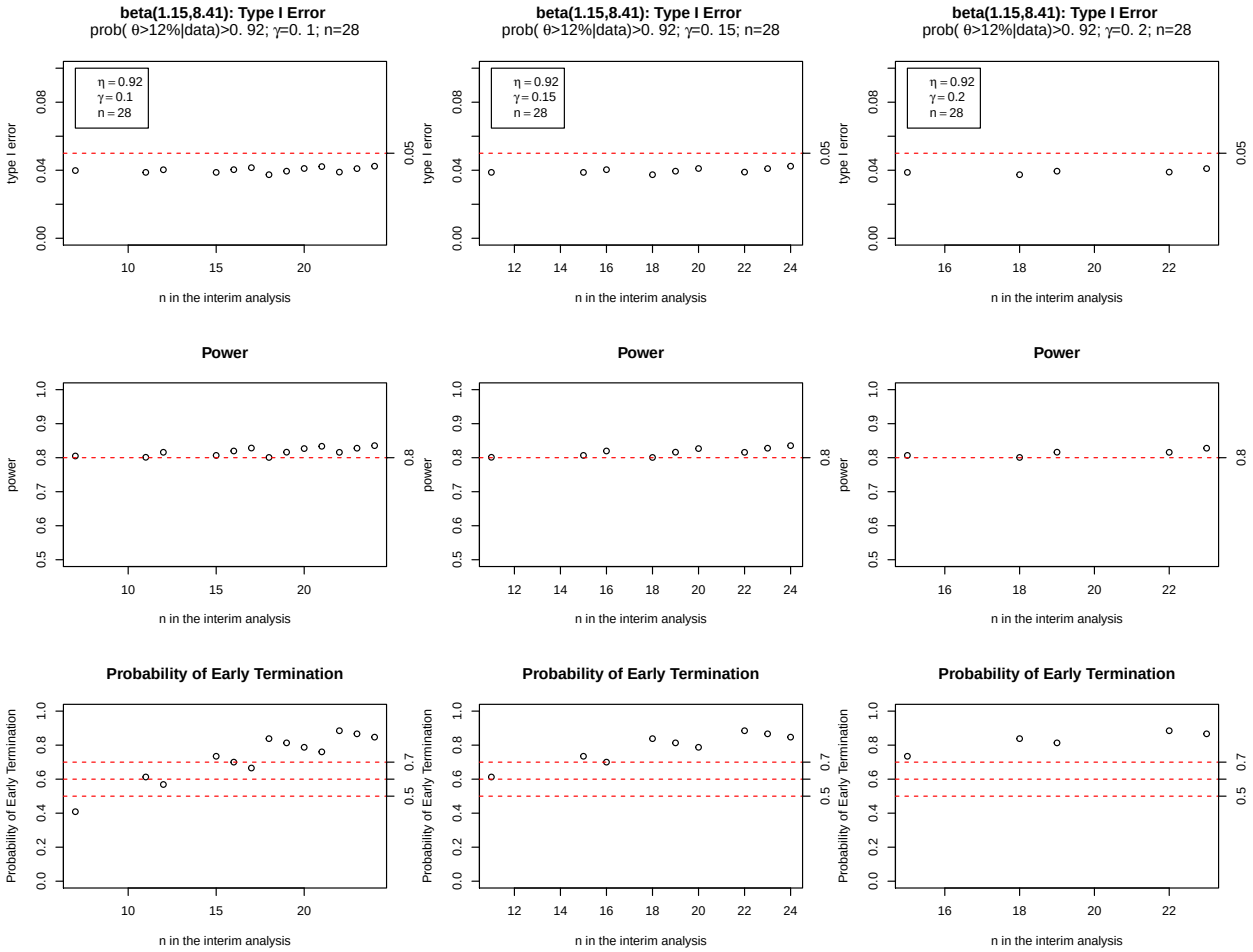

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=27
η = 0.95
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=27
η = 0.95
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=27
η = 0.95
γ = 0.15
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

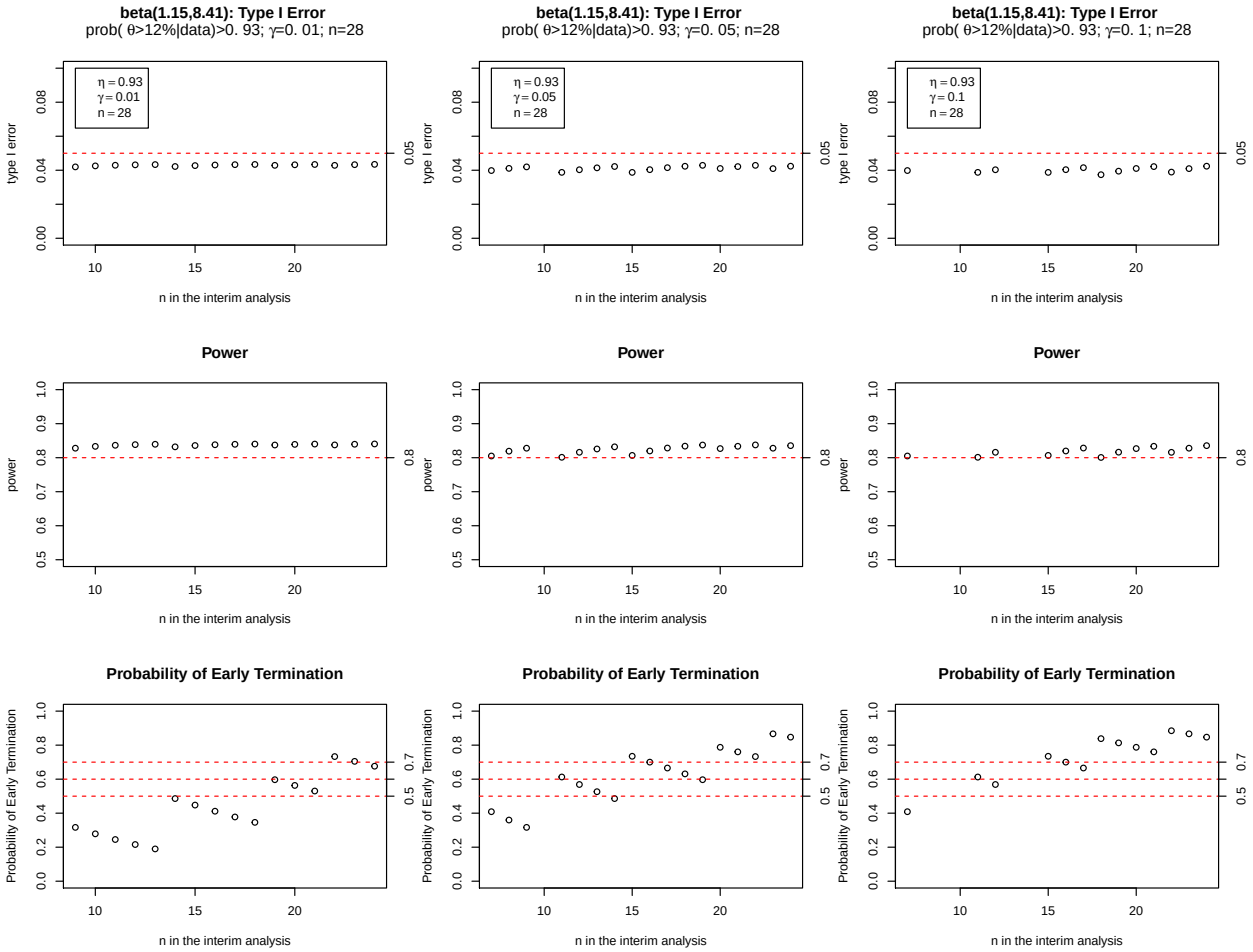

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 01; n=28
η = 0.9
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 05; n=28
η = 0.9
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=28
η = 0.9
γ = 0.1
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

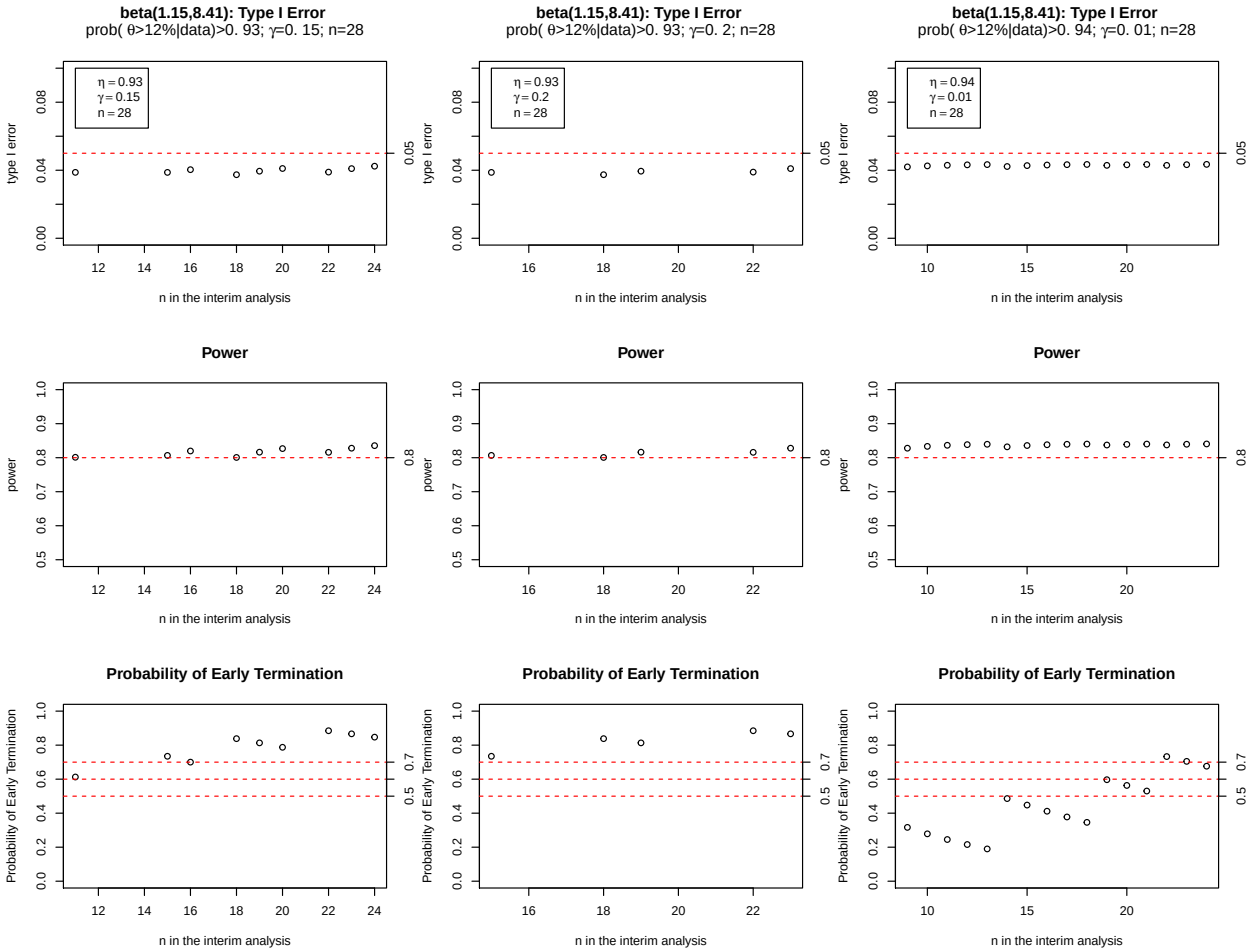

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=28
η = 0.9
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 2; n=28
η = 0.9
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 01; n=28
η = 0.91
γ = 0.01
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

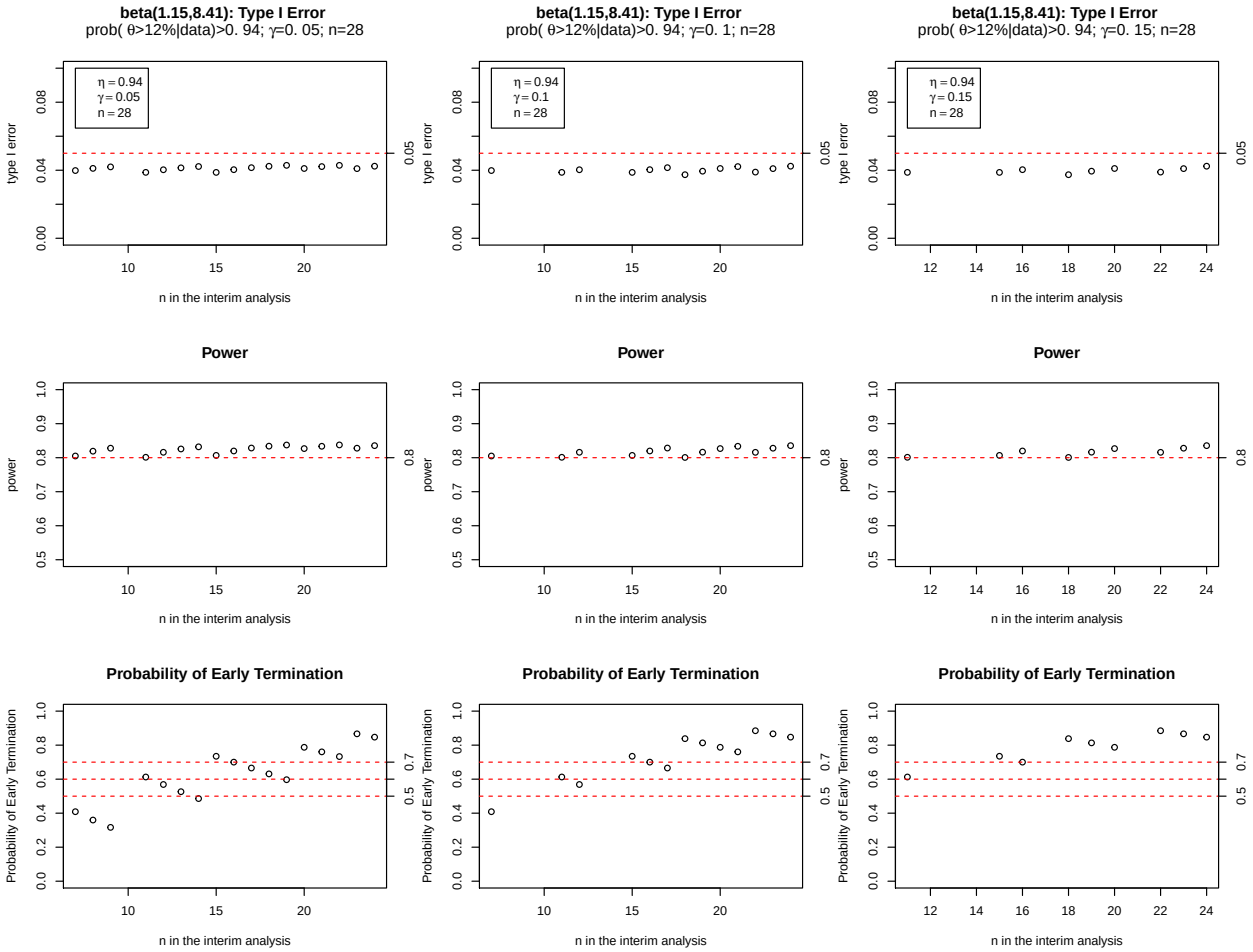

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 05; n=28
η = 0.91
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=28
η = 0.91
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=28
η = 0.91
γ = 0.15
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

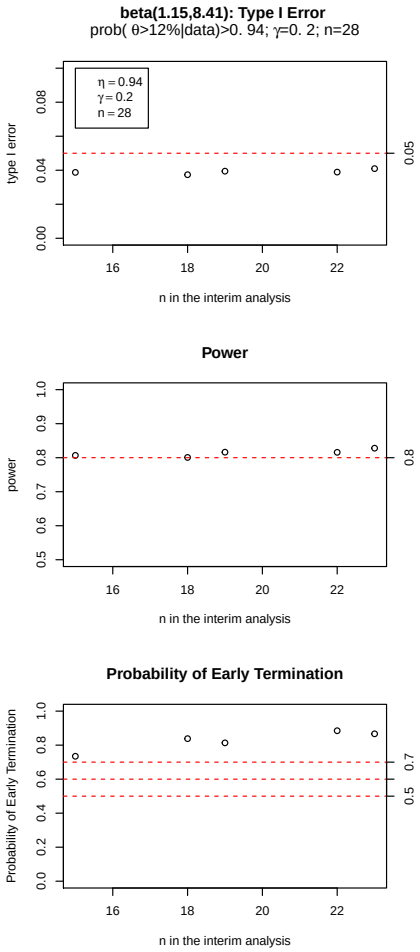

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=28
η = 0.91
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=28
η = 0.92
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=28
η = 0.92
γ = 0.05
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

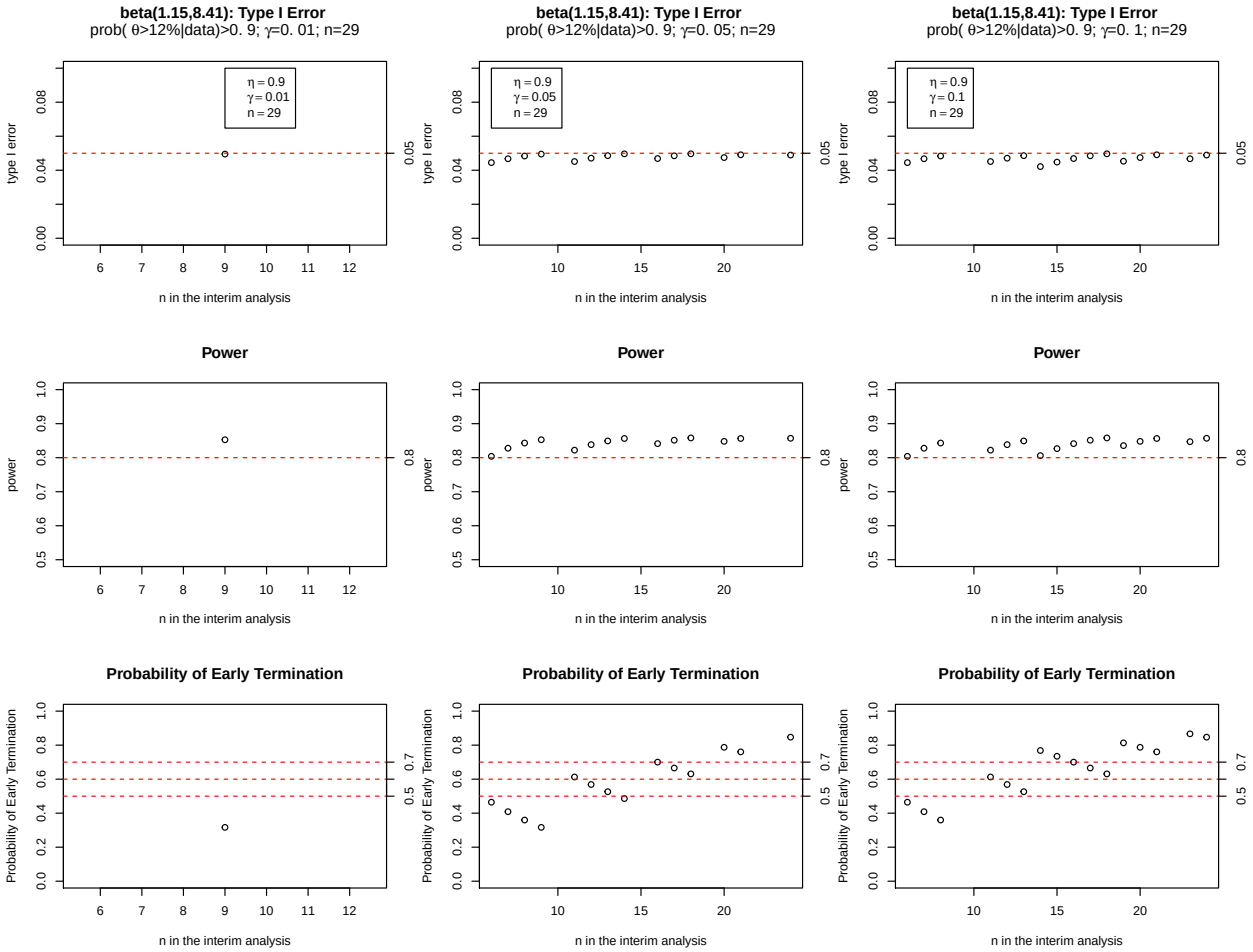

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=28
η = 0.92
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=28
η = 0.92
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=28
η = 0.92
γ = 0.2
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

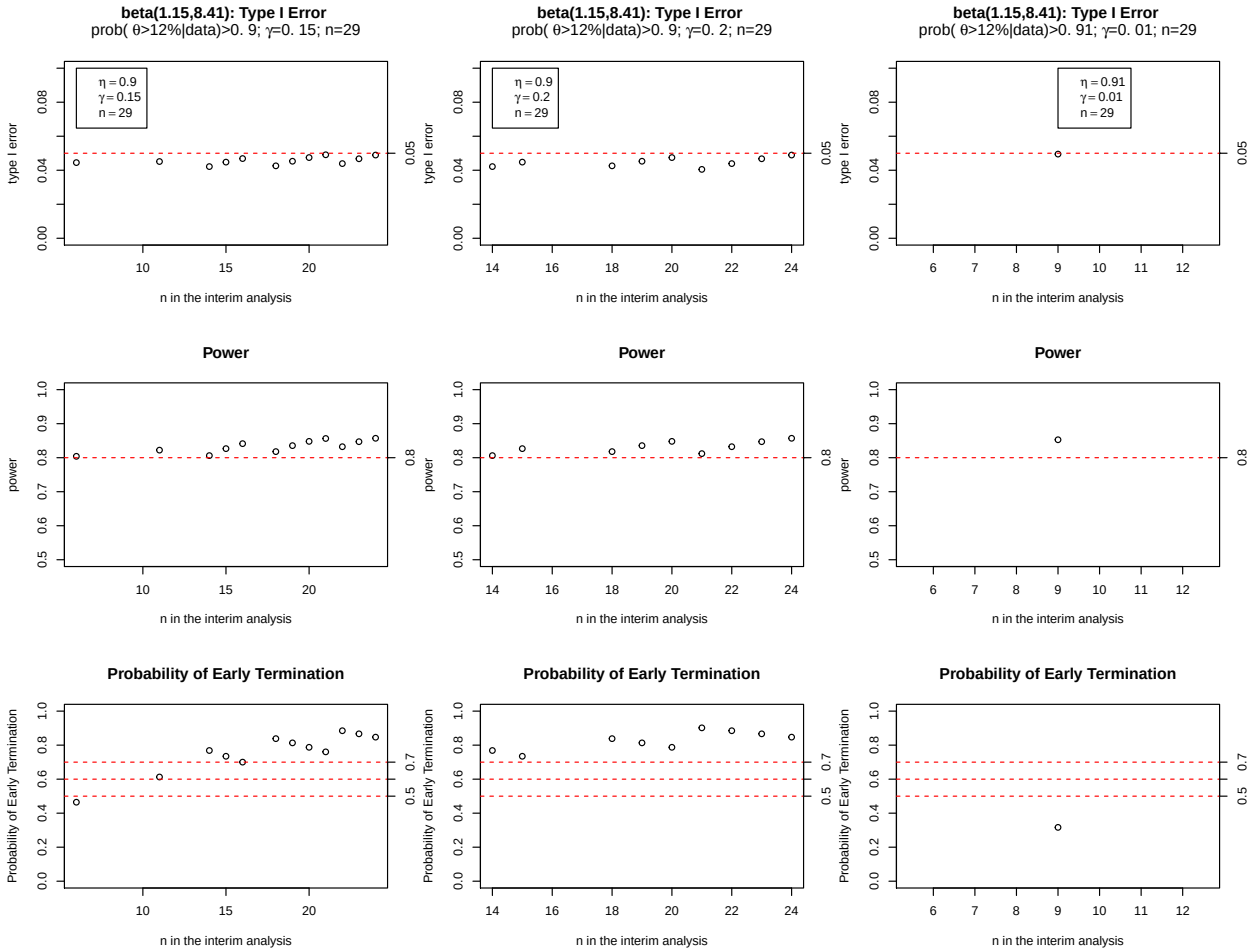

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=28
η = 0.93
γ = 0.01
n = 28
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=28
η = 0.93
γ = 0.05
n = 28
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=28
η = 0.93
γ = 0.1
n = 28
type I error
Power
power
Probability of Early Termination
n in the interim analysis

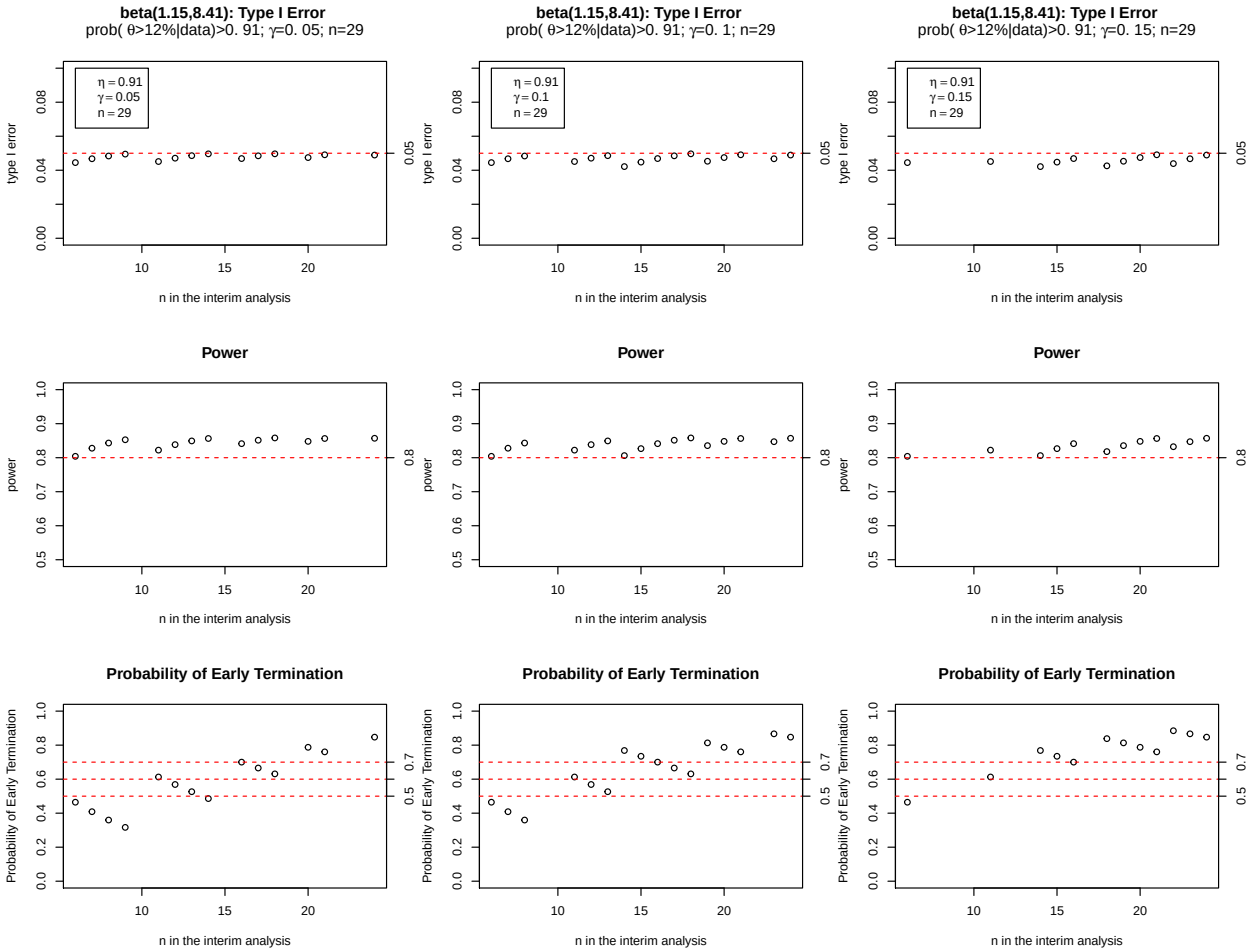

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=28
η = 0.93
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=28
η = 0.93
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 01; n=28
η = 0.94
γ = 0.01
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

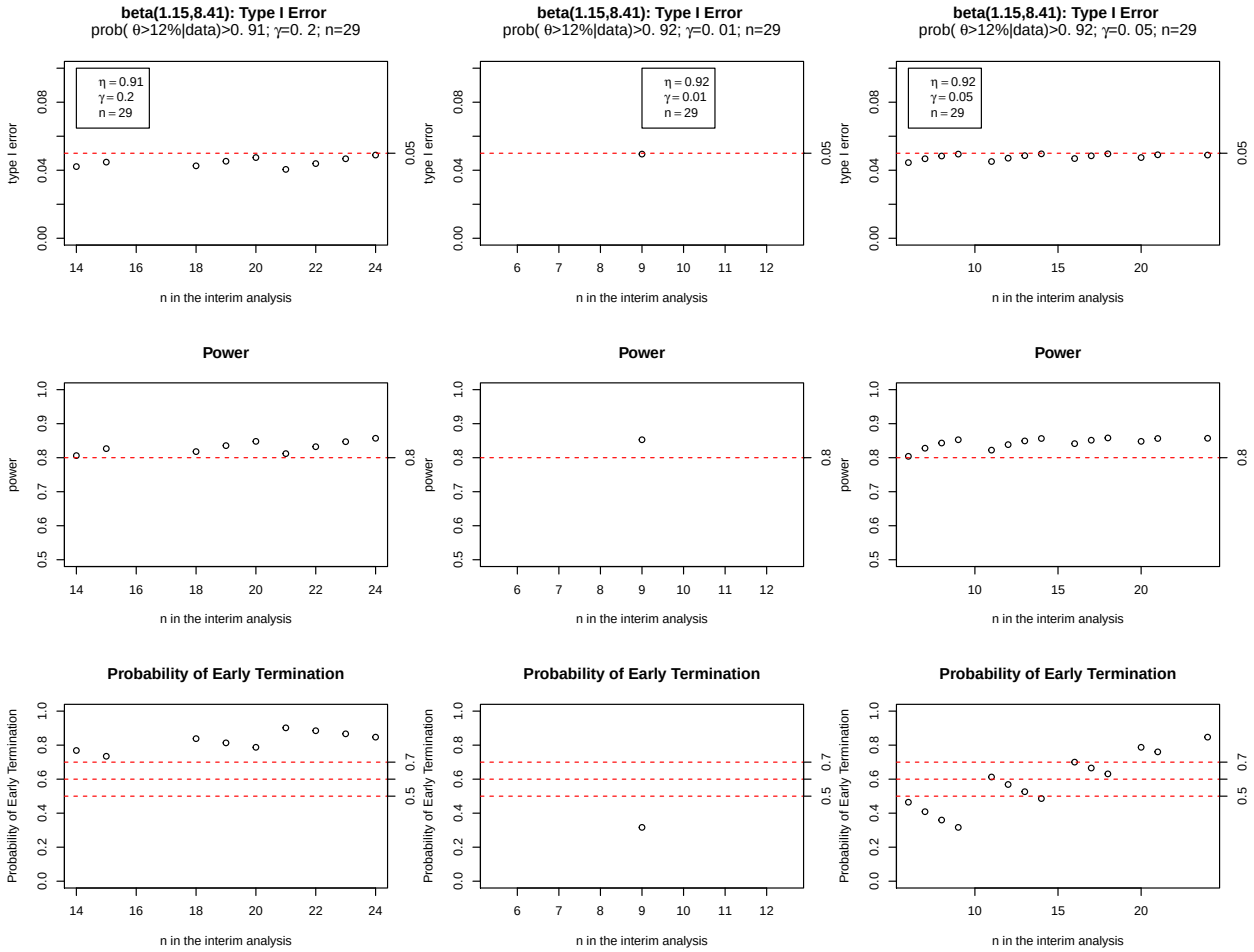

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=28
η = 0.94
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=28
η = 0.94
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=28
η = 0.94
γ = 0.15
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

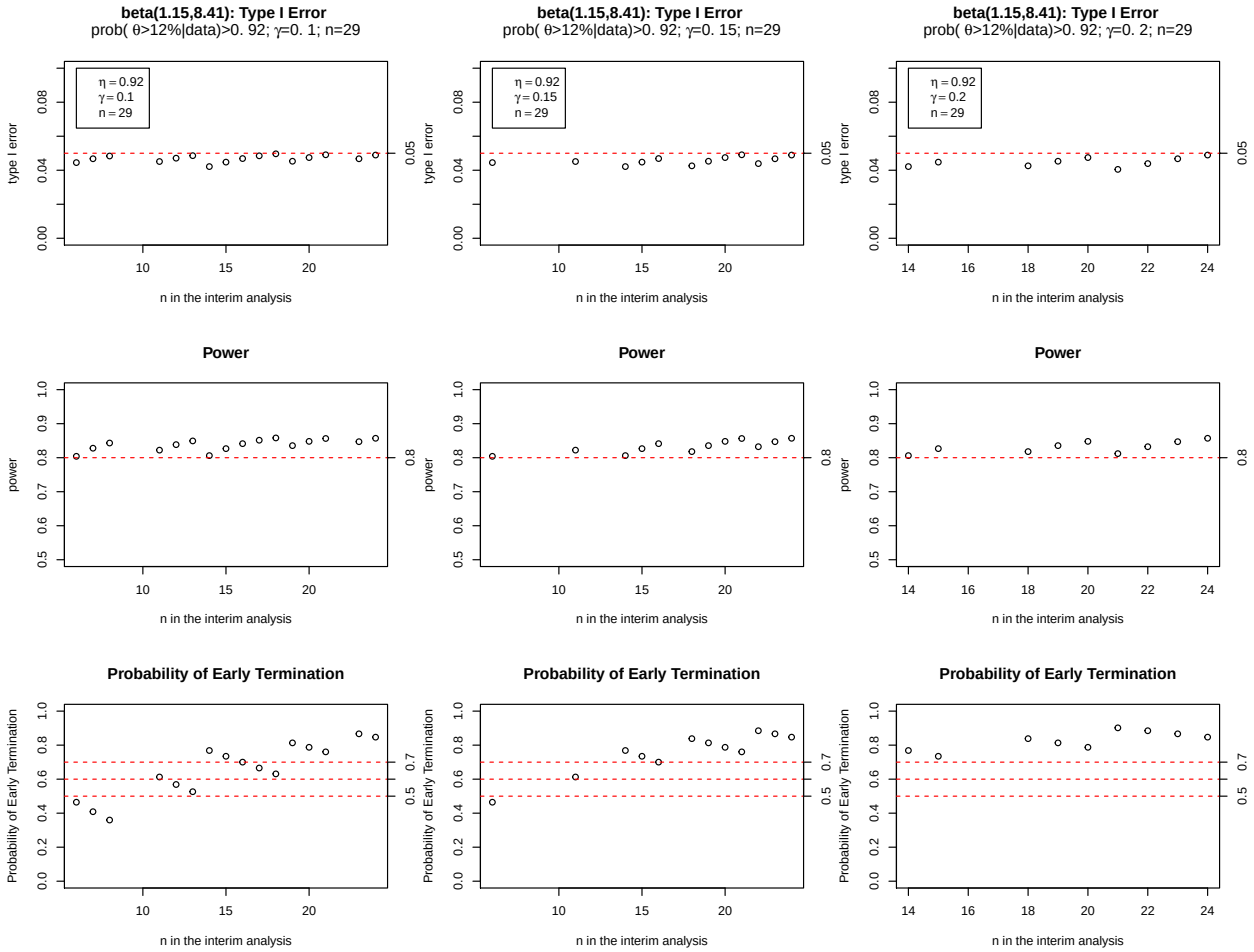

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=28
η = 0.94
γ = 0.2
n = 28
type I error
0.00
0.04
0.08
0.05
16
18
20
22
n in the interim analysis
Power
power
0.5
0.6
0.7
0.8
0.9
1.0
0.8
16
18
20
22
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
0.0
0.2
0.4
0.6
0.8
1.0
0.7
0.5
16
18
20
22
n in the interim analysis

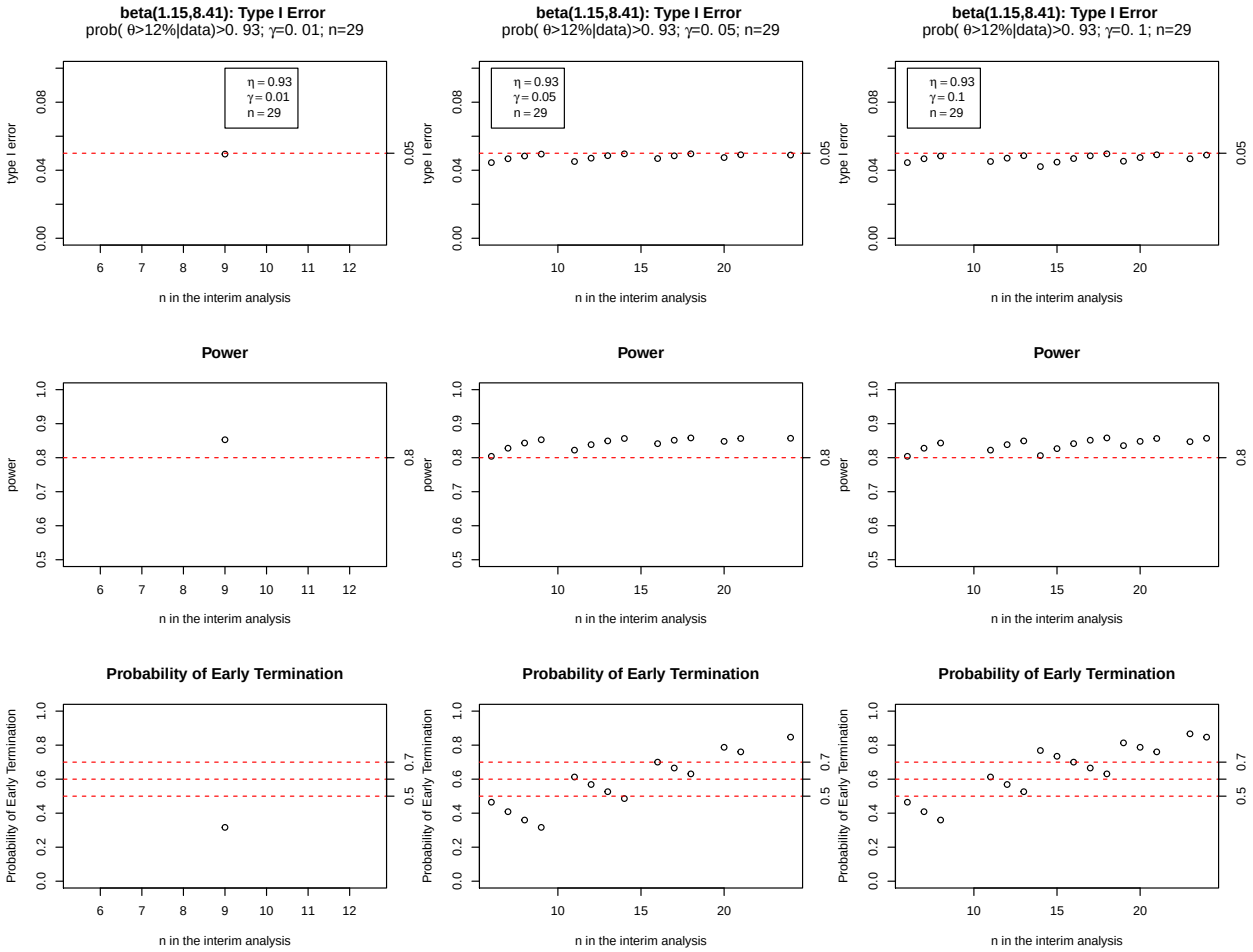

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 01; n=29
η = 0.9
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 05; n=29
η = 0.9
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=29
η = 0.9
γ = 0.1
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

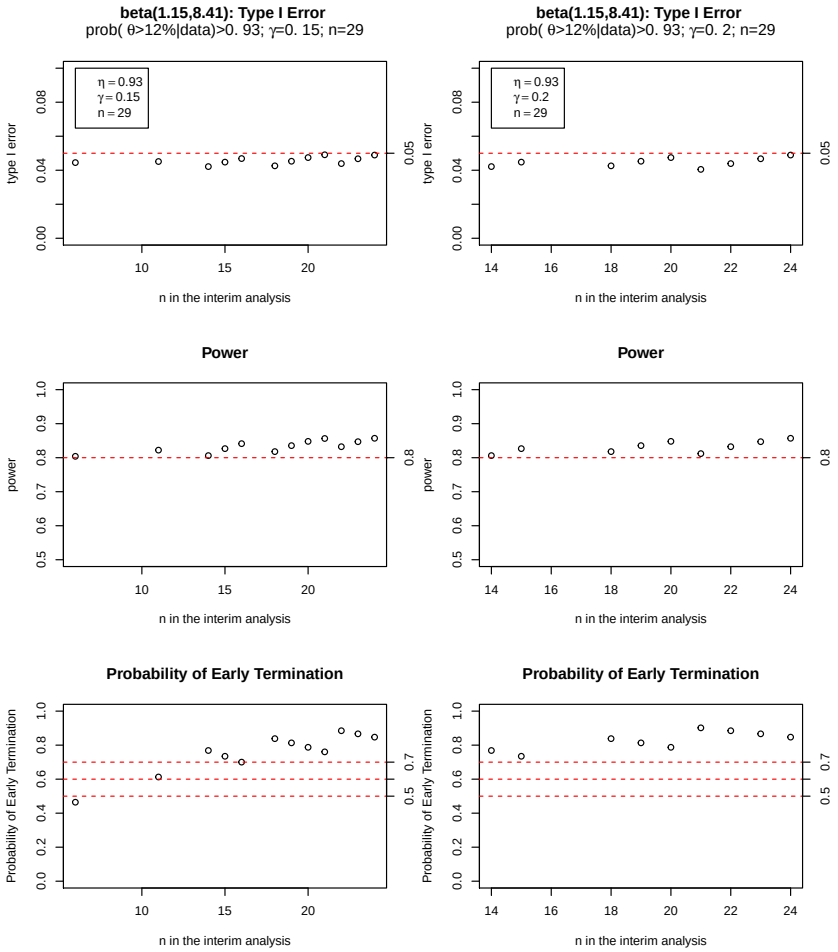

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=29
η = 0.9
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 2; n=29
η = 0.9
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 01; n=29
η = 0.91
γ = 0.01
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

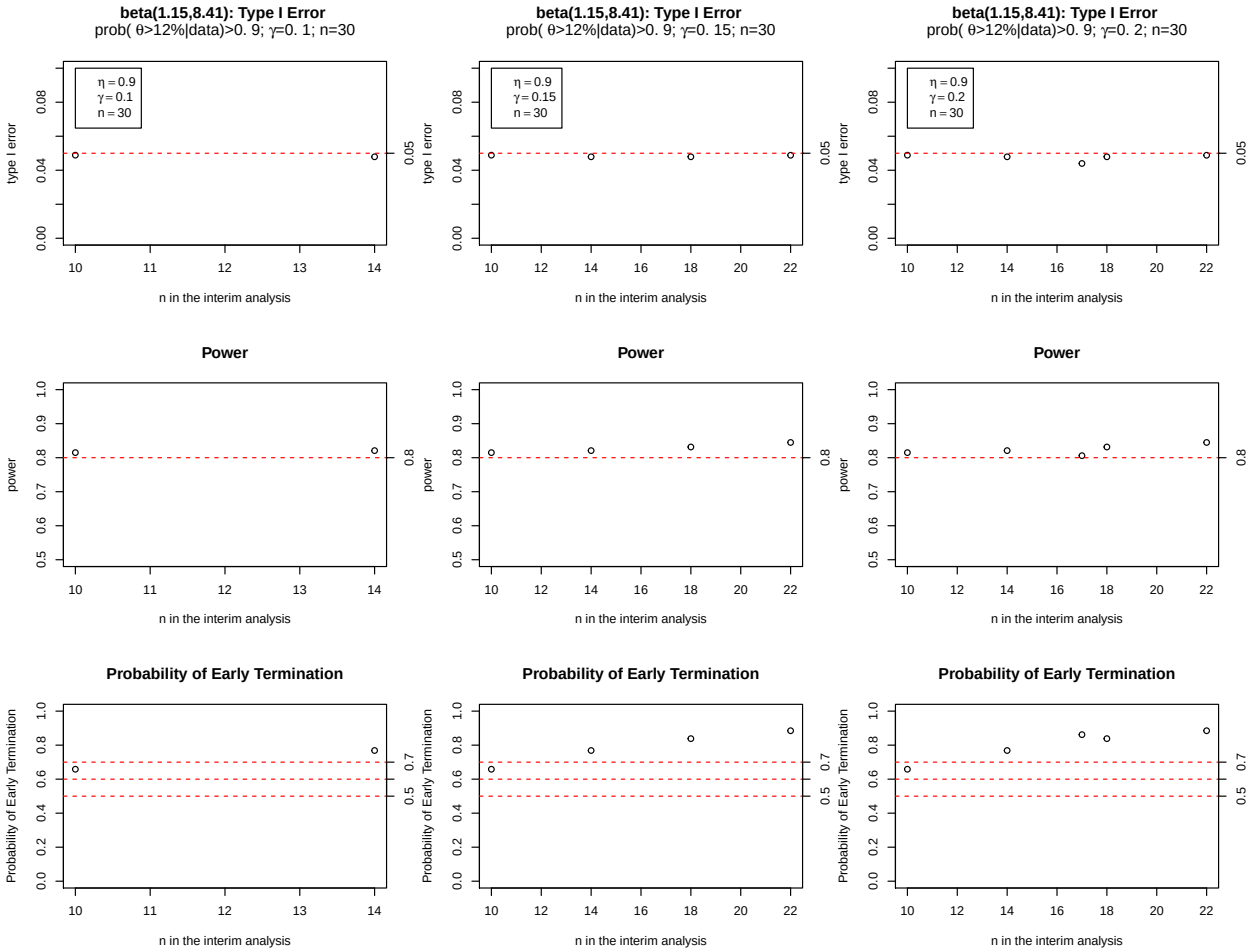

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 05; n=29
η = 0.91
γ = 0.05
n = 29
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=29
η = 0.91
γ = 0.1
n = 29
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=29
η = 0.91
γ = 0.15
n = 29
type I error
Power
power
Probability of Early Termination
n in the interim analysis

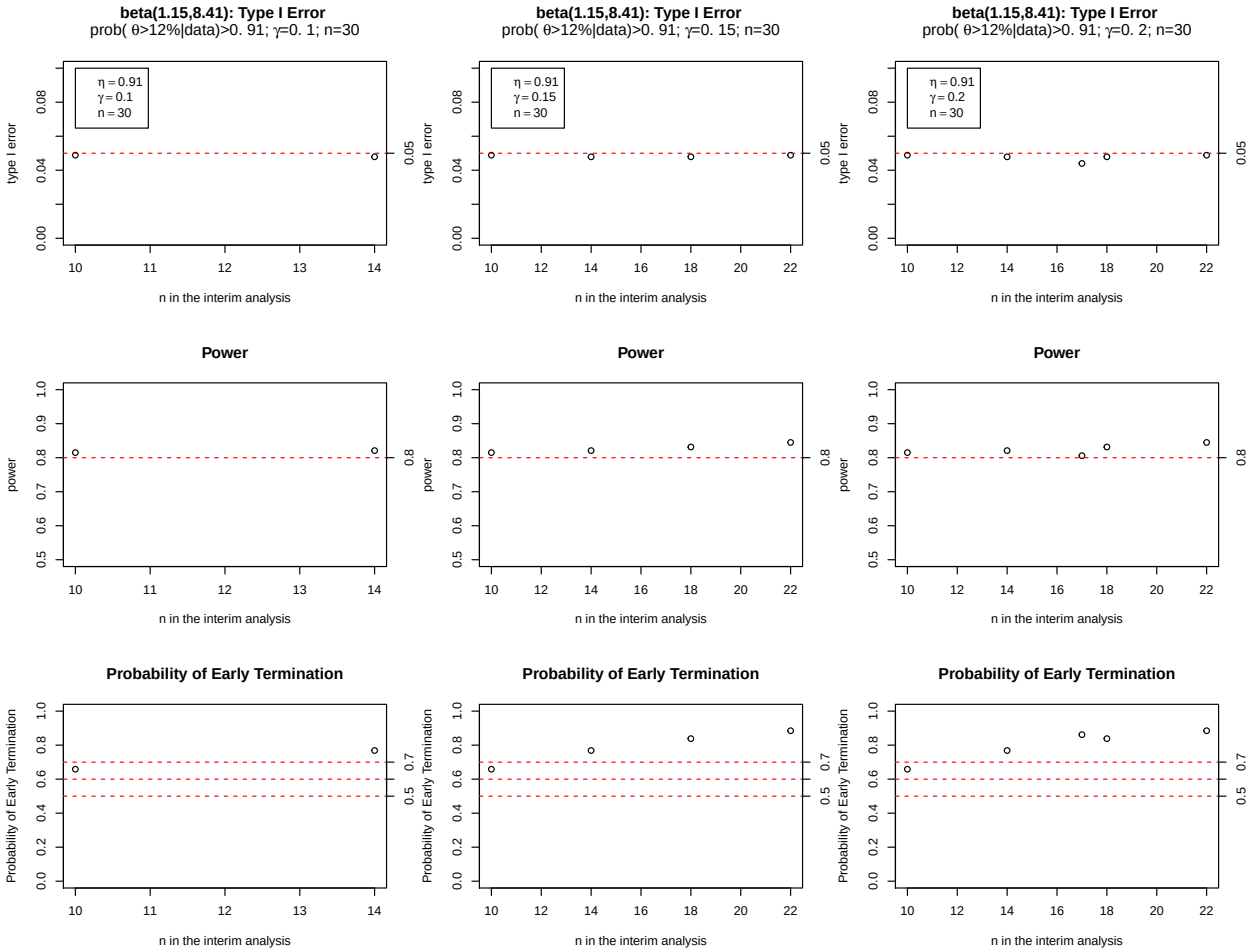

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=29
η = 0.91
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 01; n=29
η = 0.92
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 05; n=29
η = 0.92
γ = 0.05
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

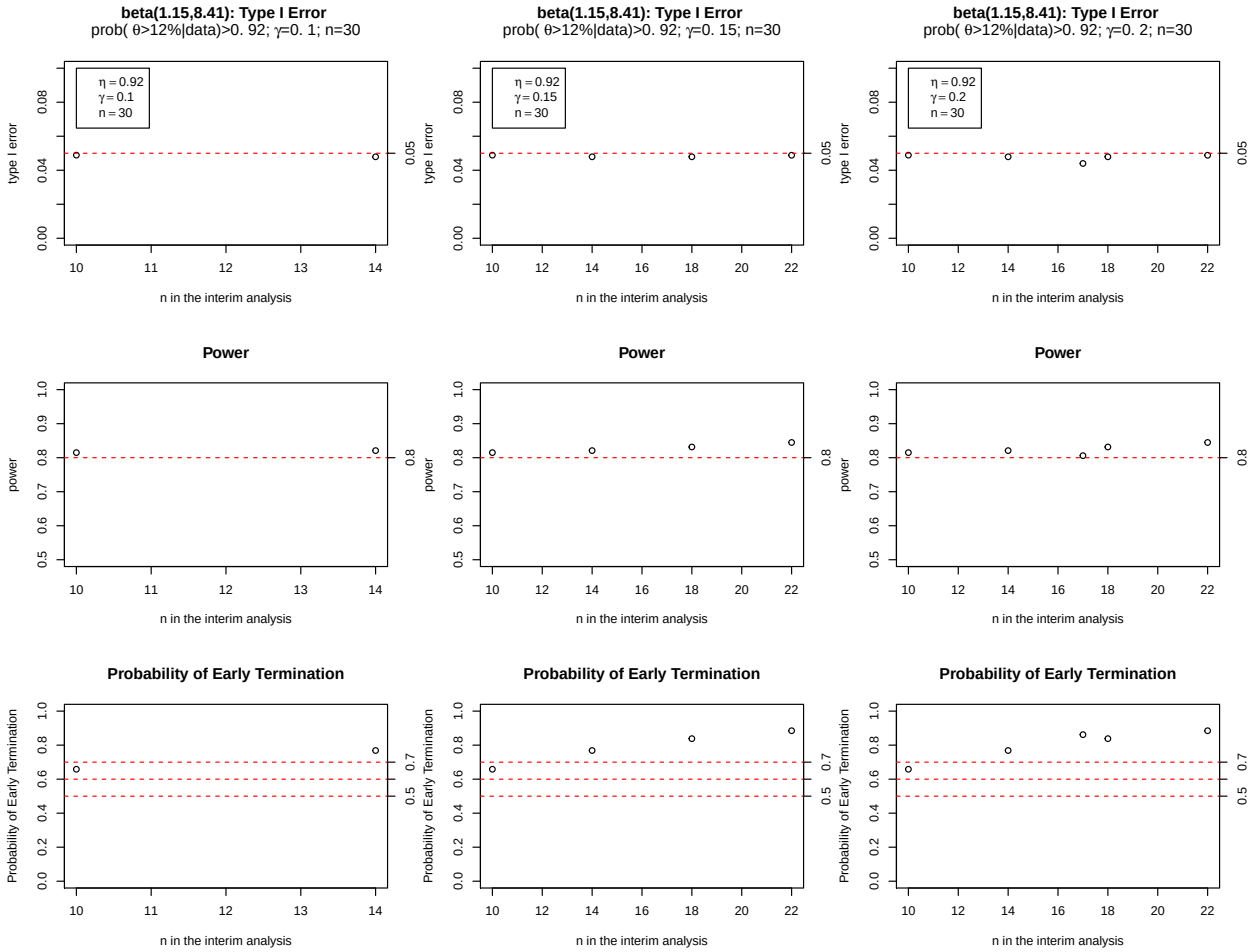

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=29
η = 0.92
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=29
η = 0.92
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=29
η = 0.92
γ = 0.2
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis


beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 01; n=29
η = 0.93
γ = 0.01
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 05; n=29
η = 0.93
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 1; n=29
η = 0.93
γ = 0.1
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

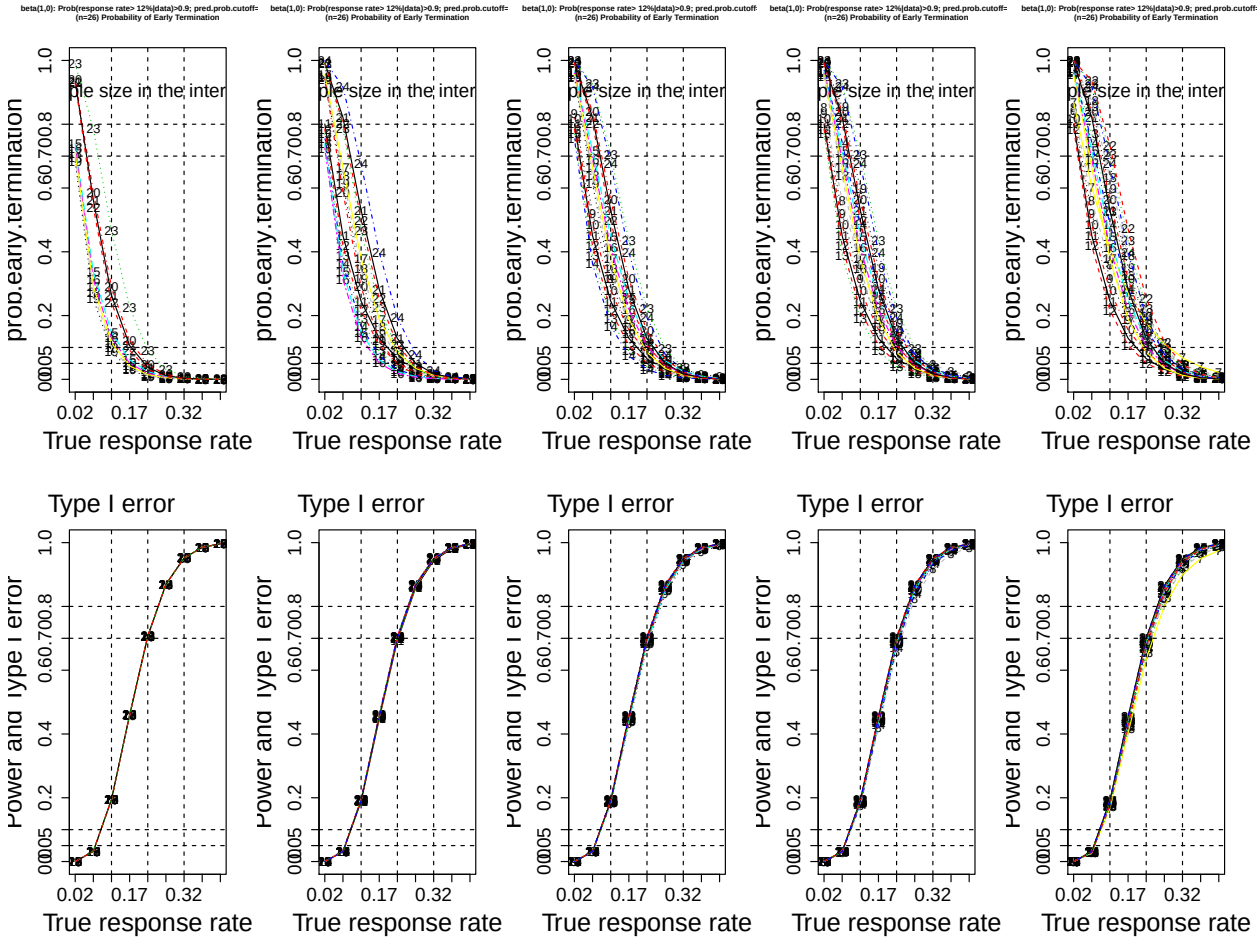

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 15; n=29
η = 0.93
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=29
η = 0.93
γ = 0.2
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

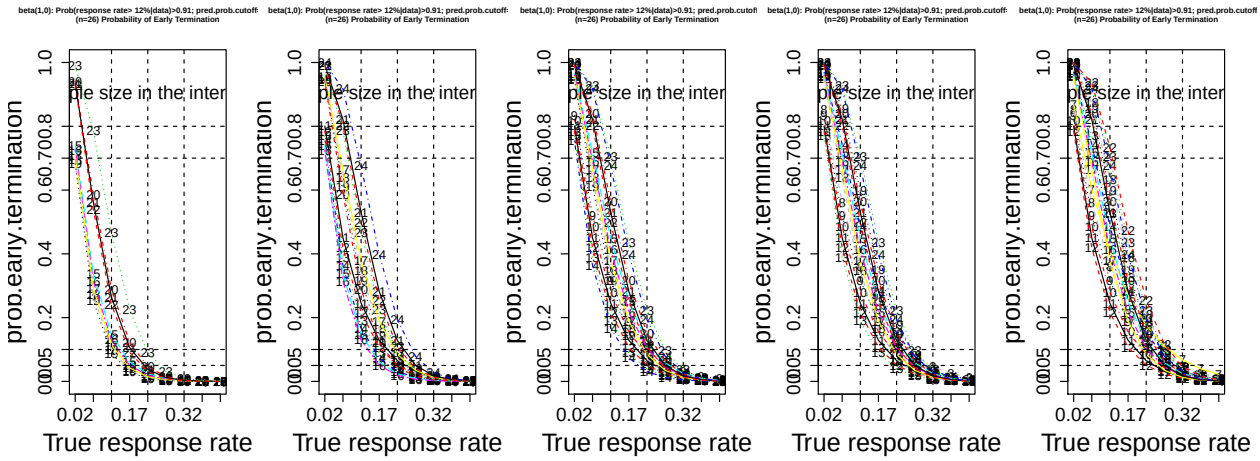

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 1; n=30
η = 0.9
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 15; n=30
η = 0.9
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 9; γ=0. 2; n=30
η = 0.9
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

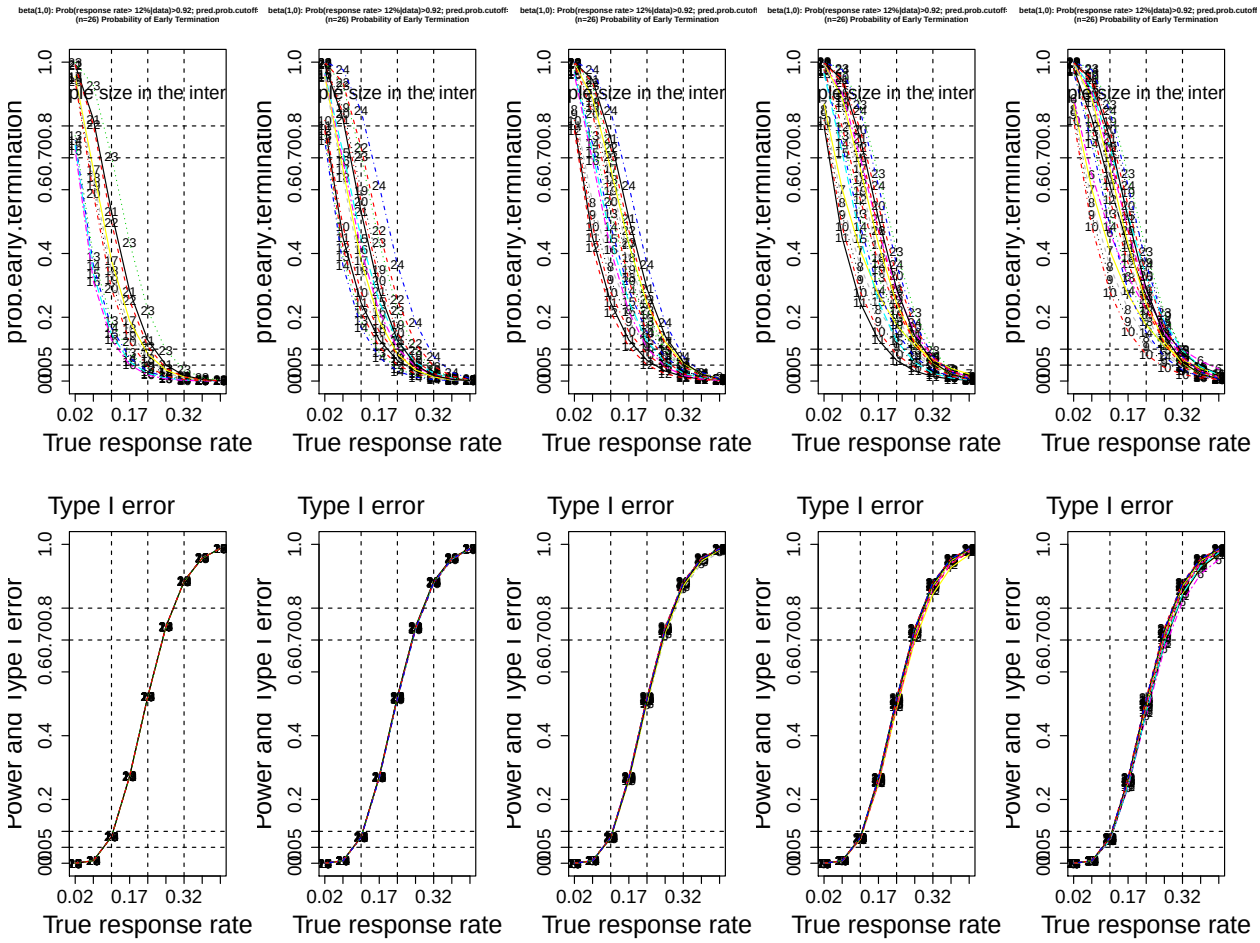

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 1; n=30
η = 0.91
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 15; n=30
η = 0.91
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 91; γ=0. 2; n=30
η = 0.91
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

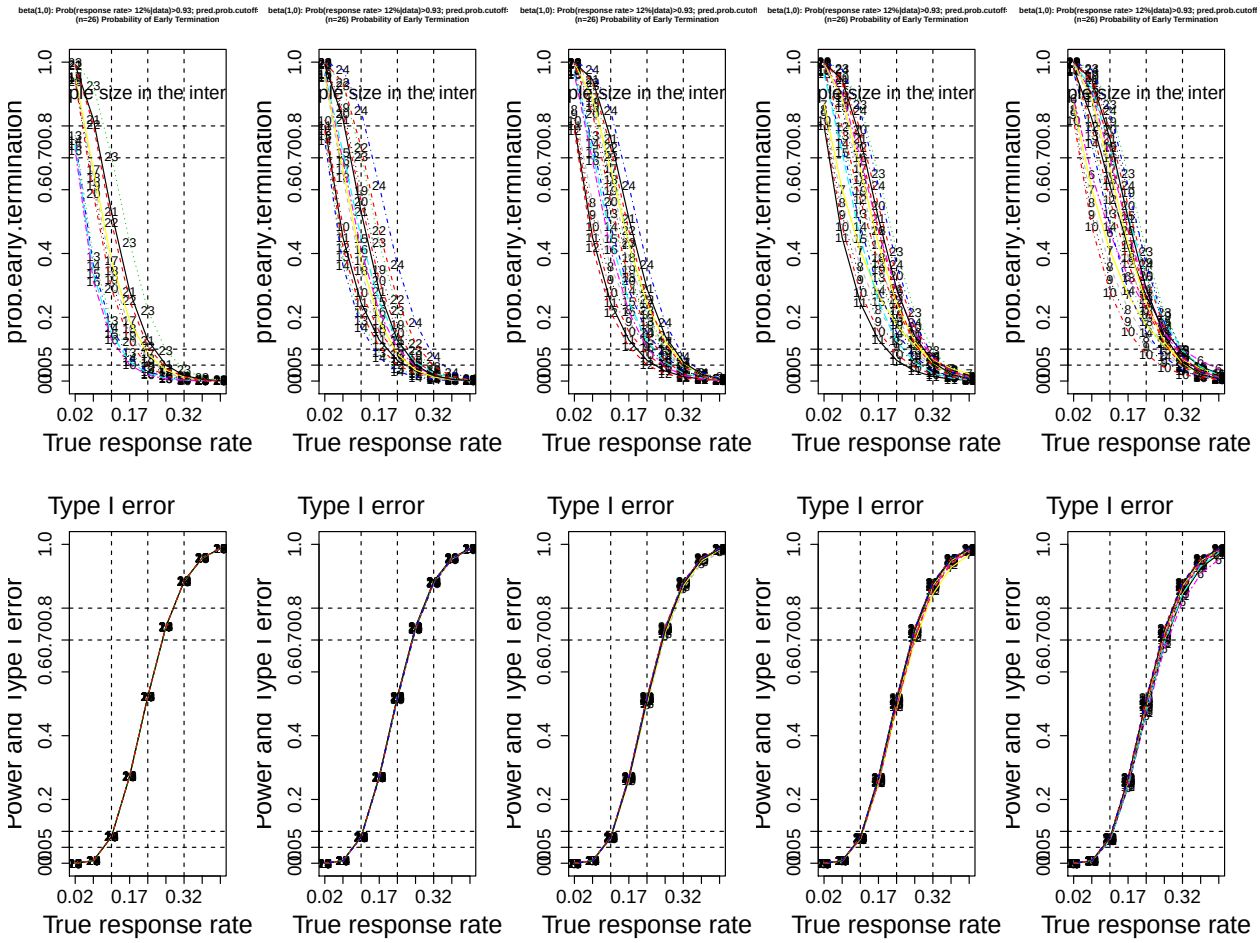

beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 1; n=30
η = 0.92
γ = 0.1
n = 30
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 15; n=30
η = 0.92
γ = 0.15
n = 30
type I error
n in the interim analysis
beta(1.15,8.41): Type I Error
prob(θ>12%|data)>0. 92; γ=0. 2; n=30
η = 0.92
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

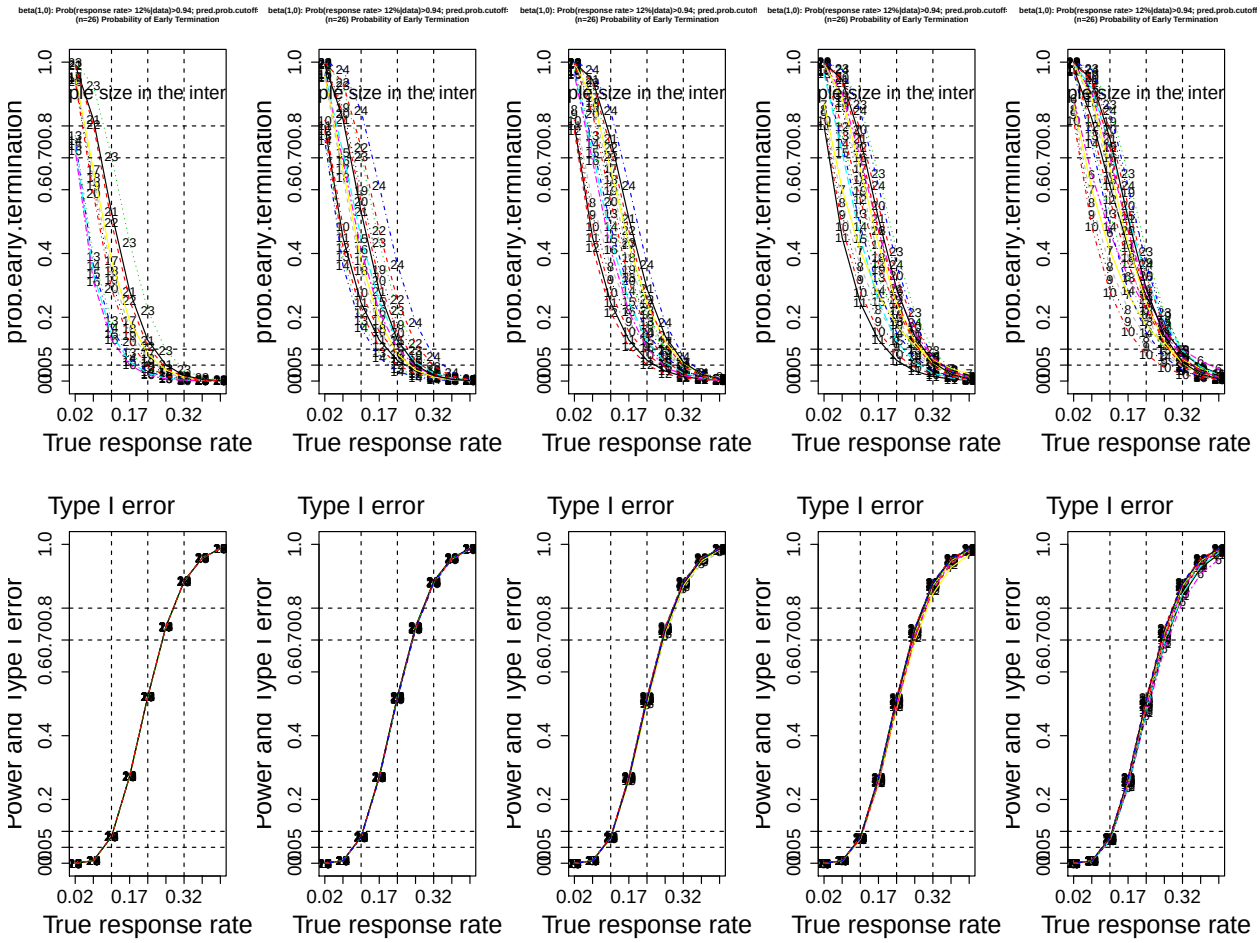
Prior Distribution: beta(1,0)

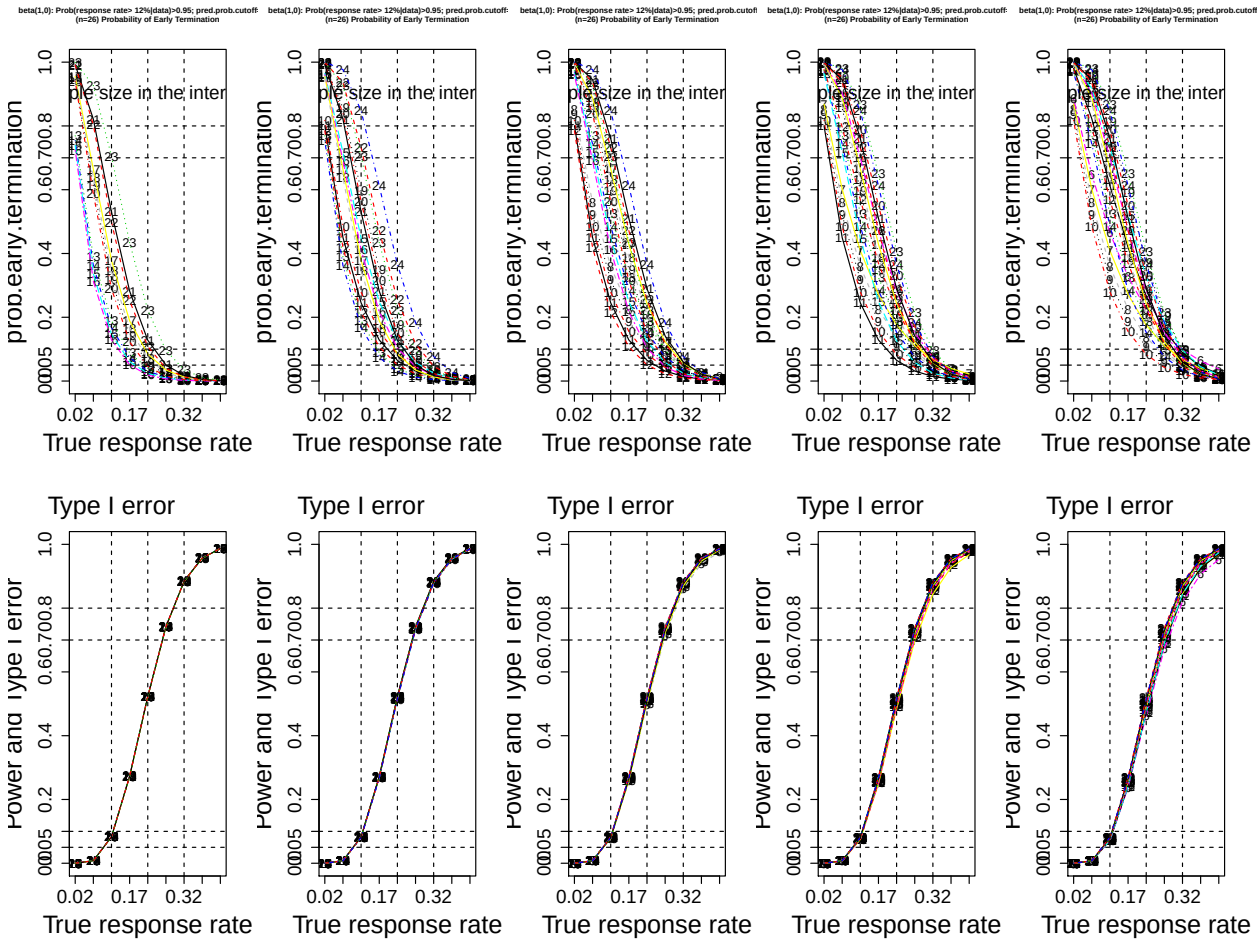


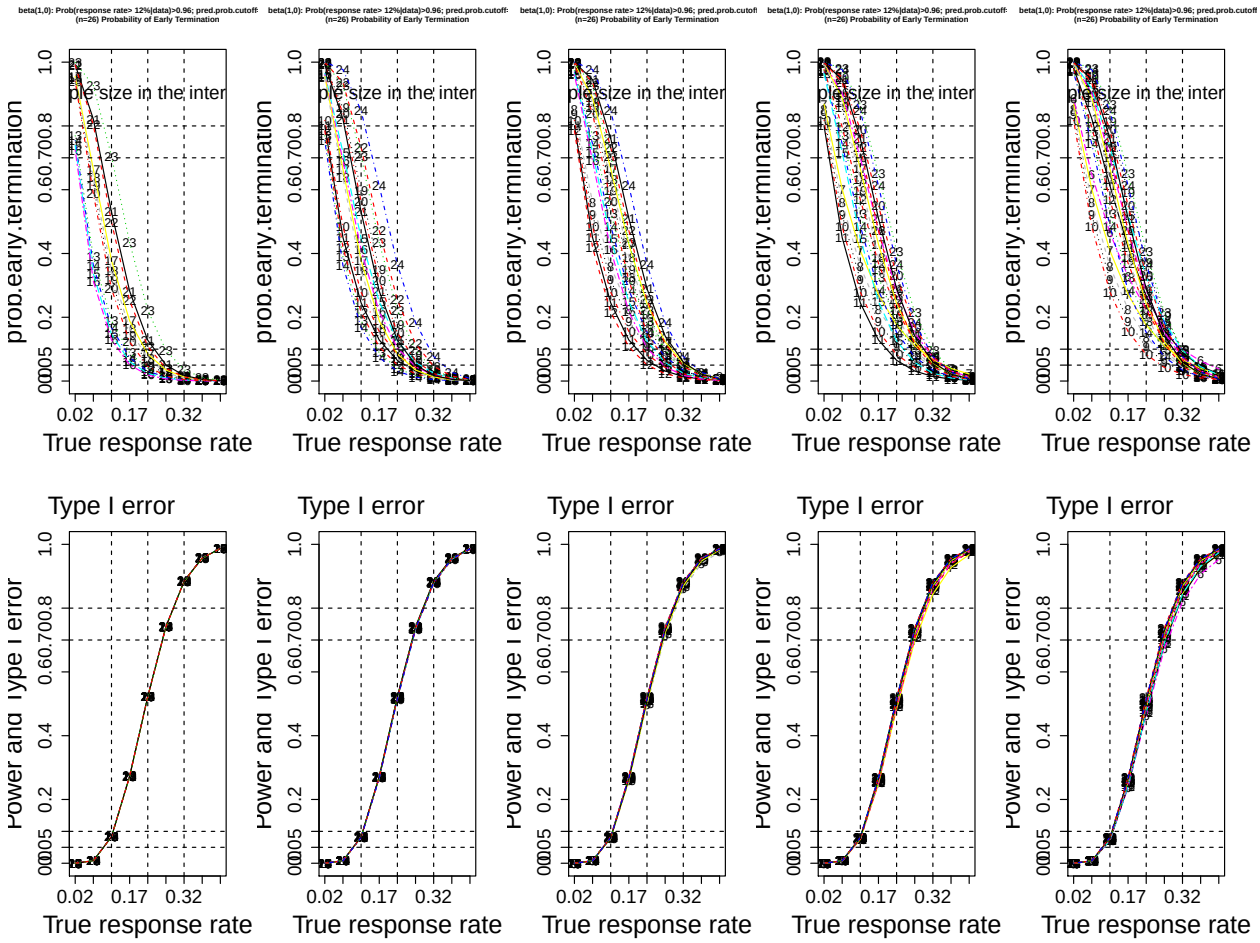


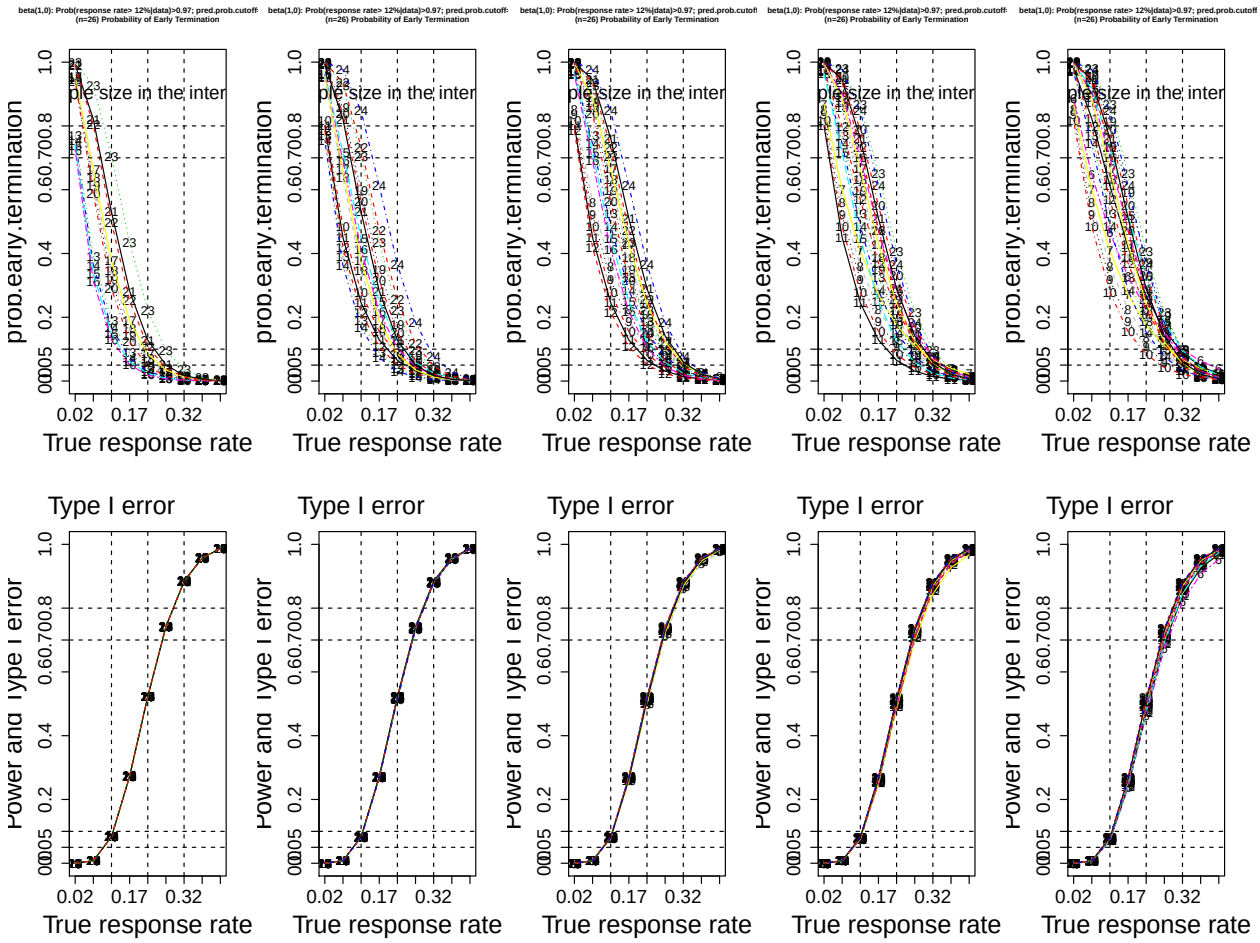

beta(1,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

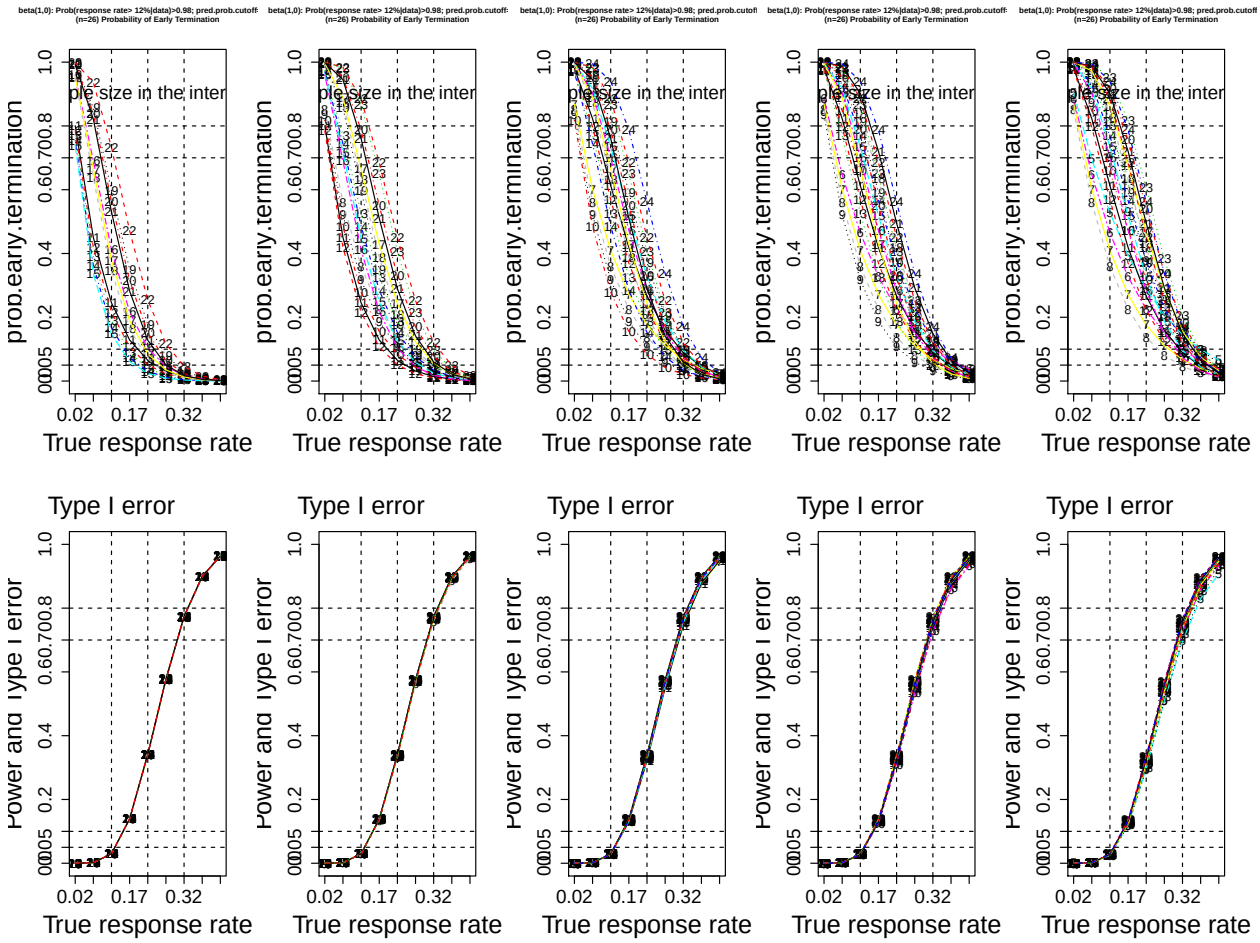

beta(1,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

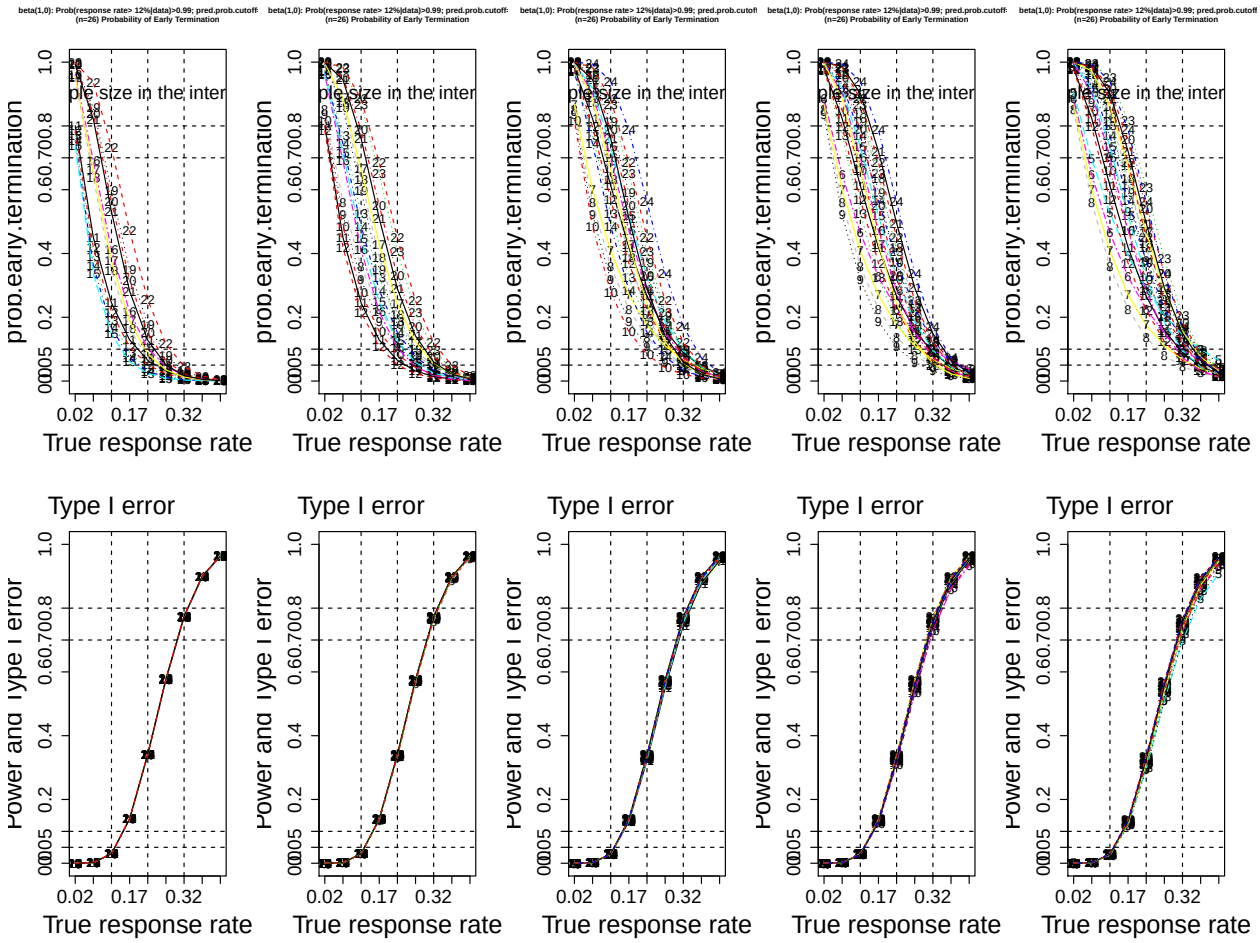

beta(1,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

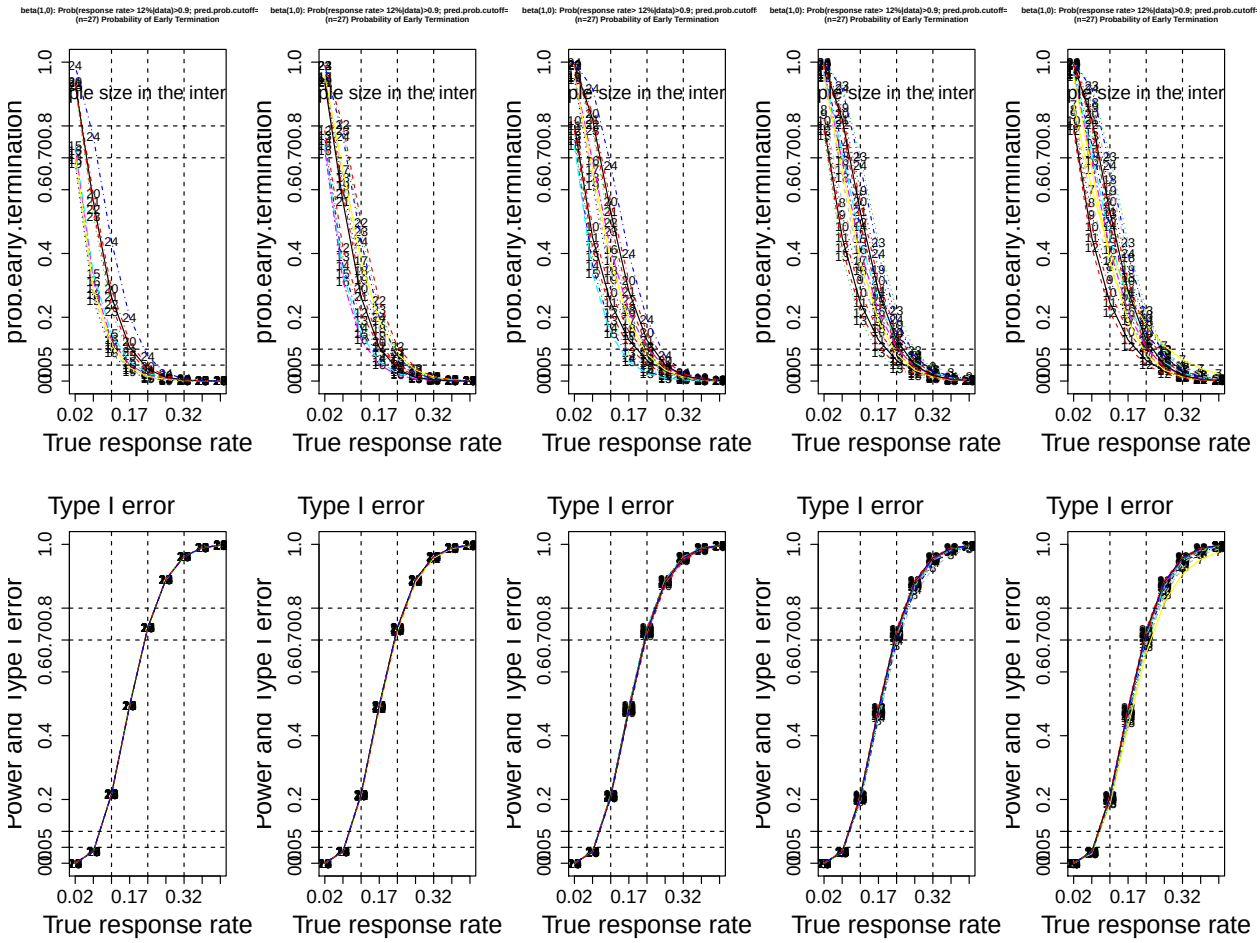

beta(1,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

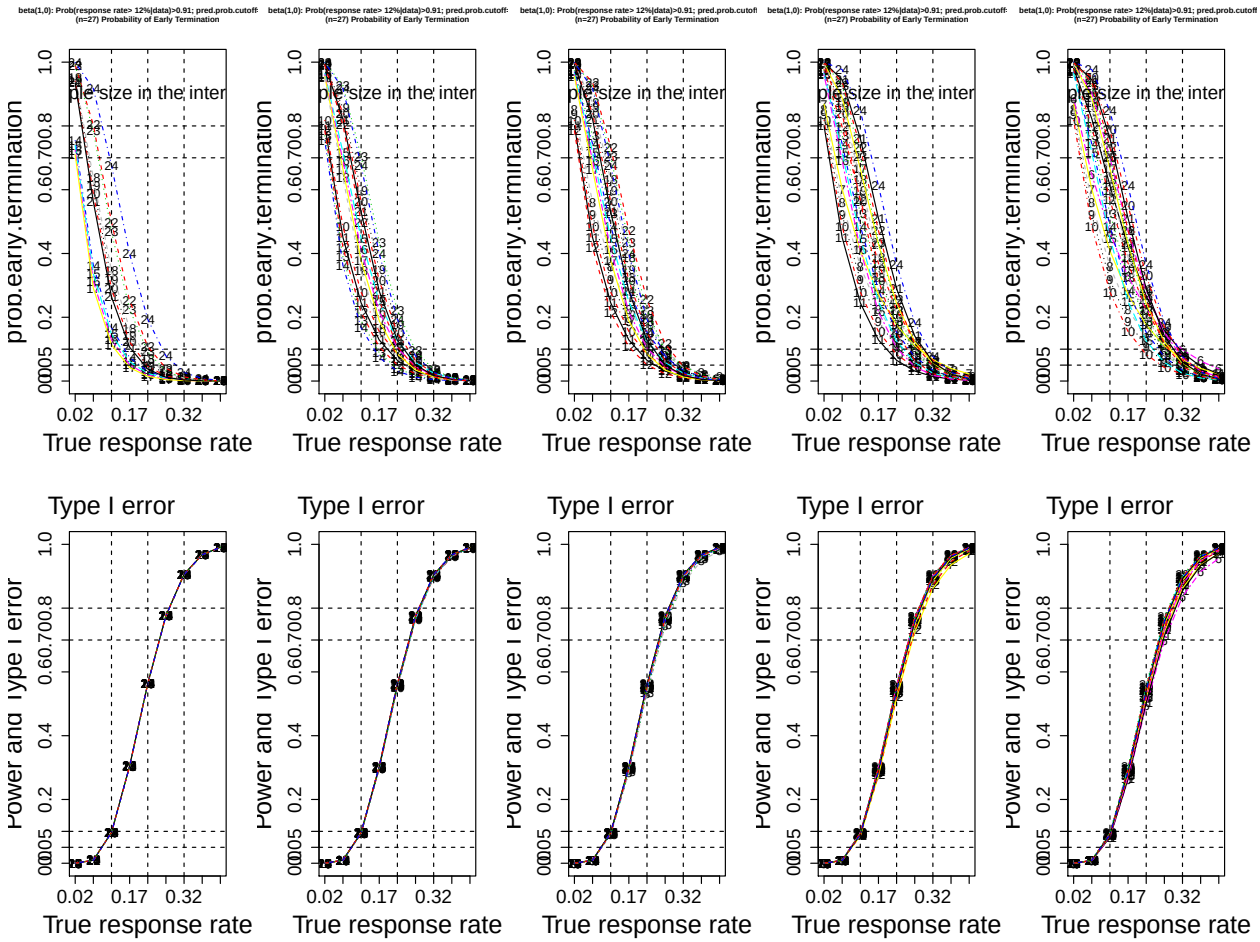

beta(1,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

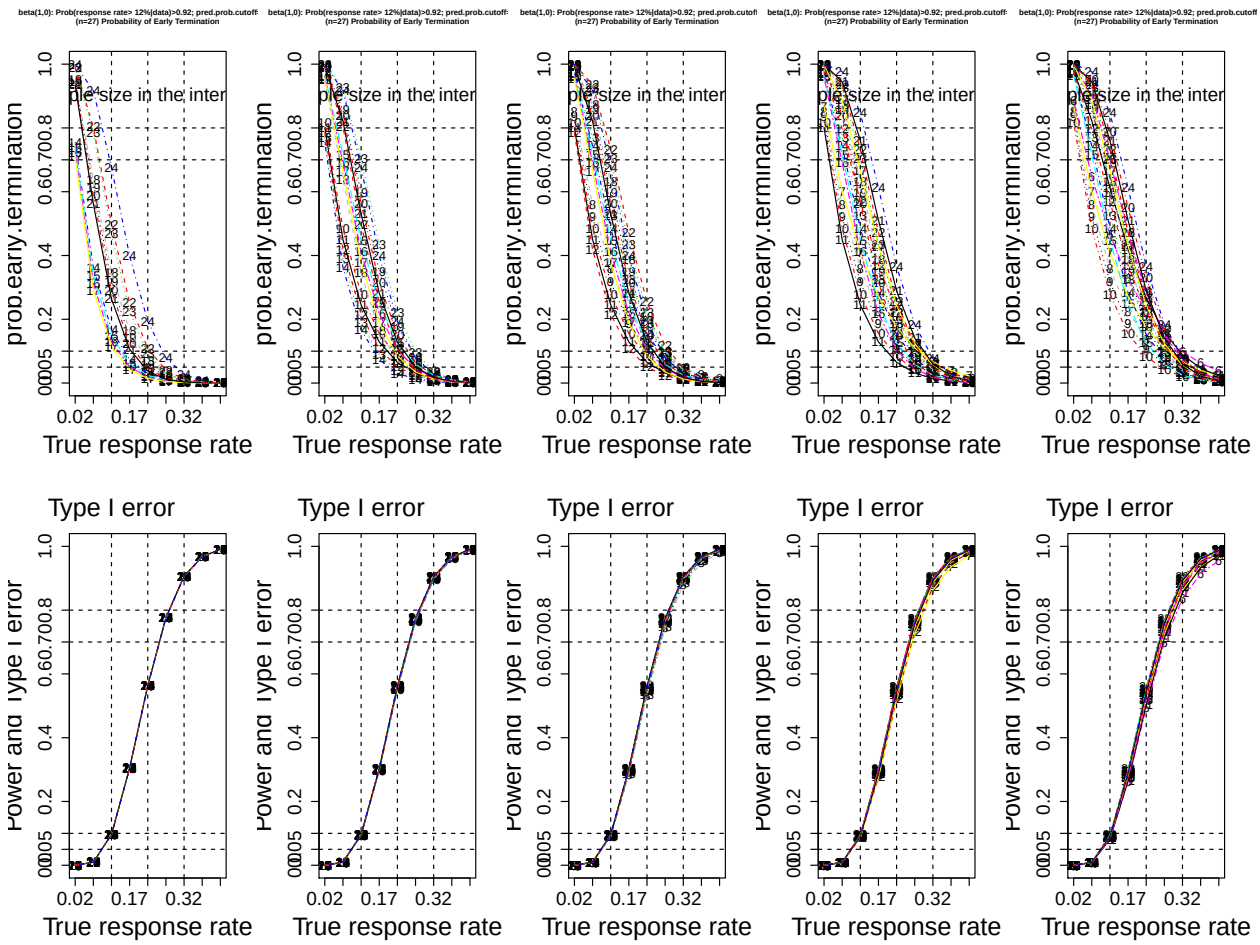

beta(1,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

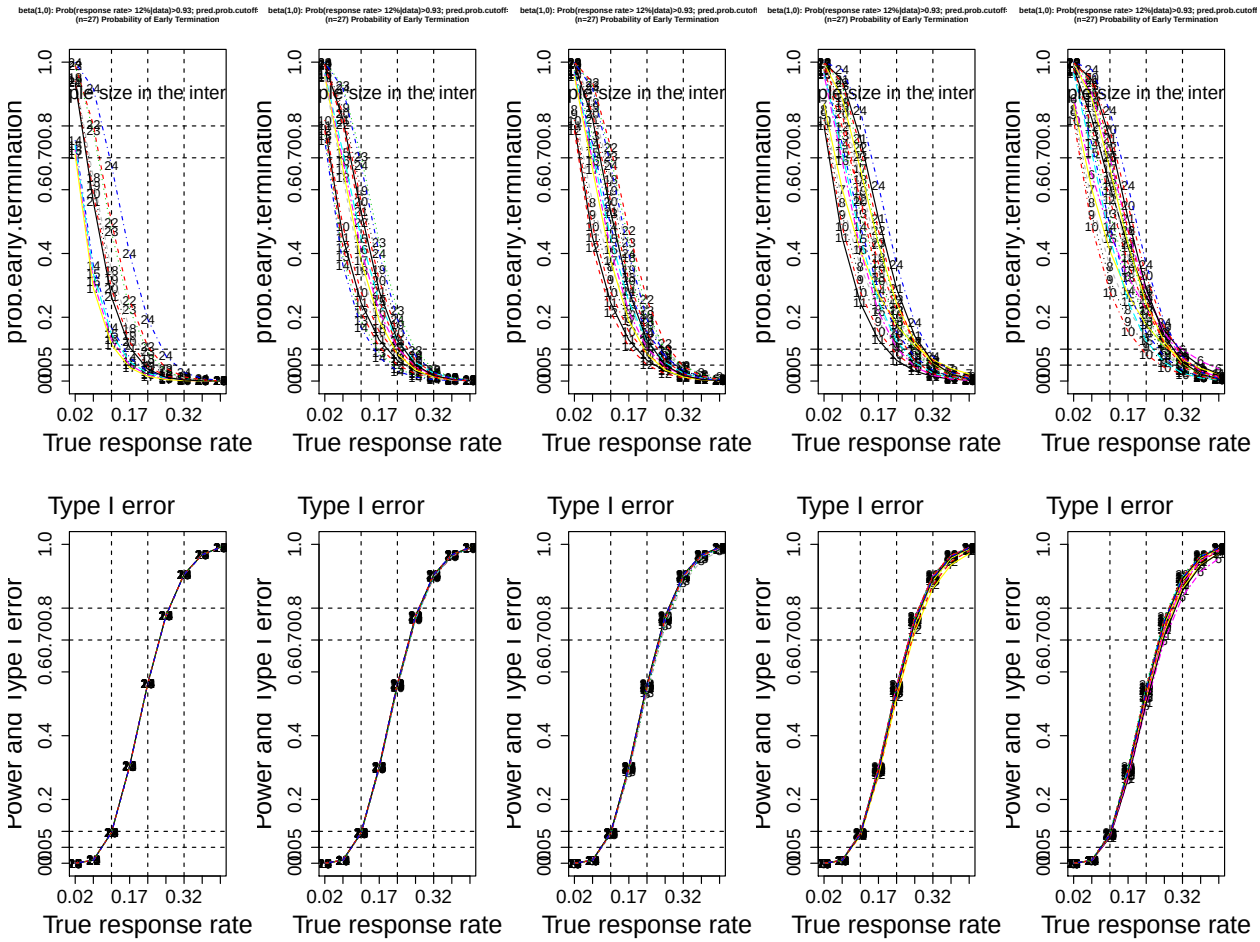

beta(1,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

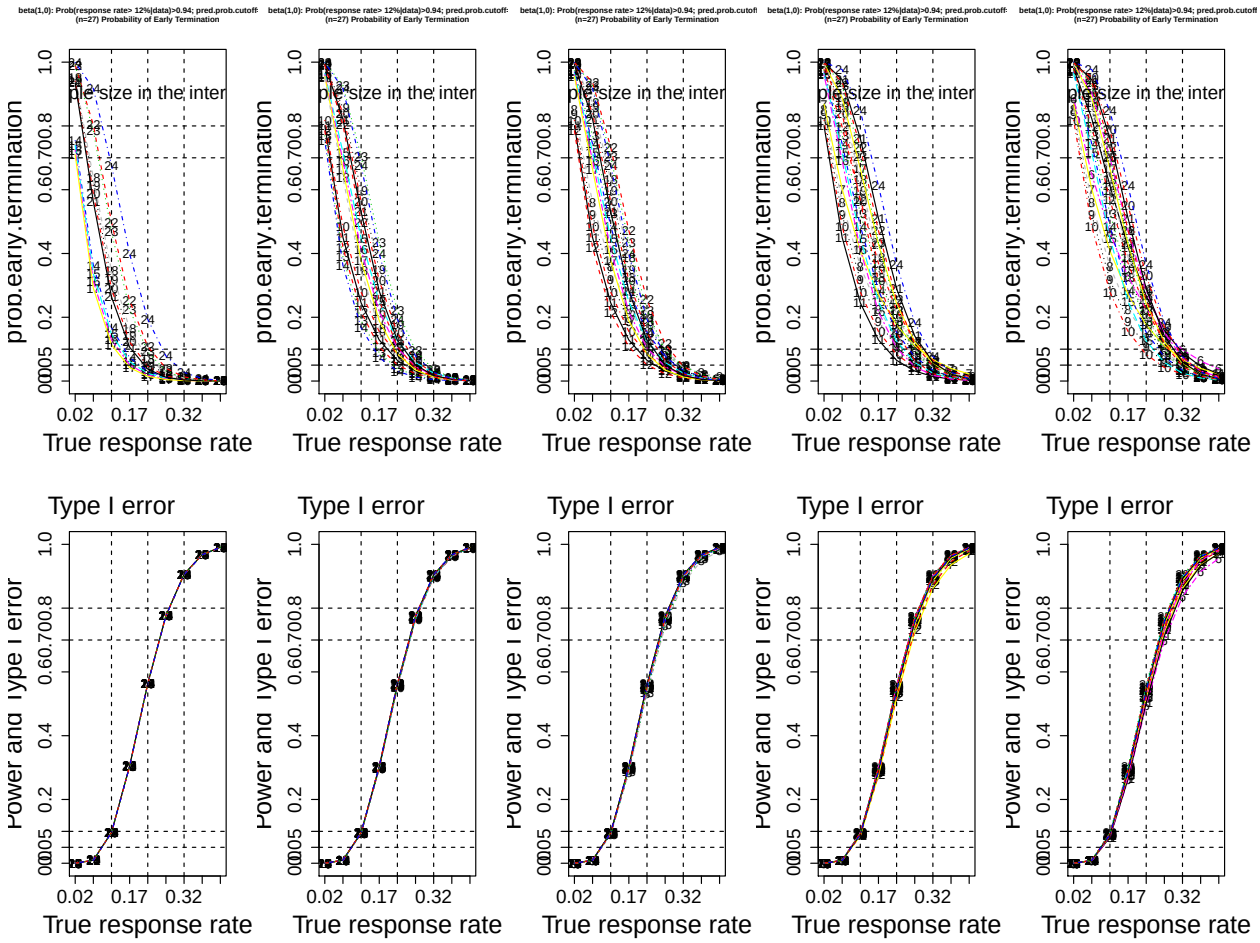

beta(1,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

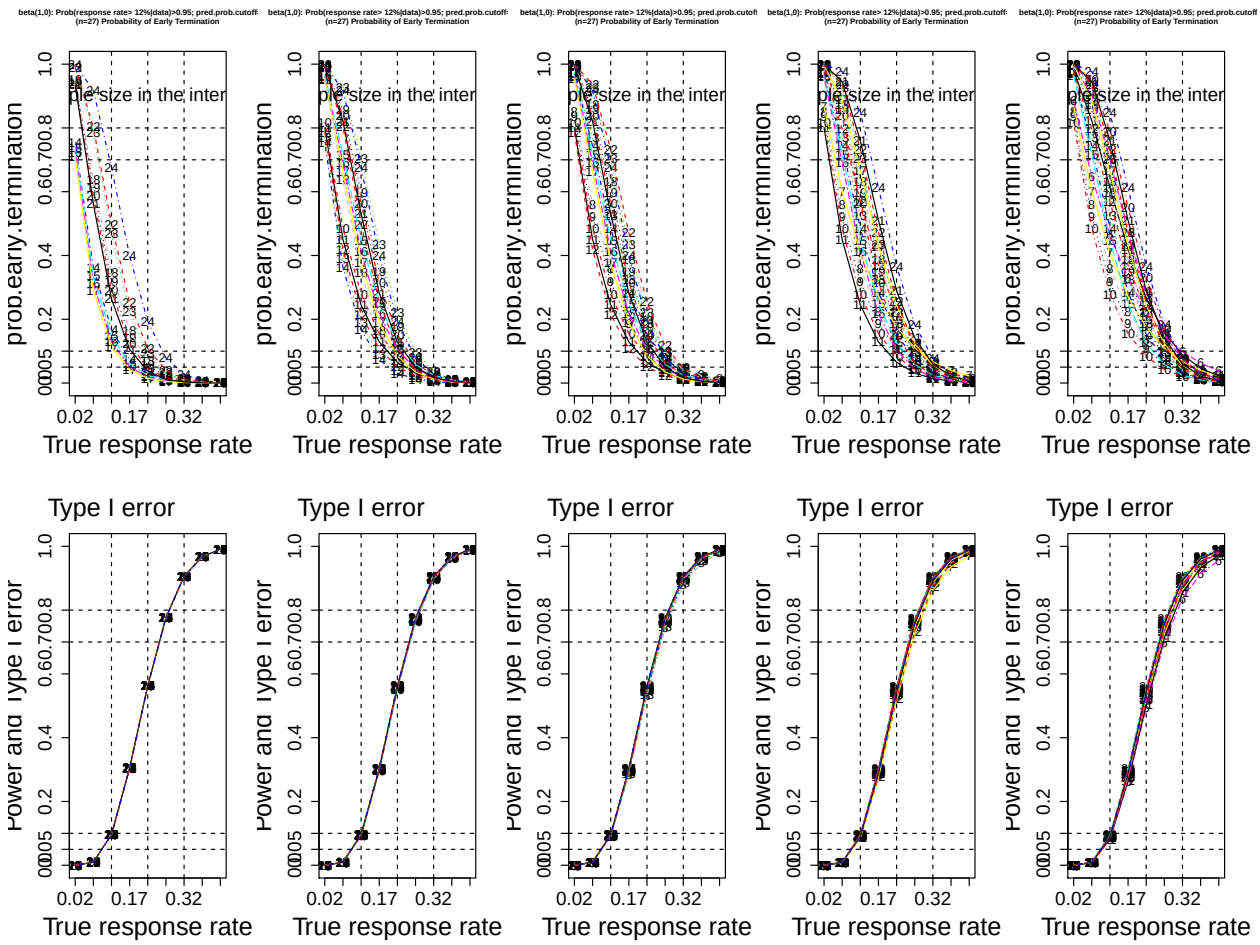

beta(1,0): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=27) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

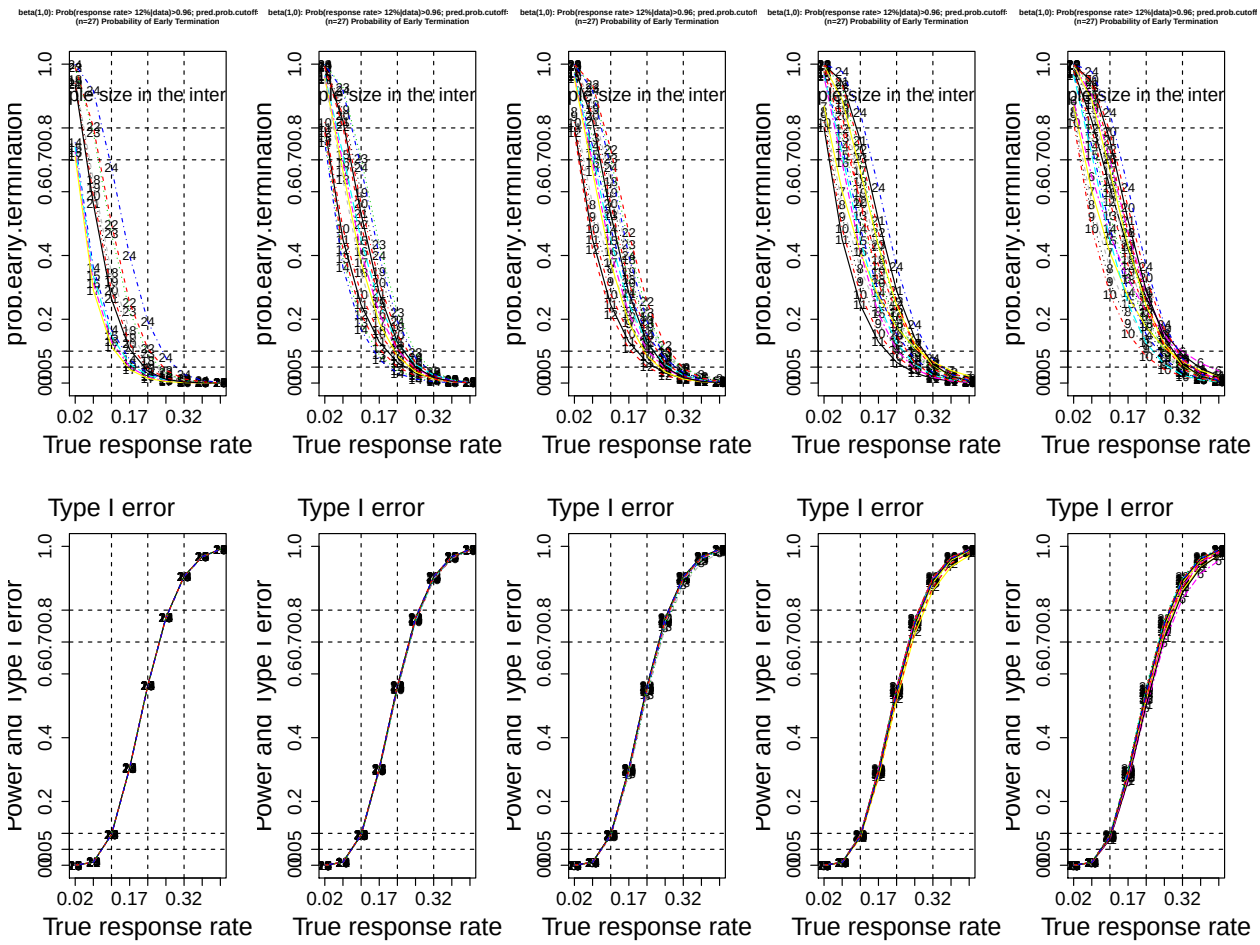

beta(1,0): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

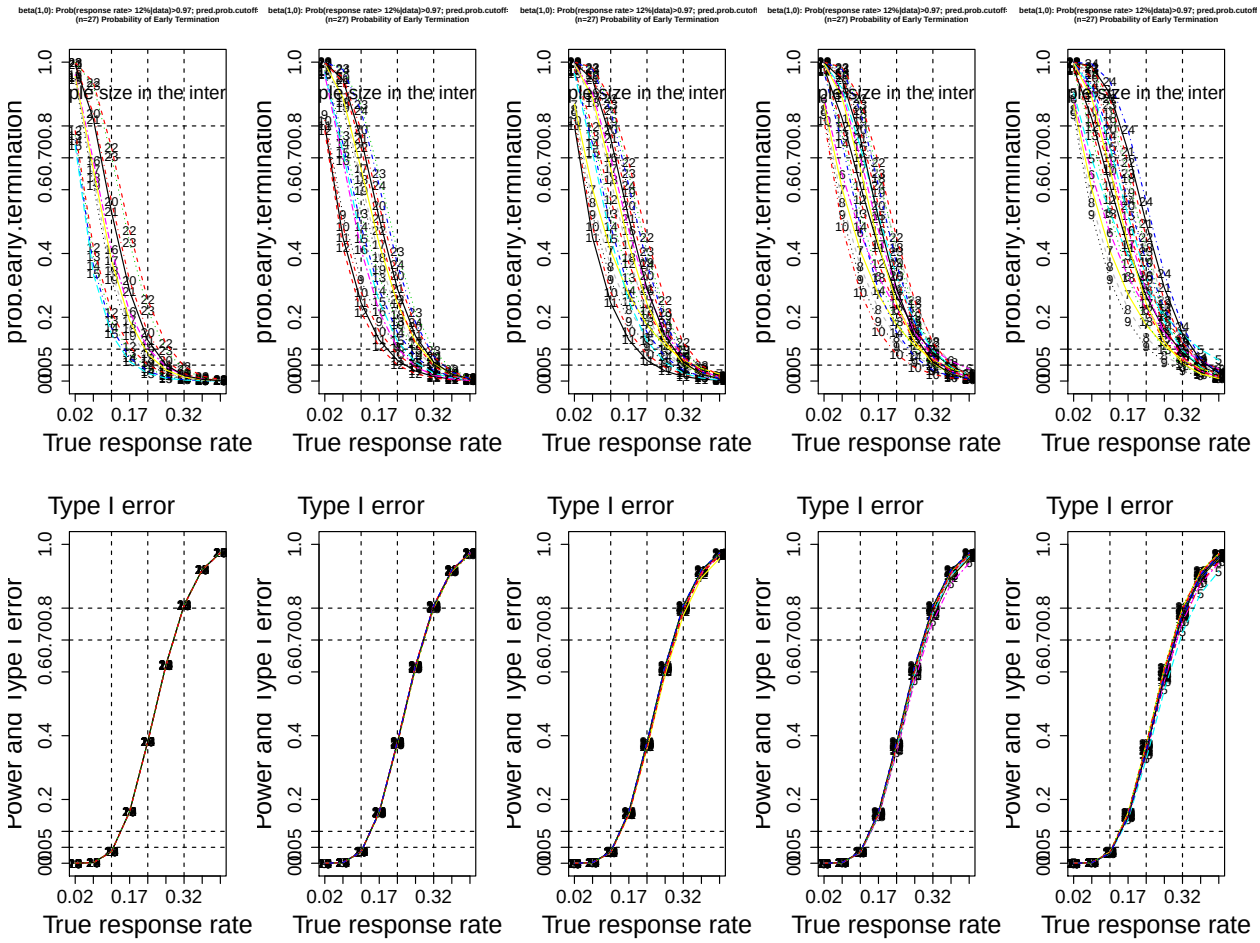

beta(1,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

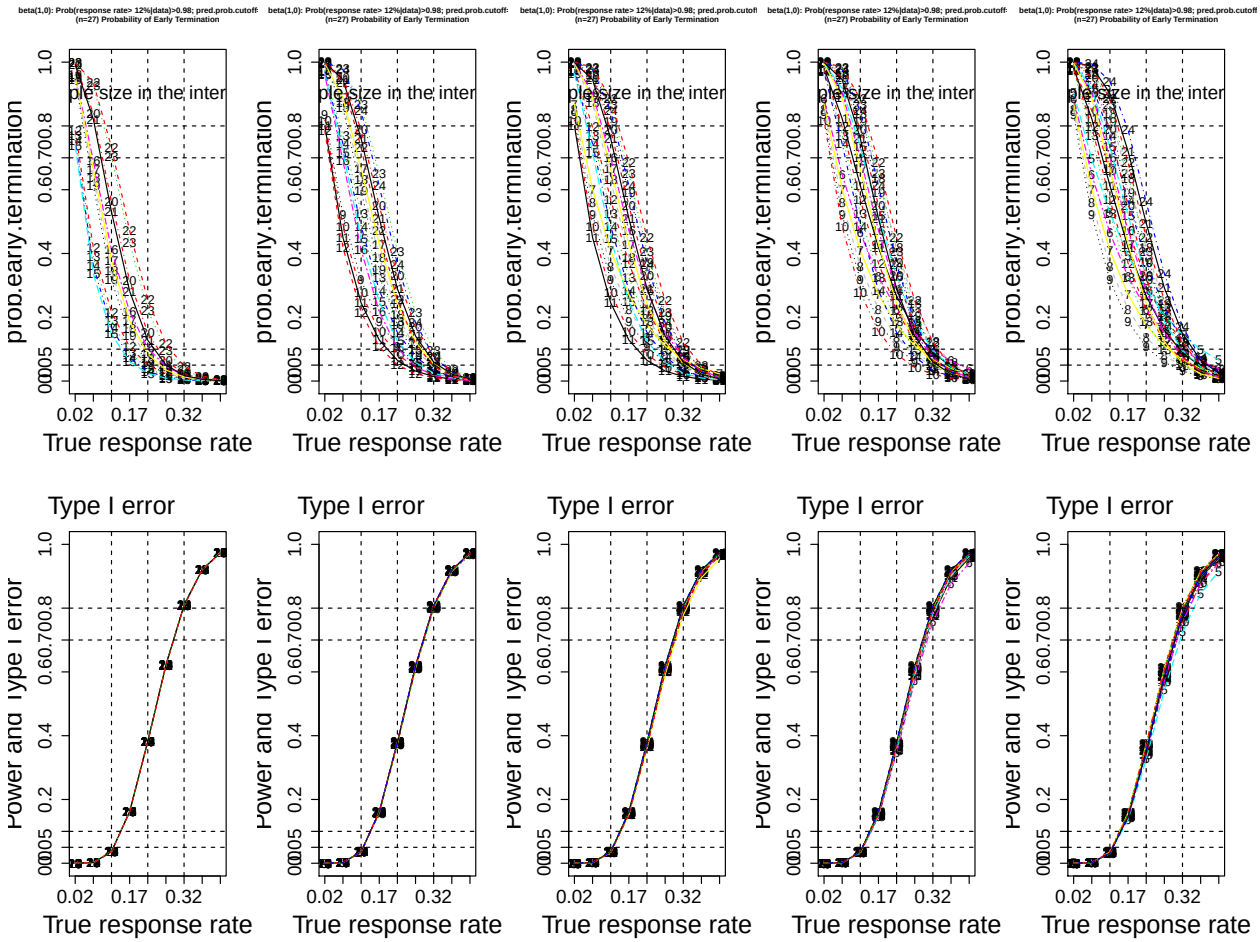

beta(1,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

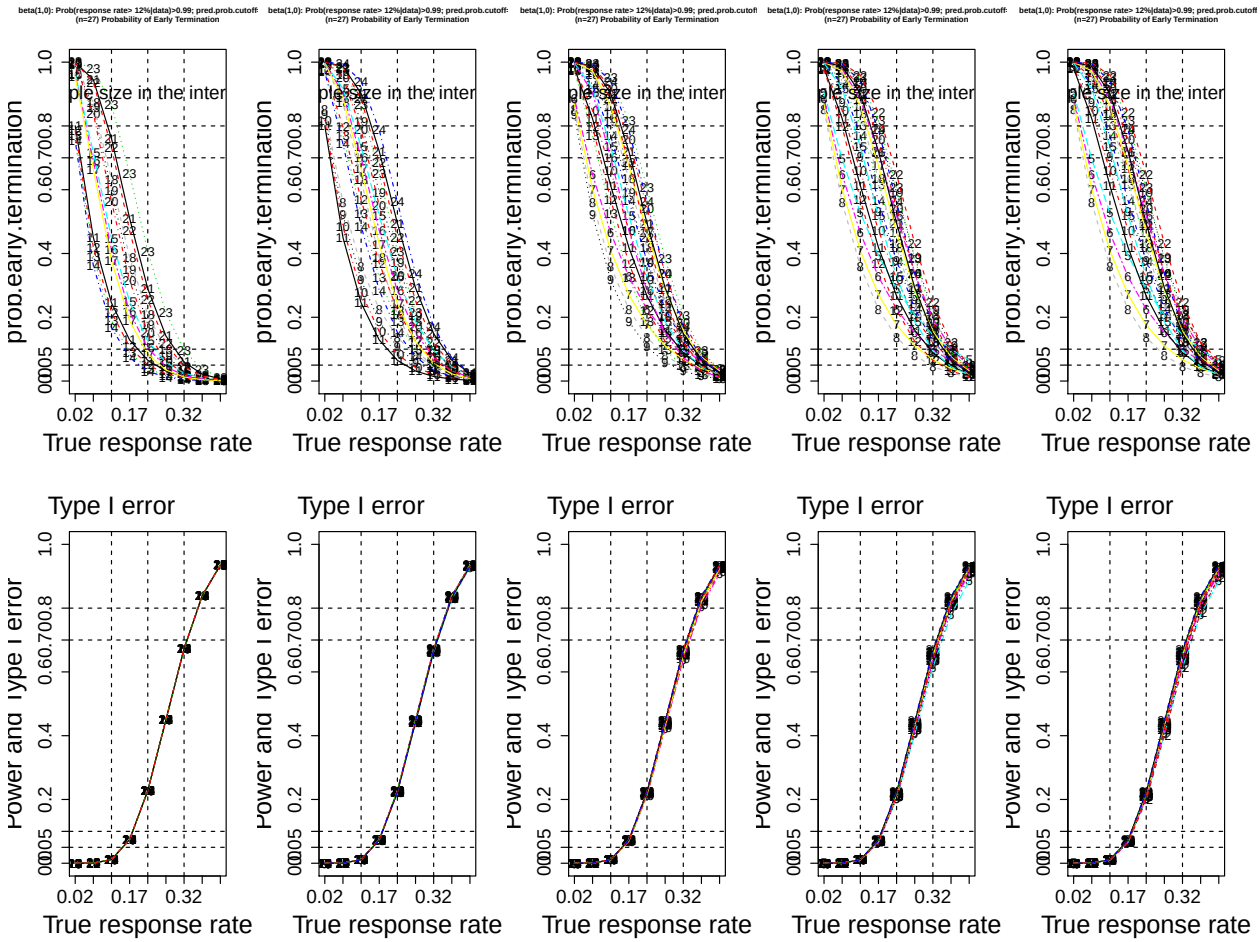

beta(1,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

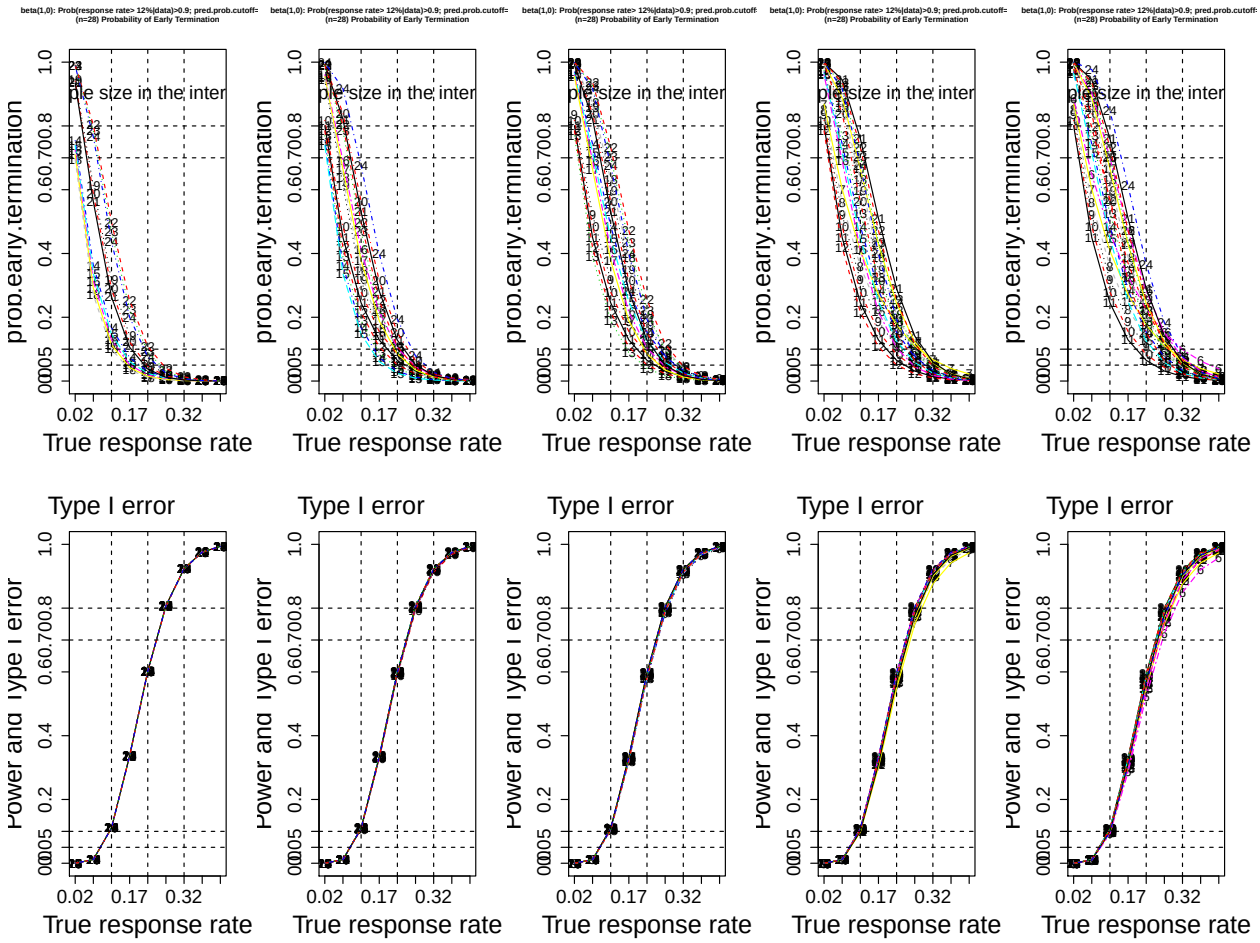

beta(1,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

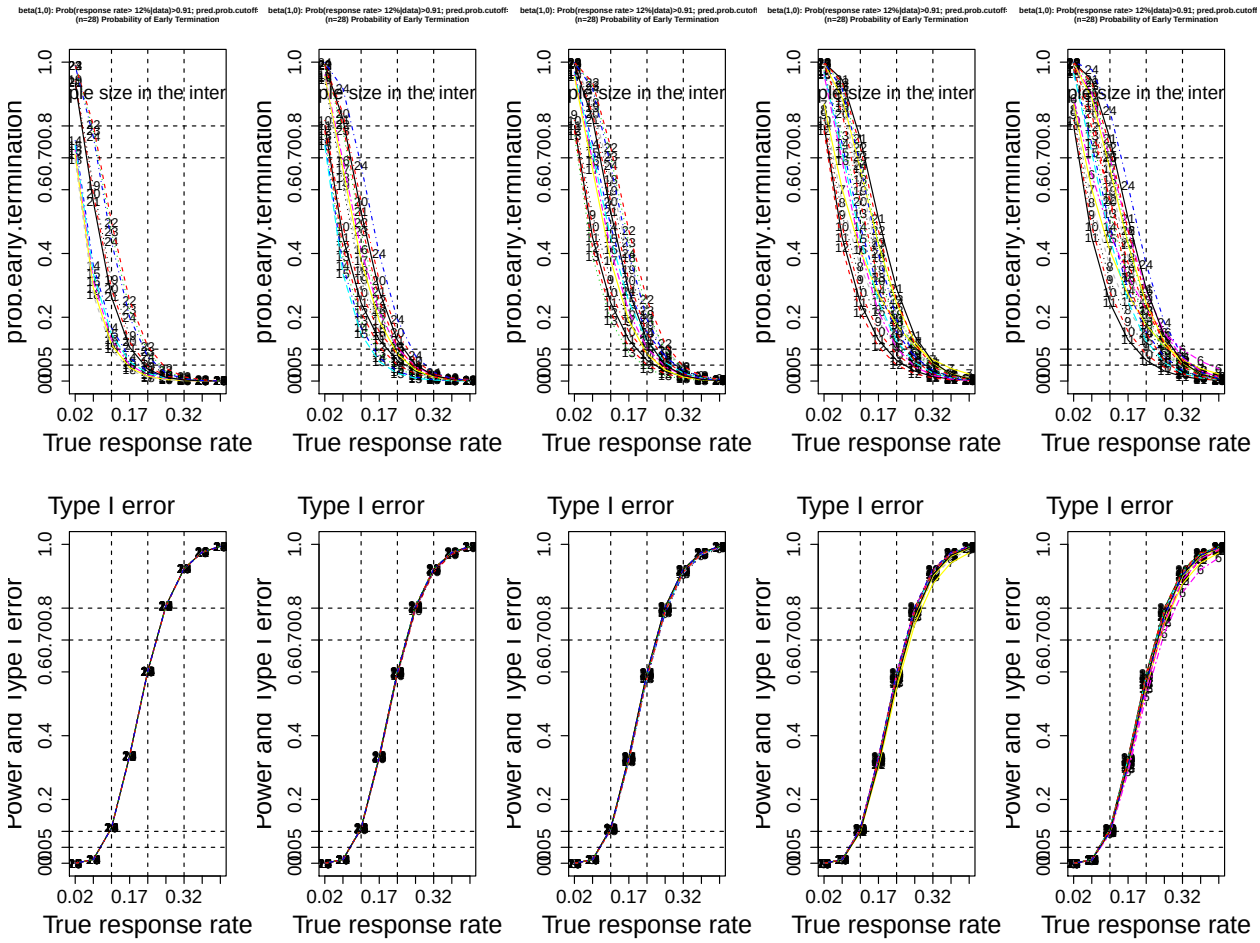

beta(1,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
True response rate

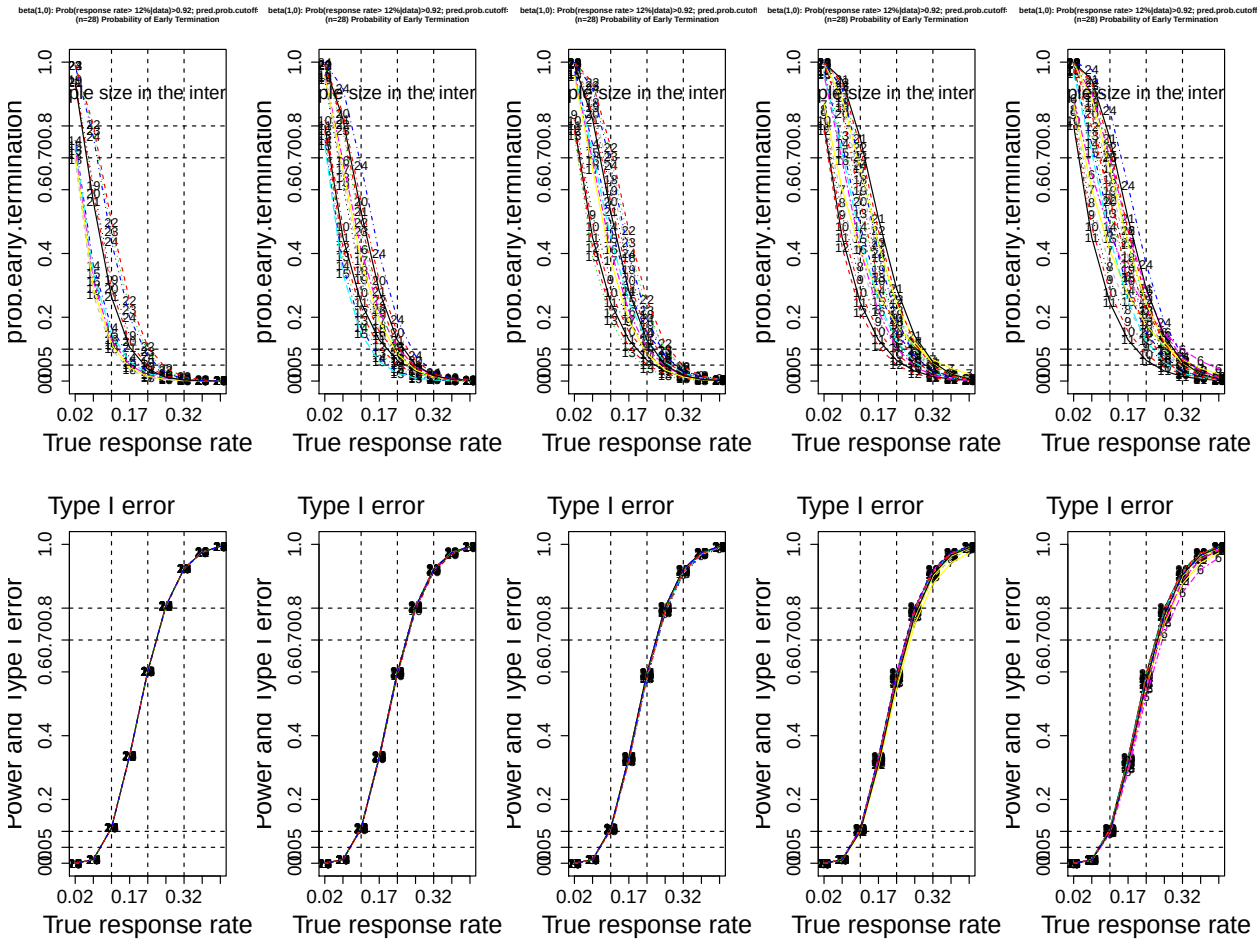

beta(1,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

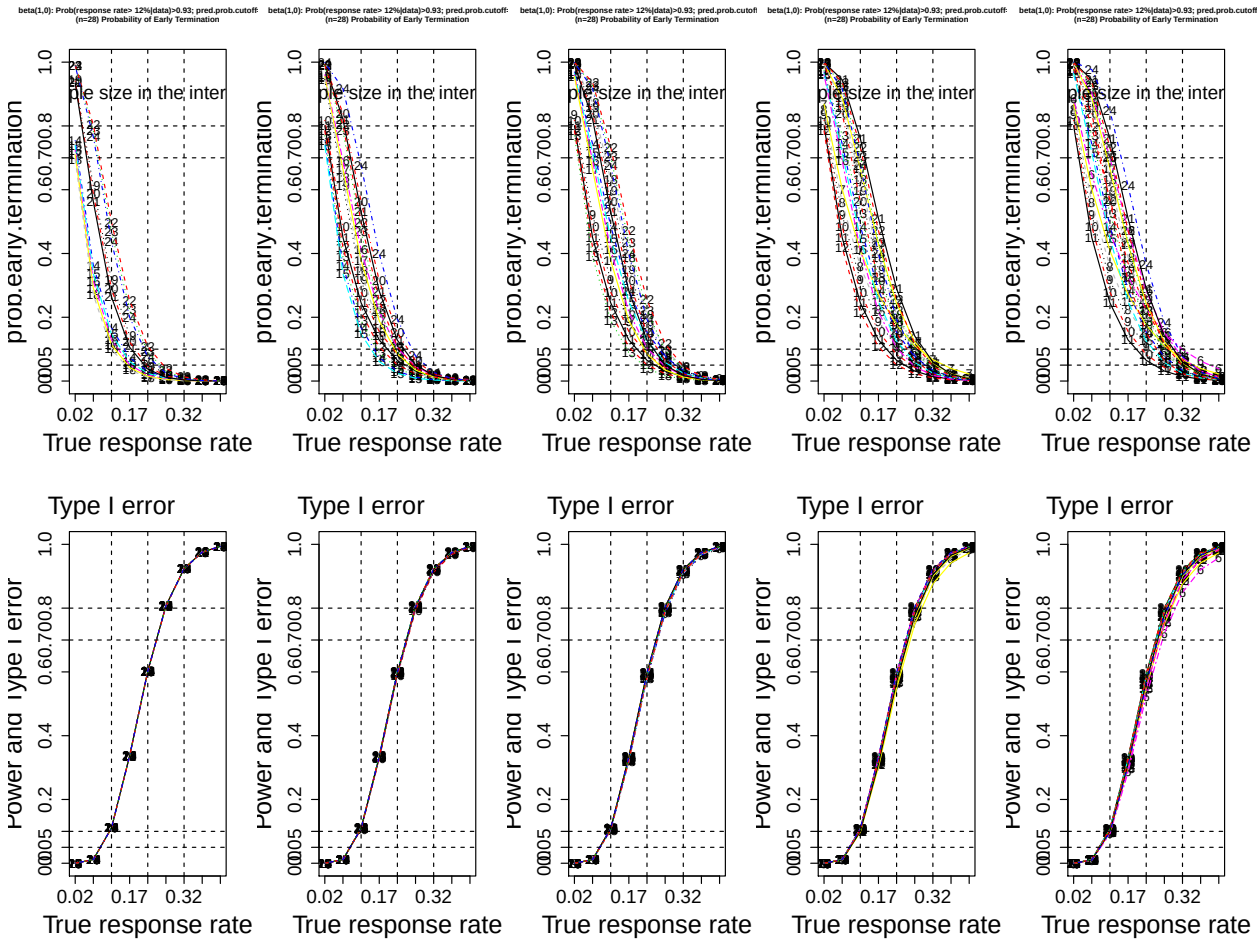

beta(1,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

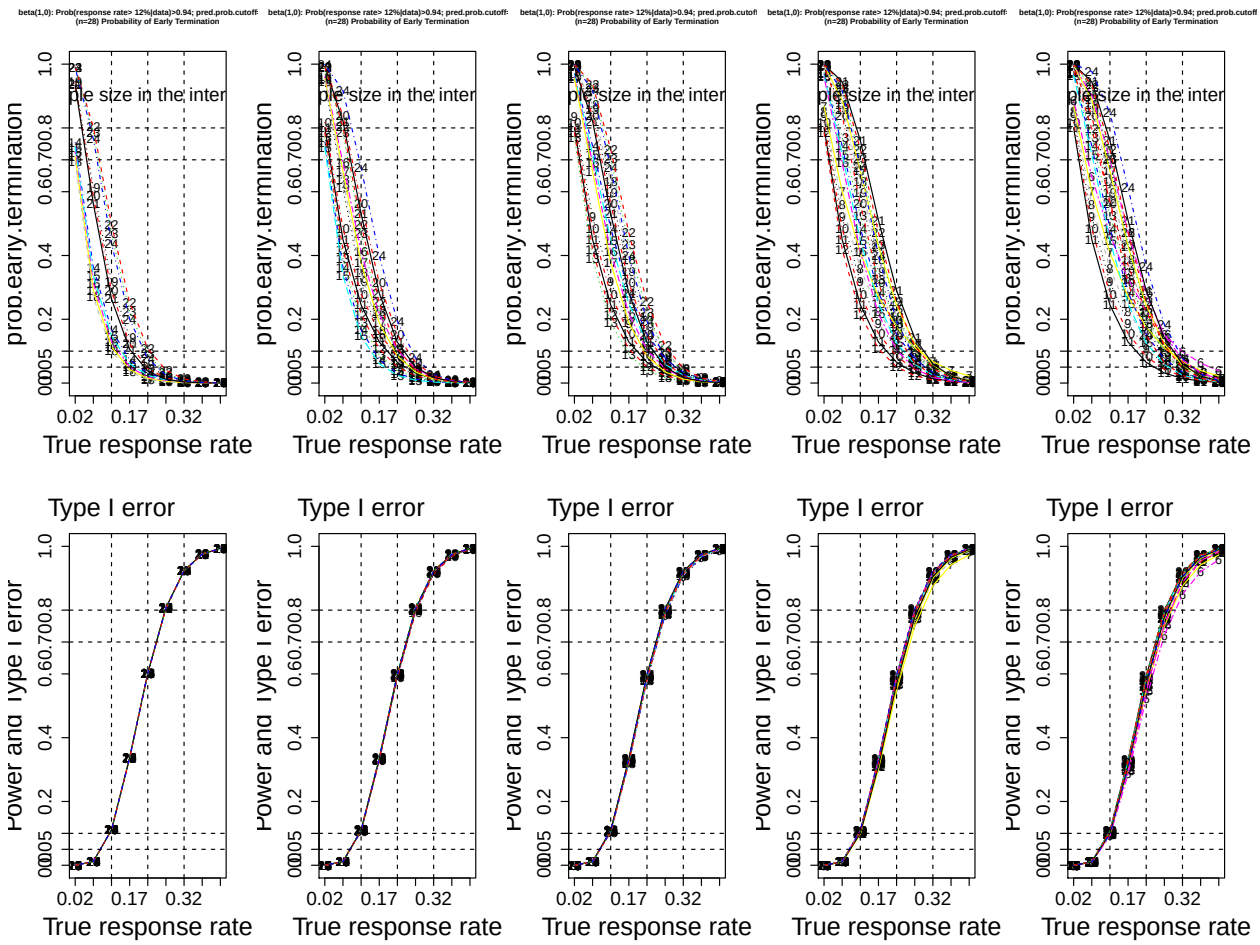

beta(1,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

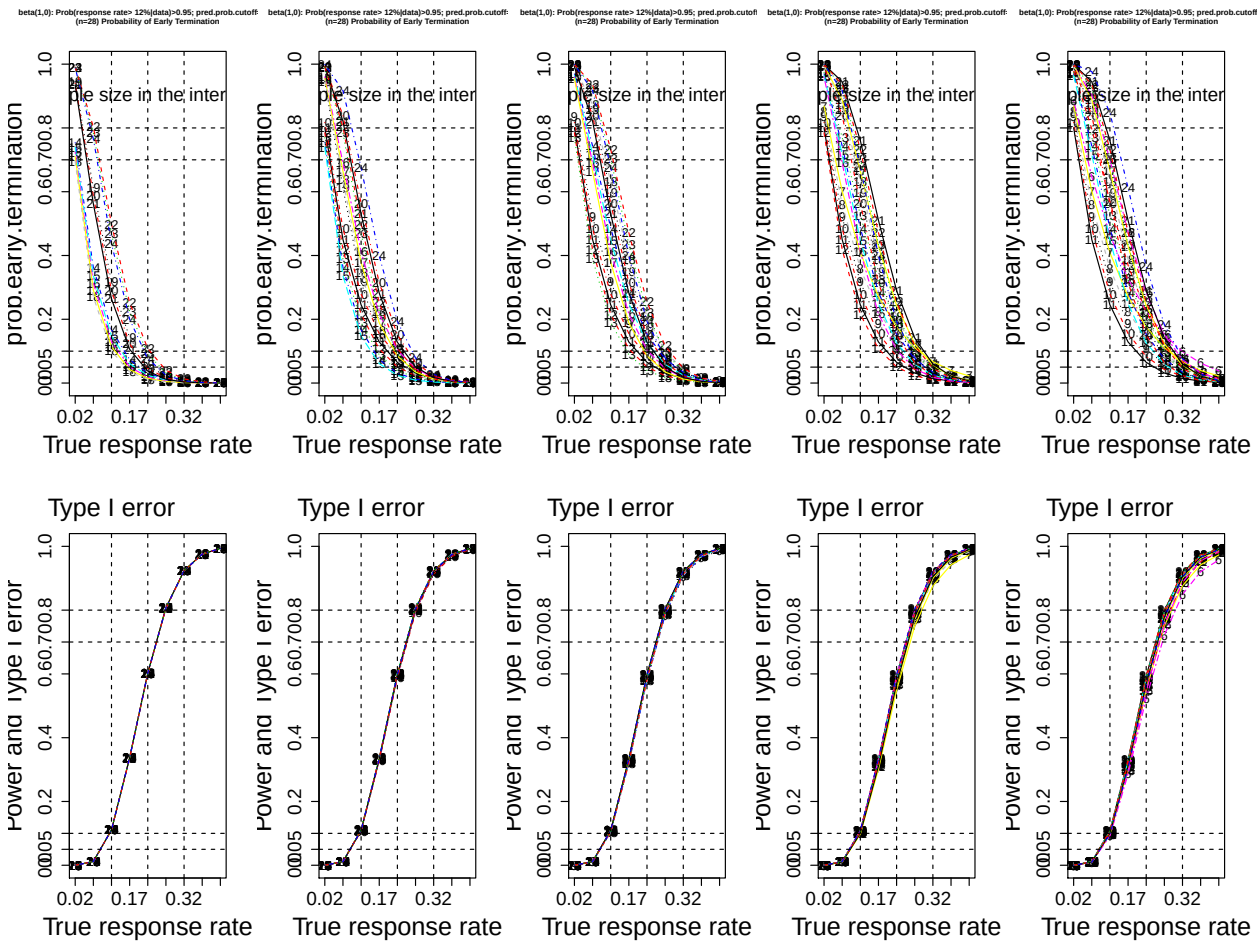

beta(1,0): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

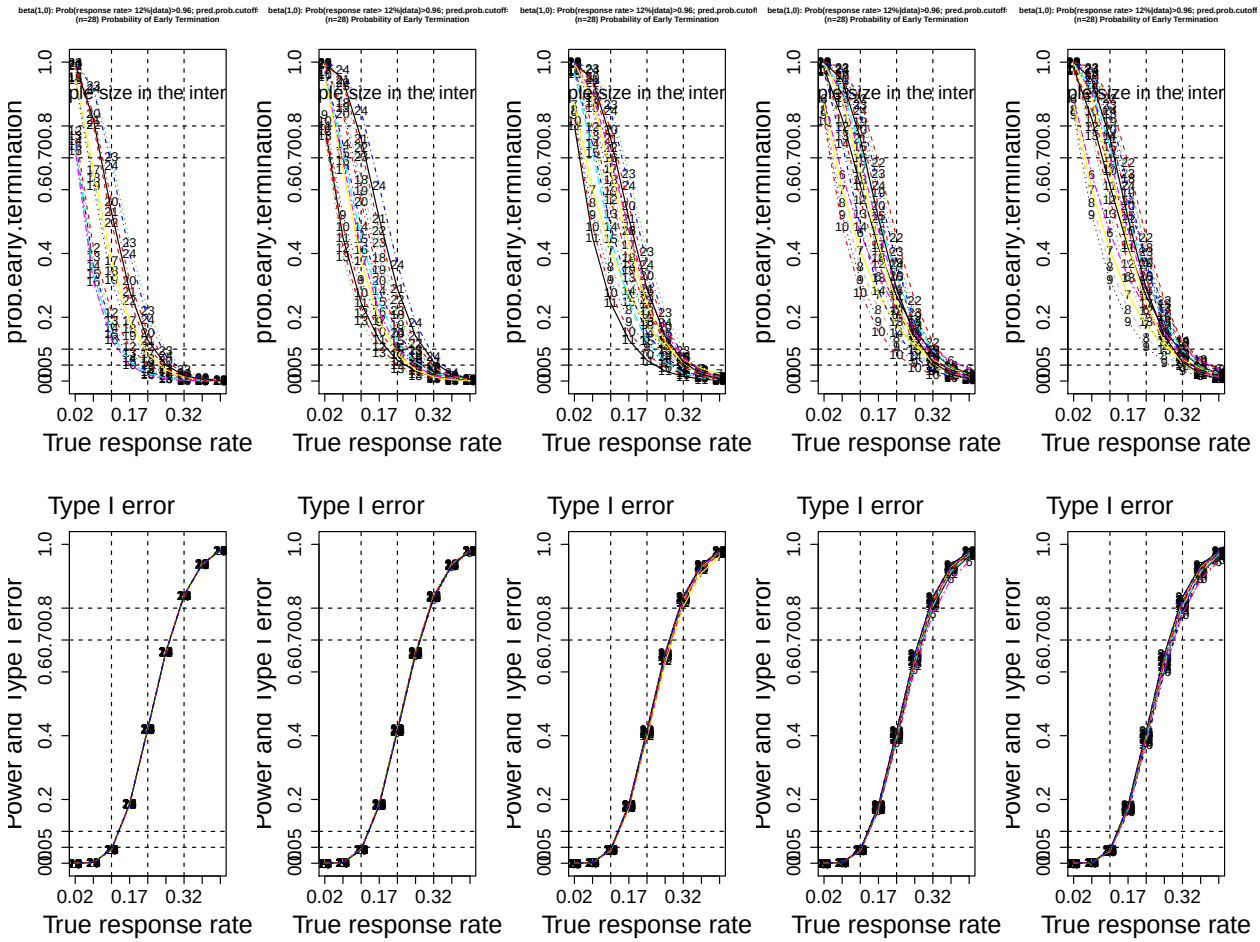

beta(1,0): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

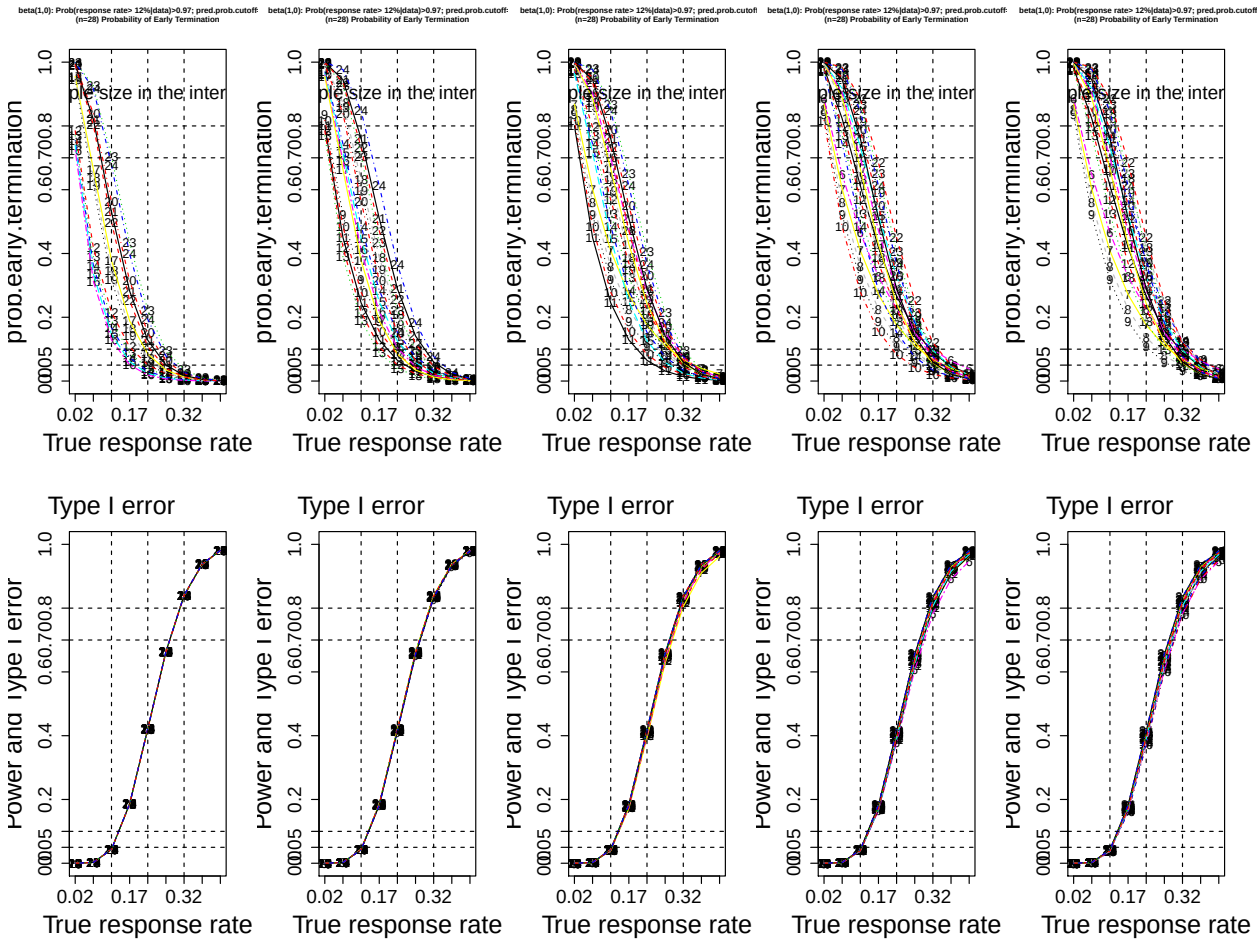

beta(1,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

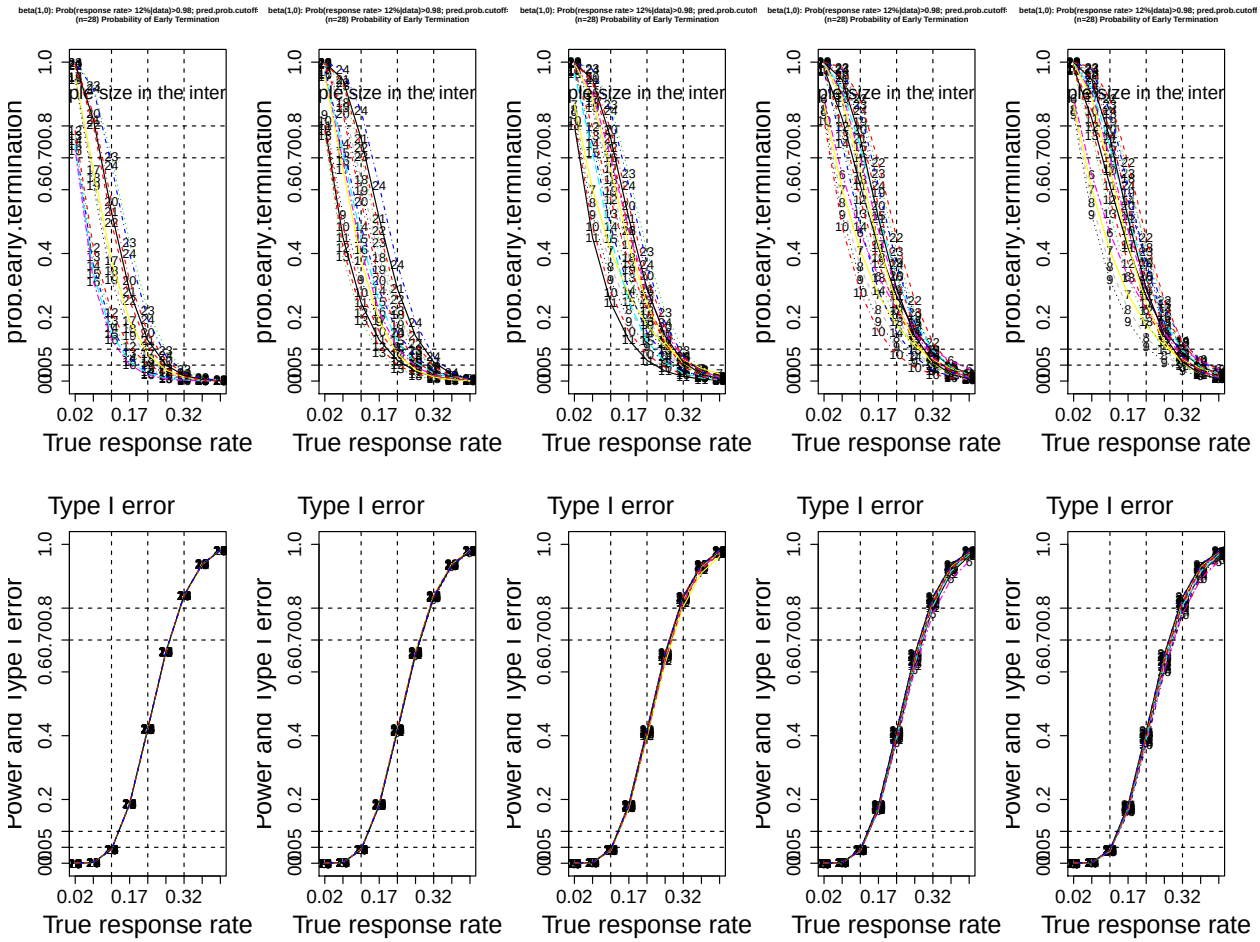

beta(1,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

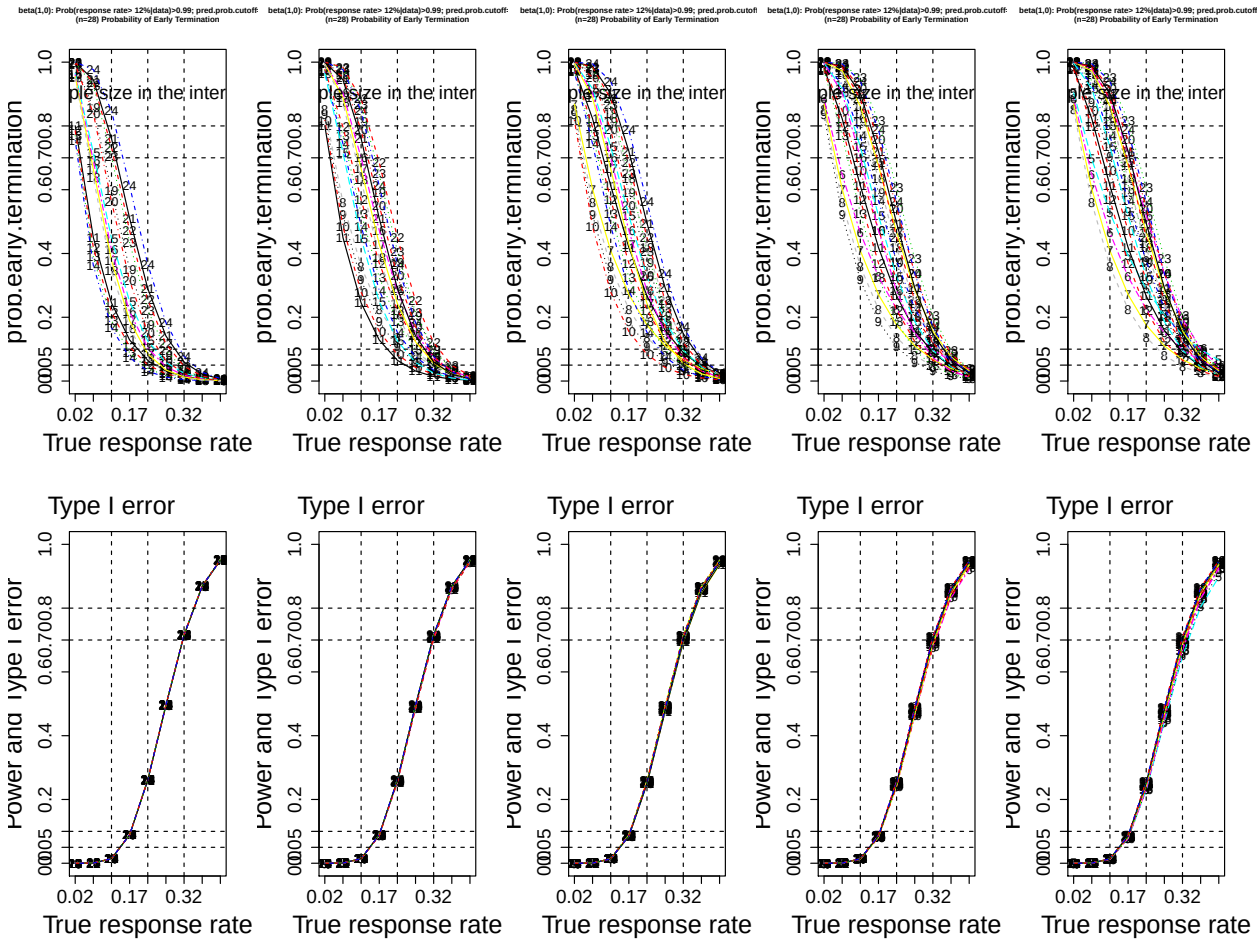

beta(1,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

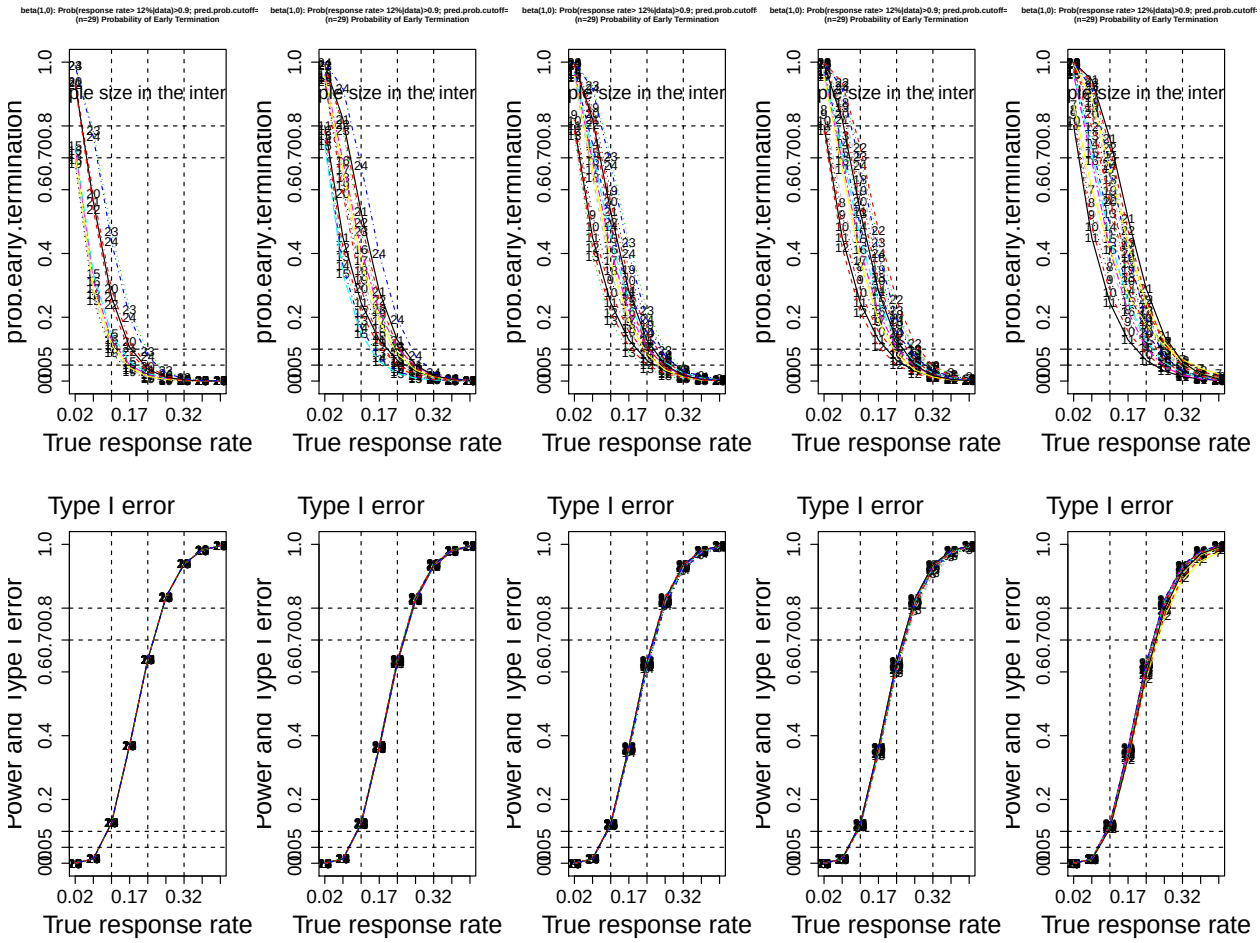

beta(1,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
True response rate

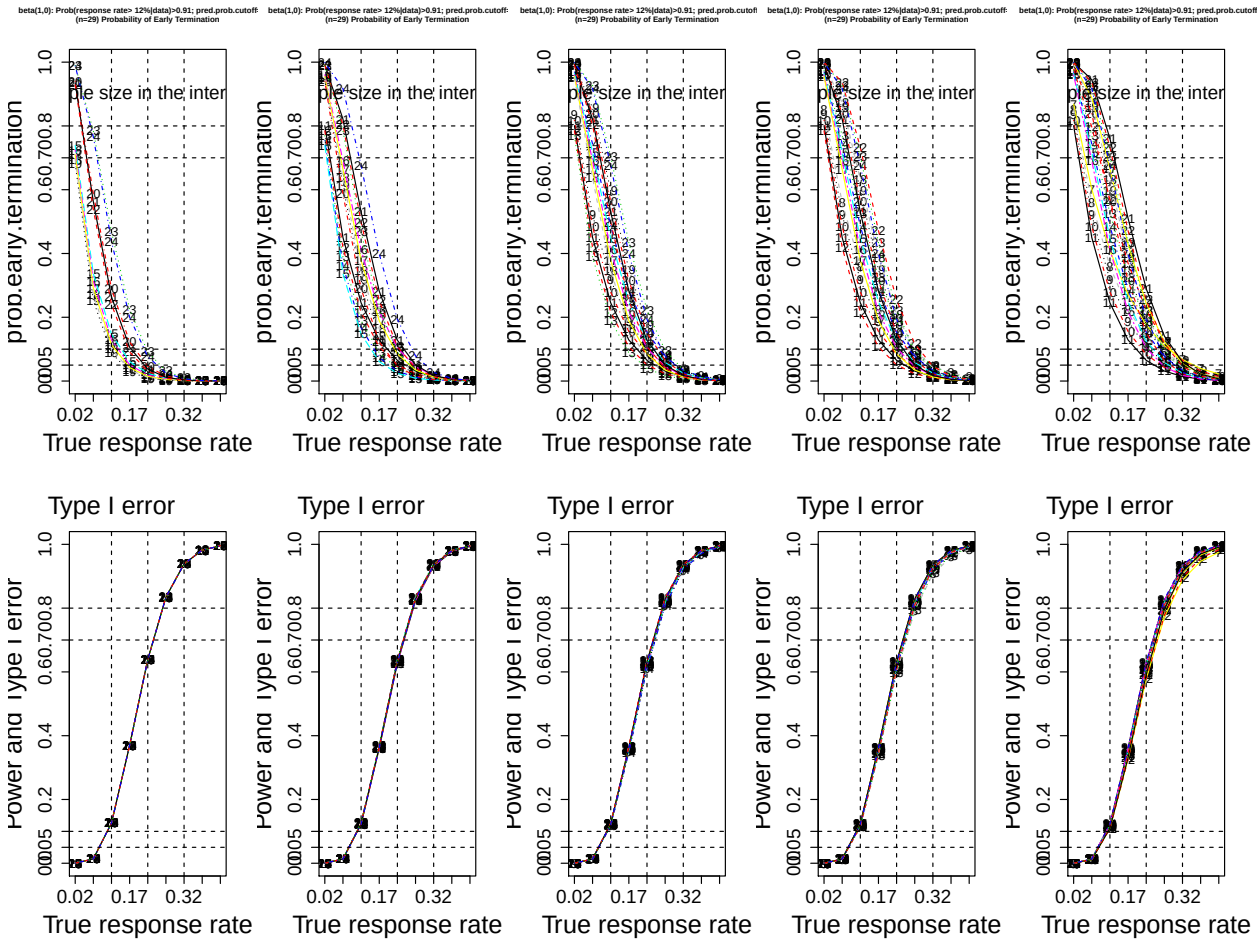

beta(1,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

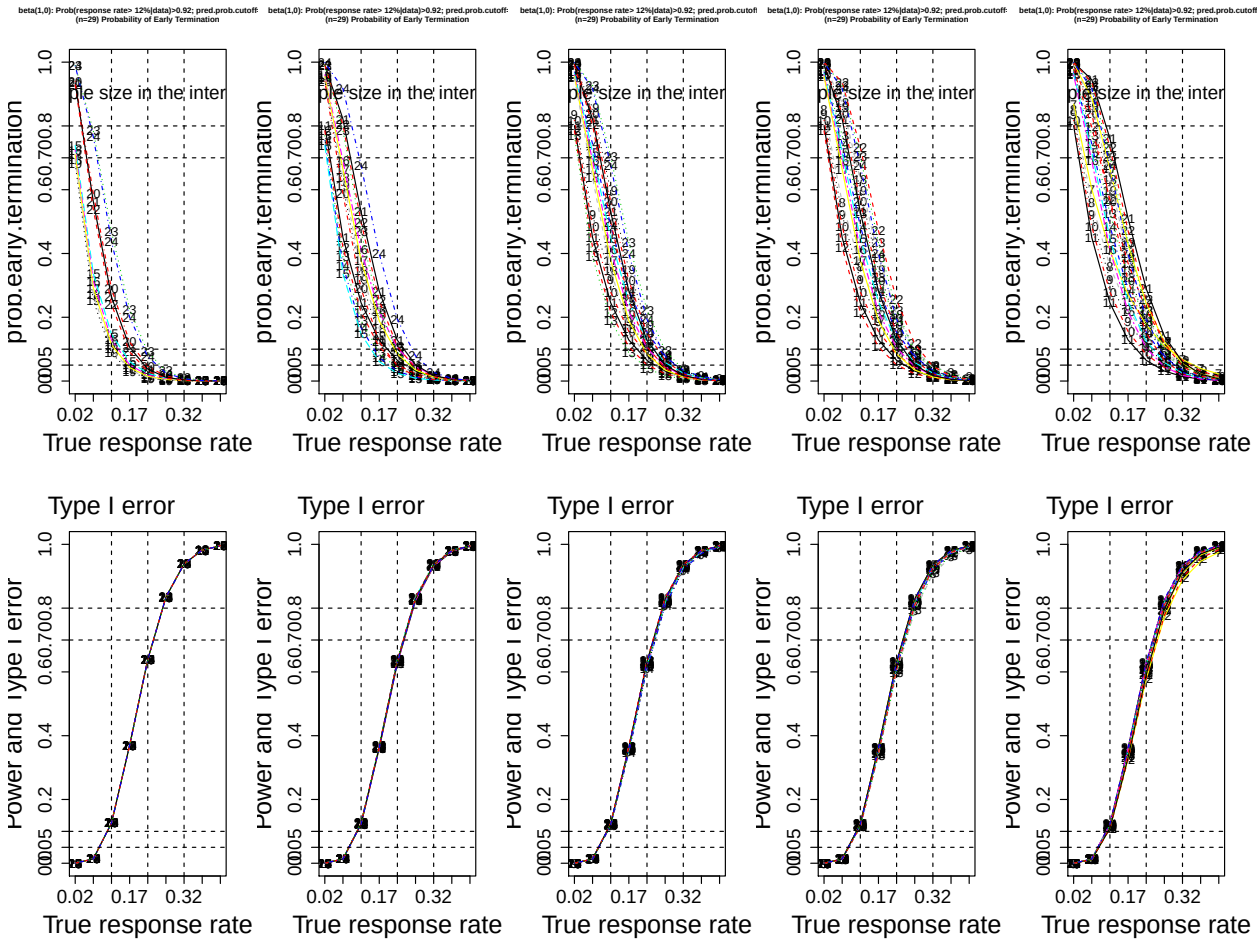

beta(1,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

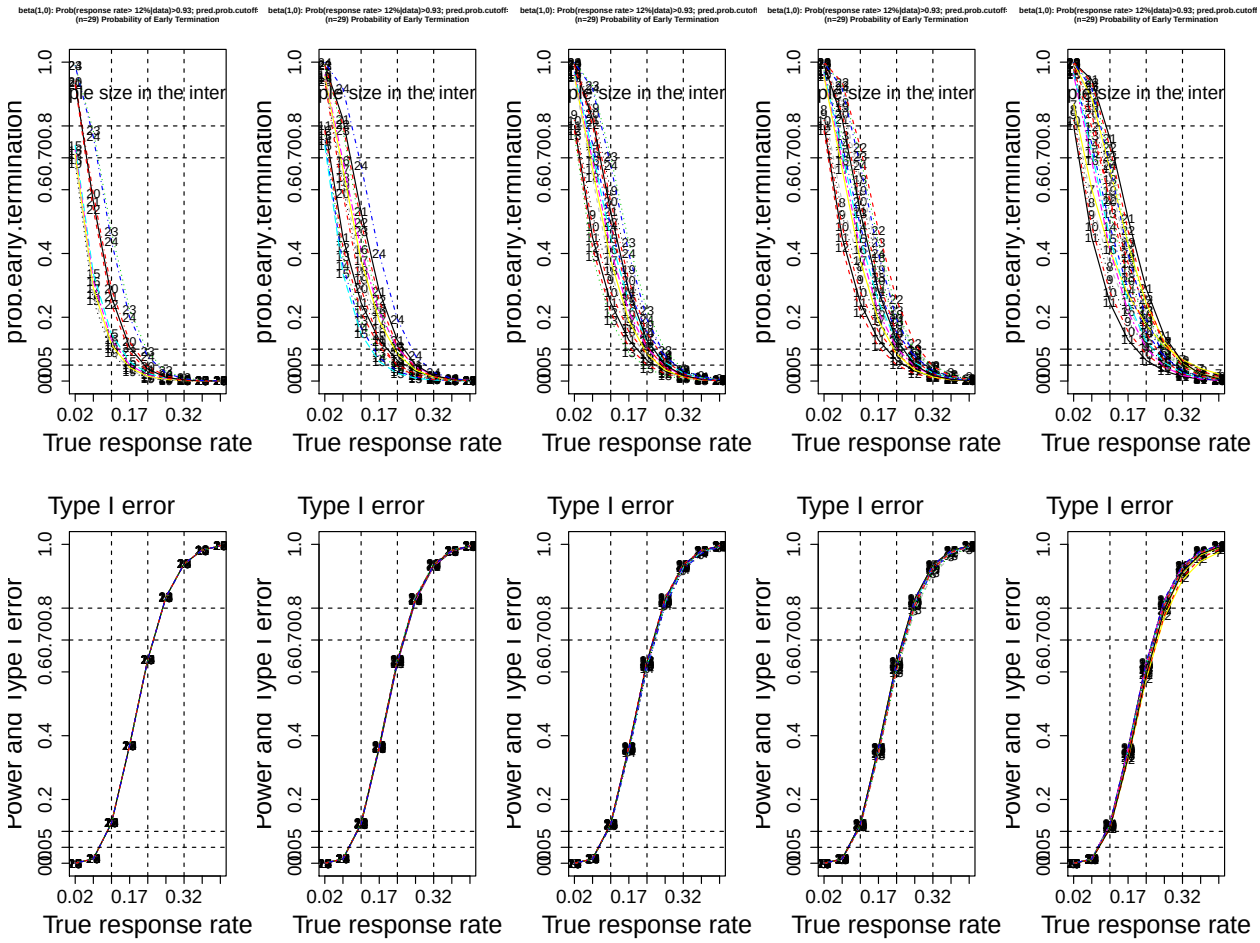

beta(1,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

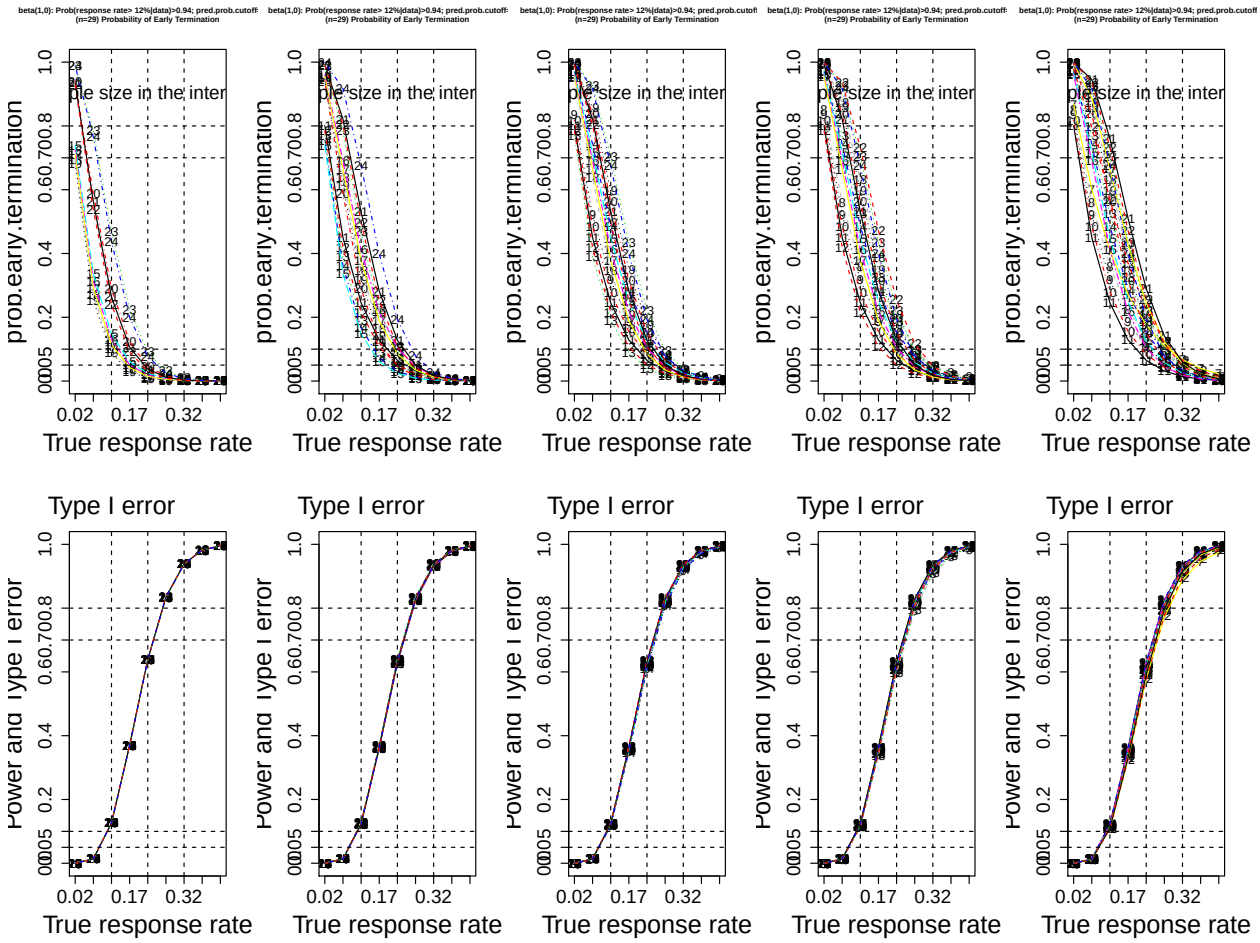

beta(1,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

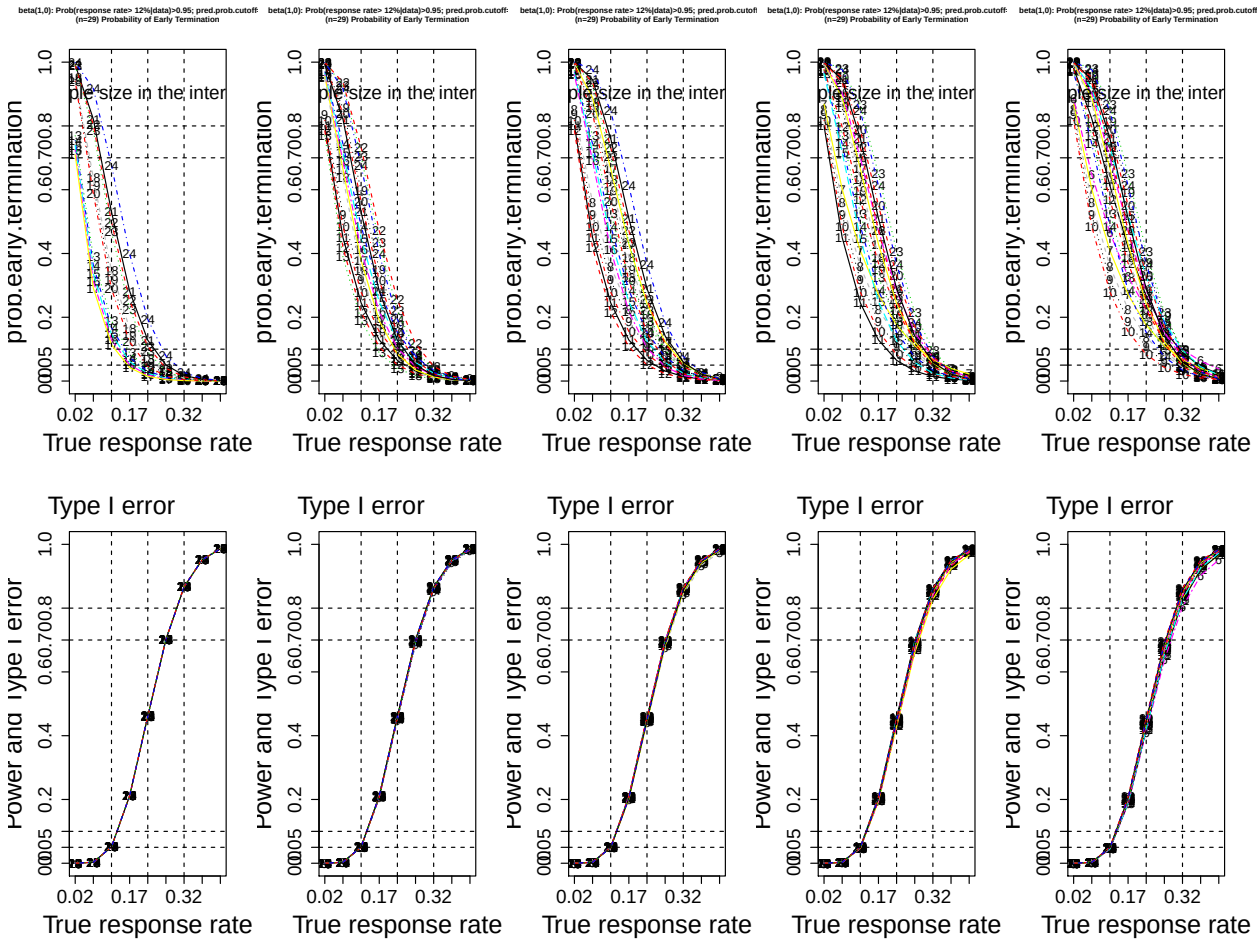

beta(1,0): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=29) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

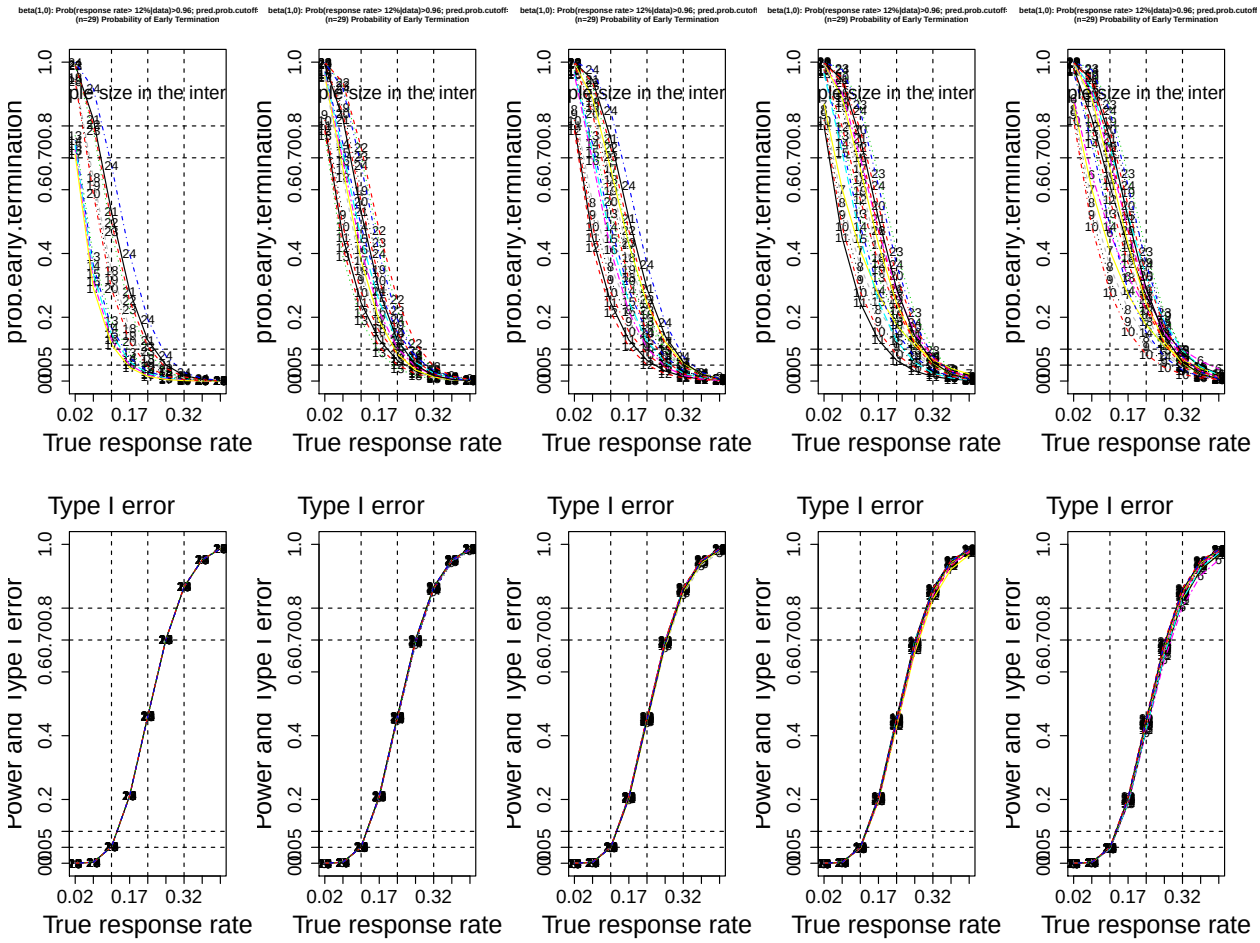

beta(1,0): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

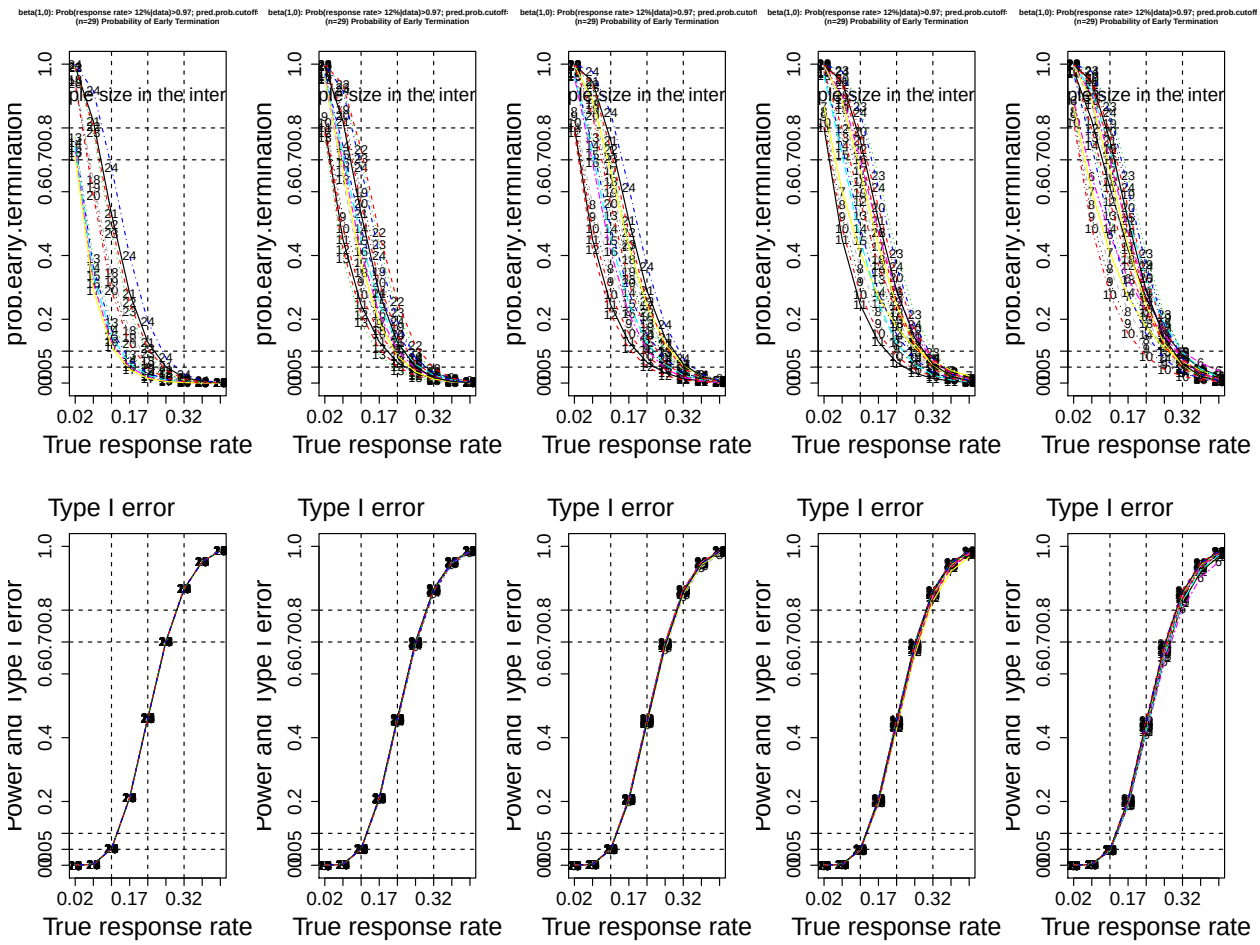

beta(1,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

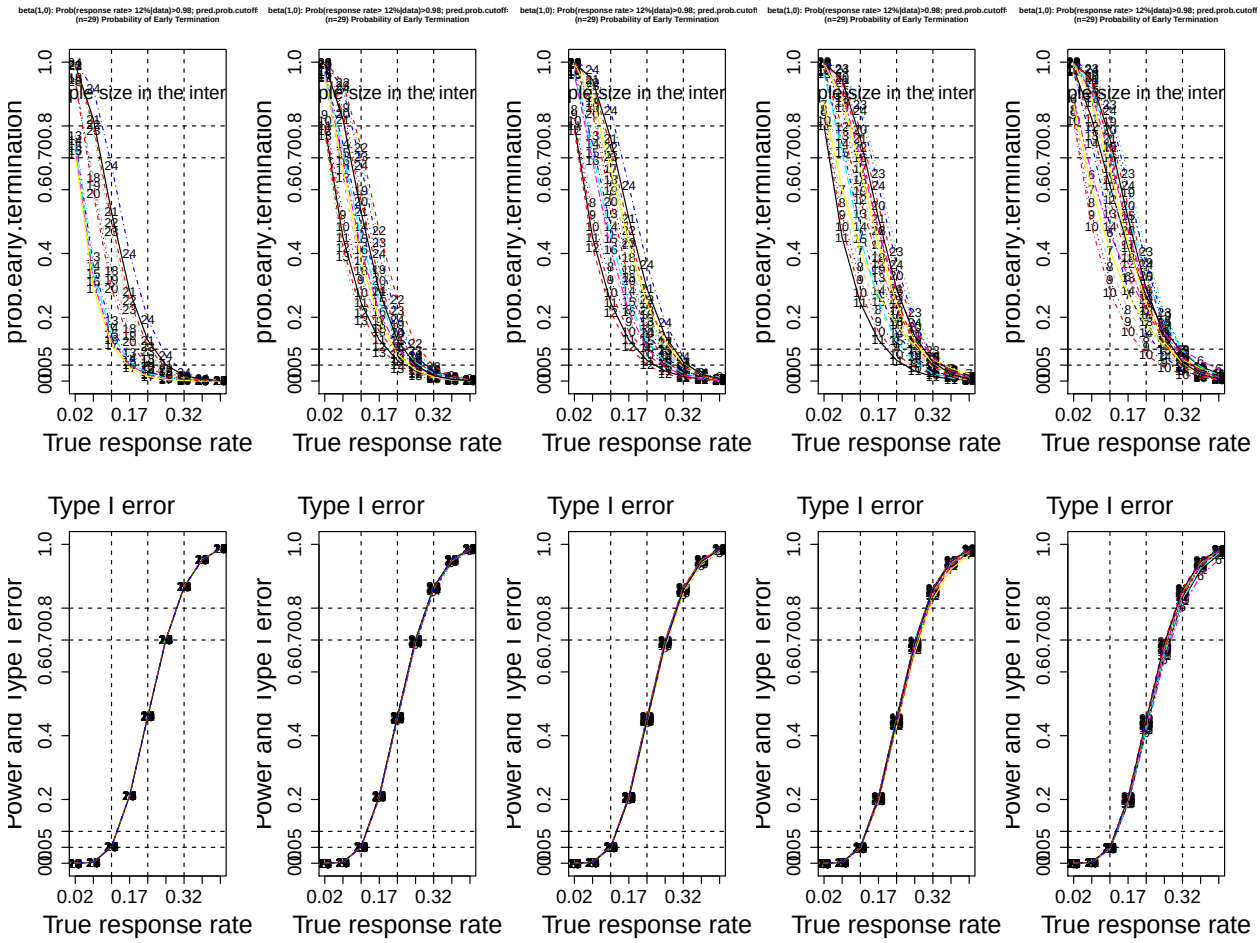

beta(1,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

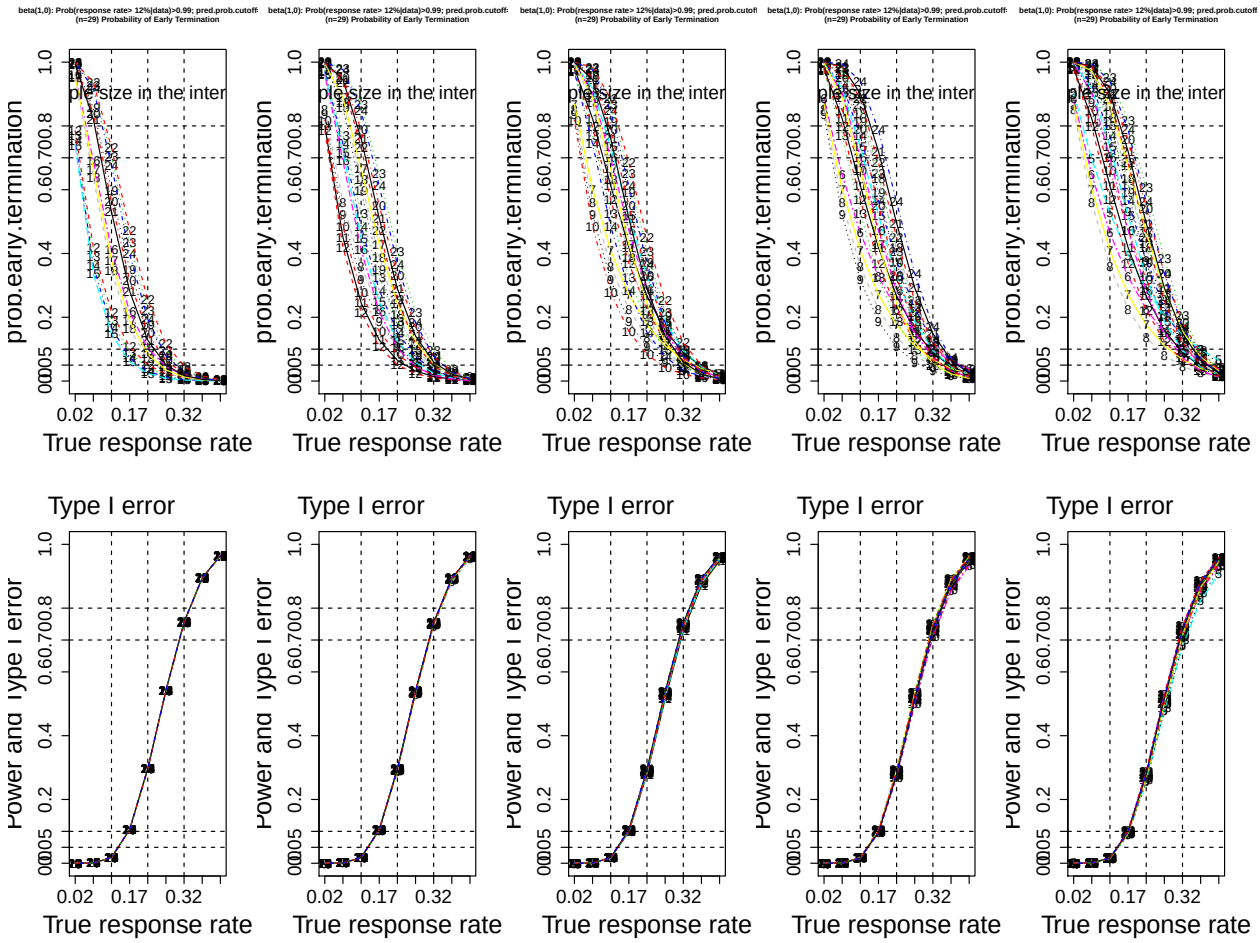

beta(1,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

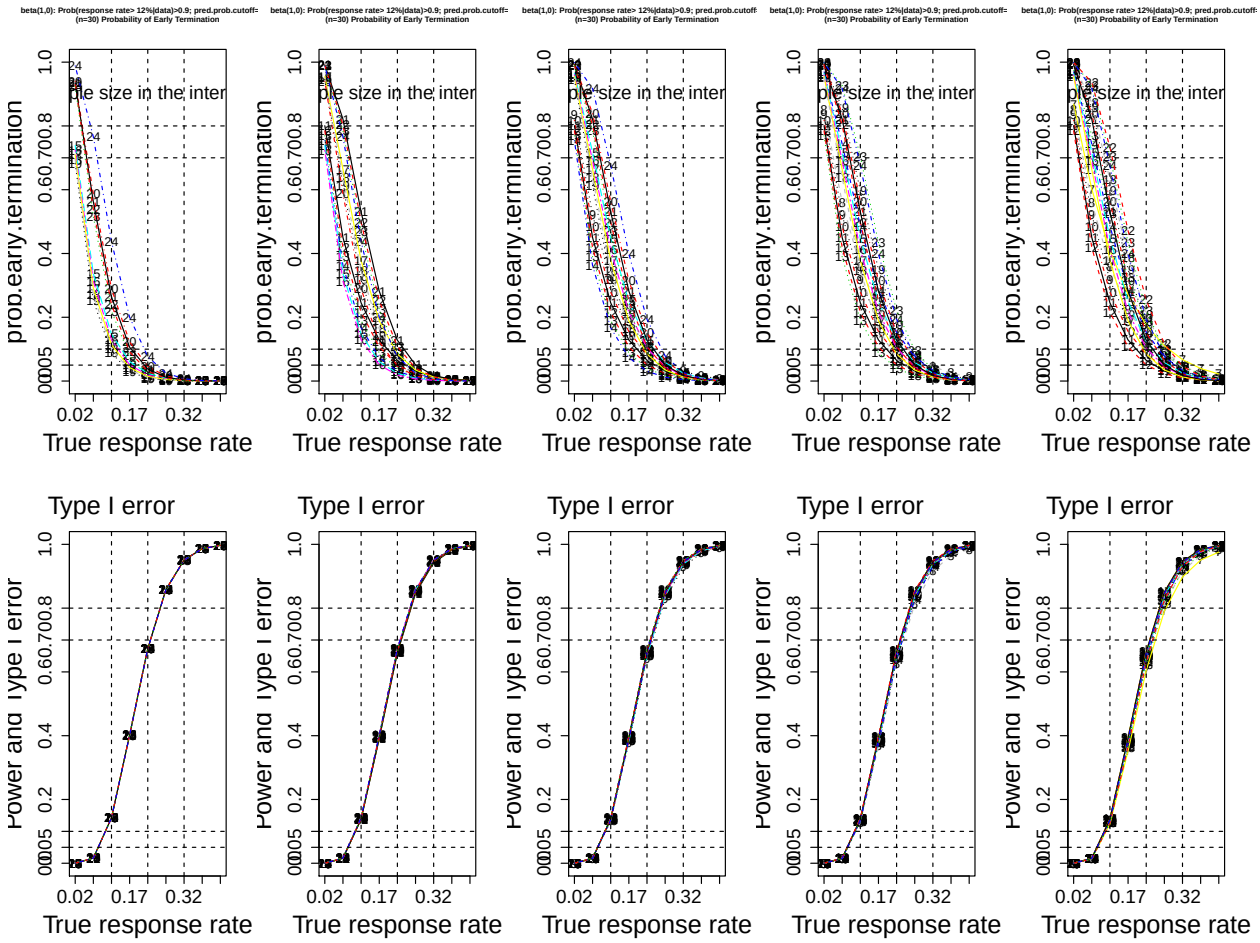

beta(1,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

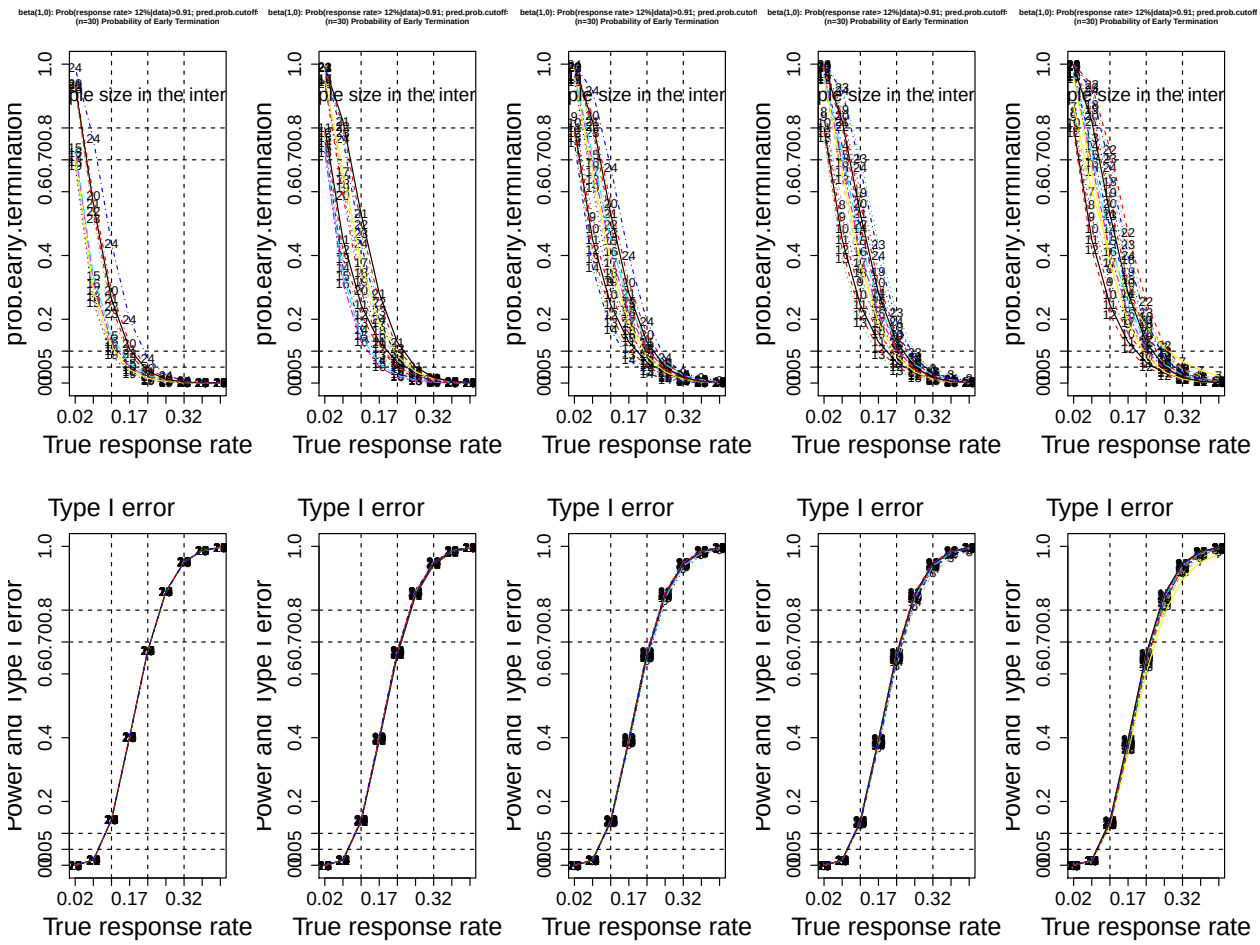

beta(1,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

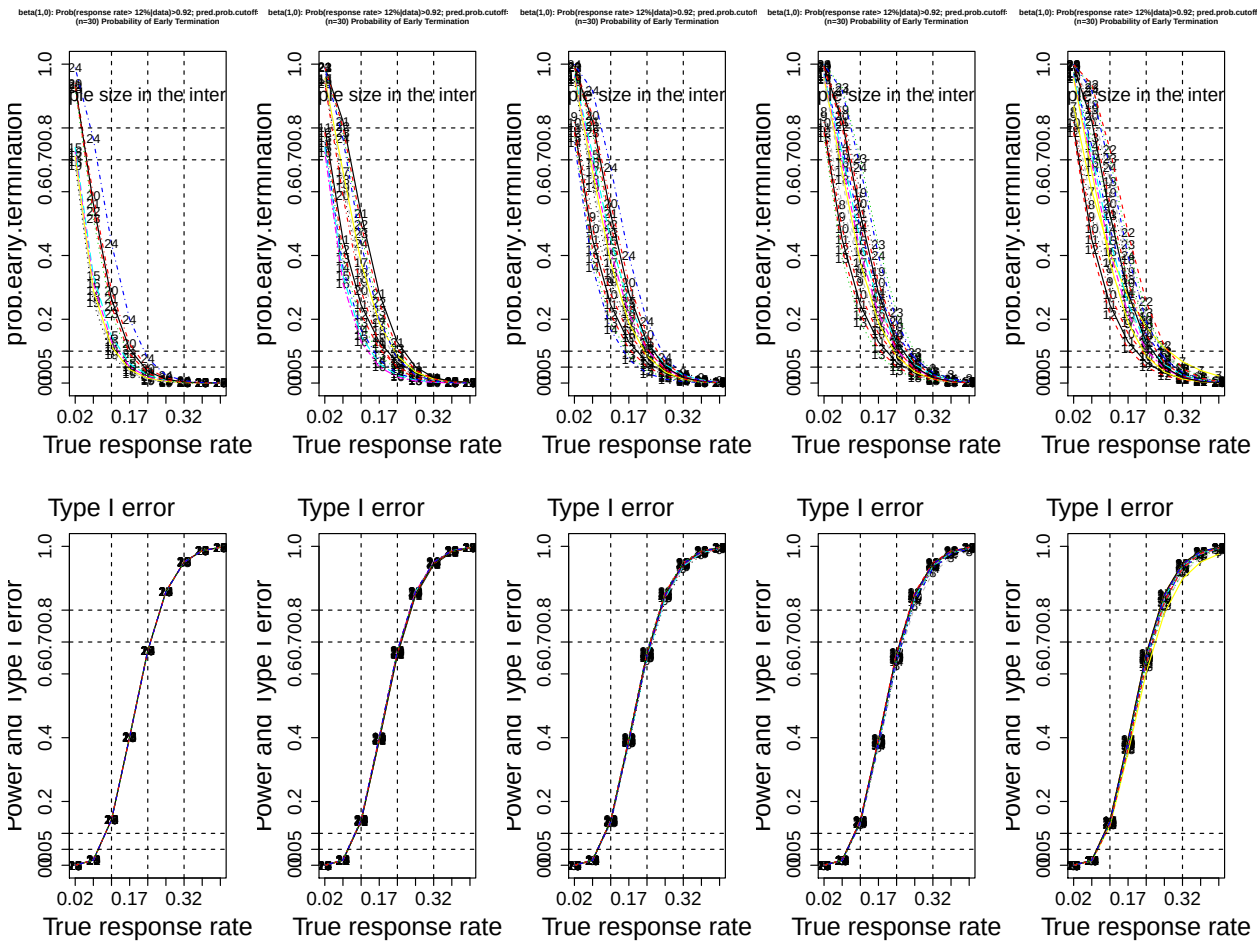

beta(1,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

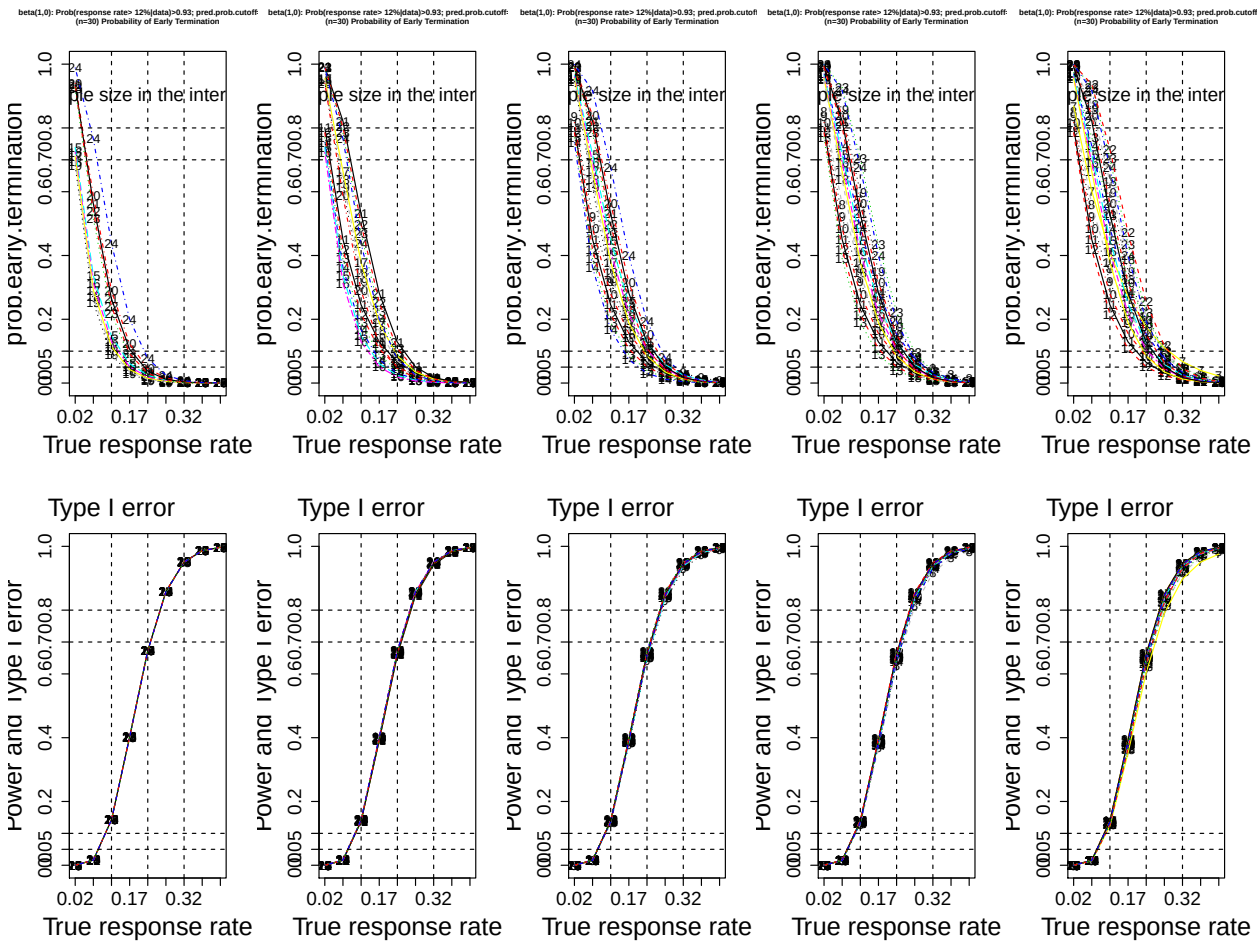

beta(1,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

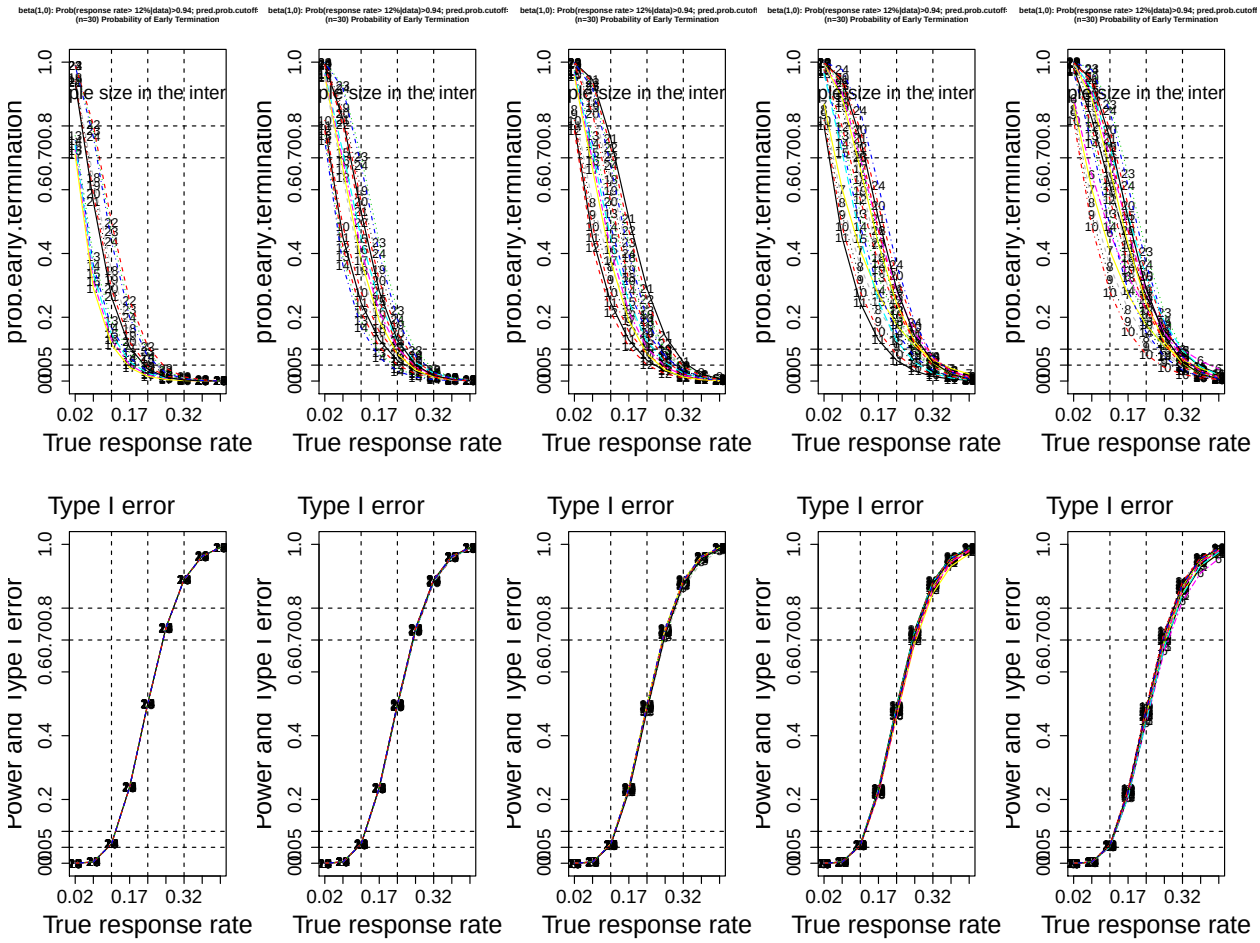

beta(1,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.7
0.8
1.0

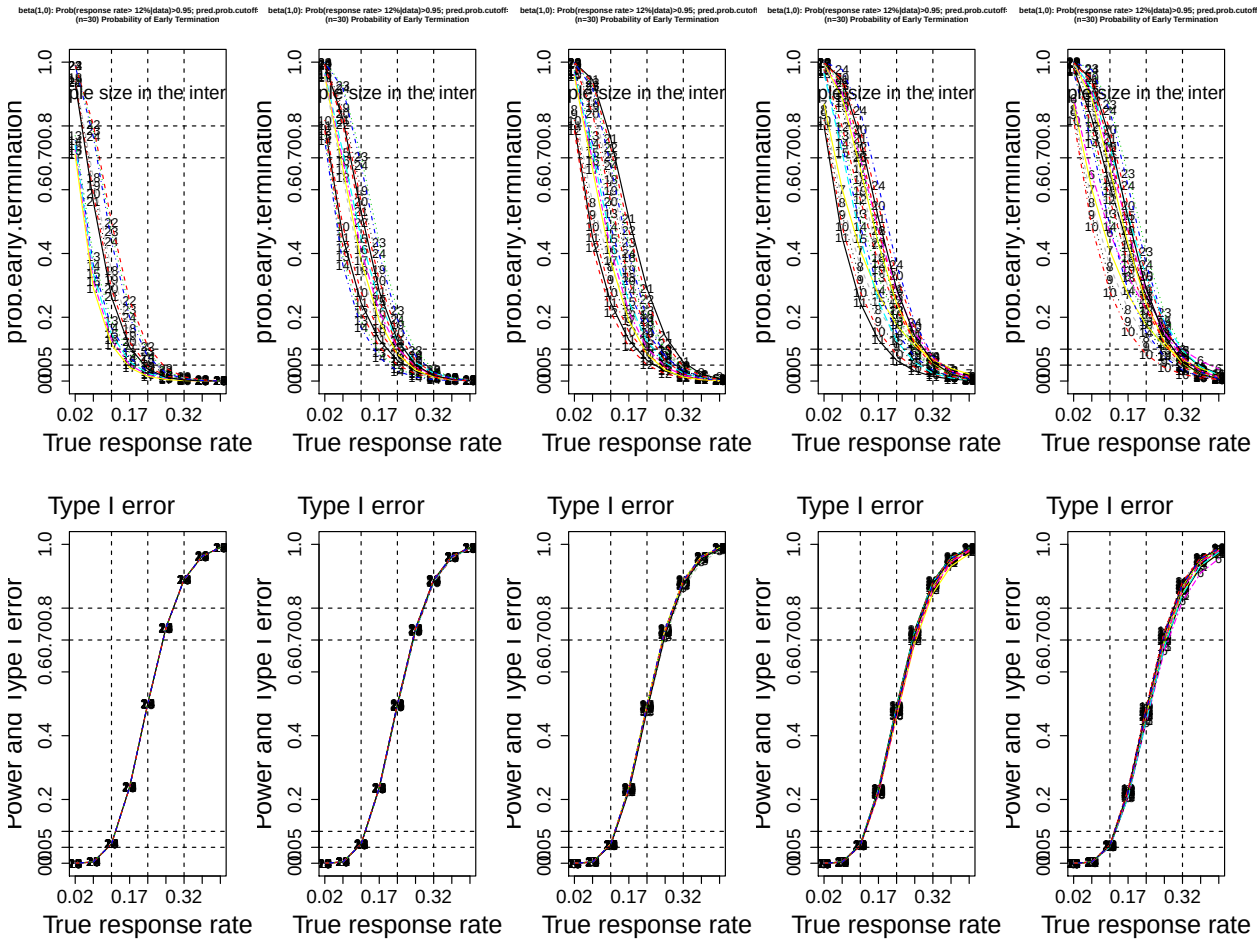

beta(1,0): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

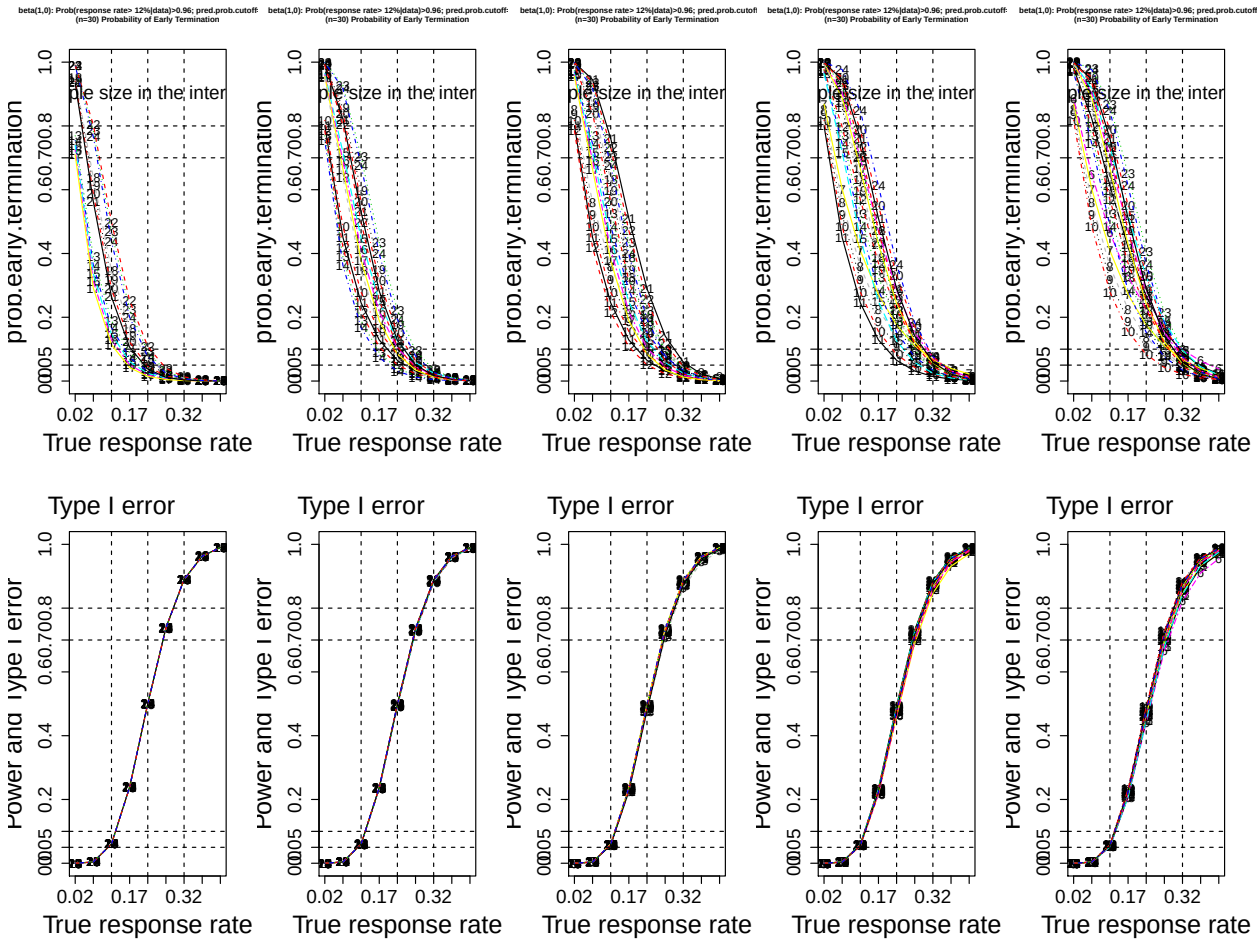

beta(1,0): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

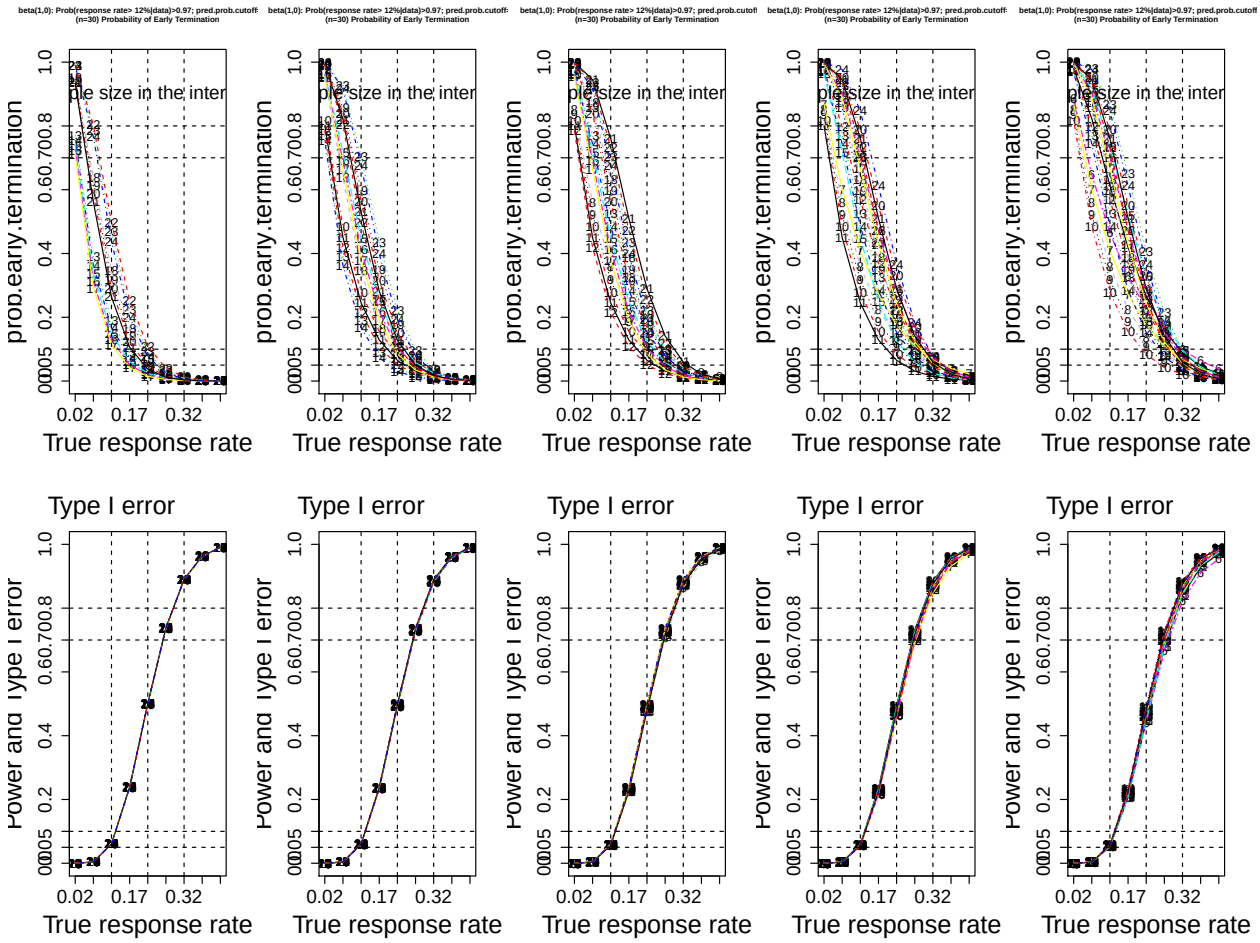

beta(1,0): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

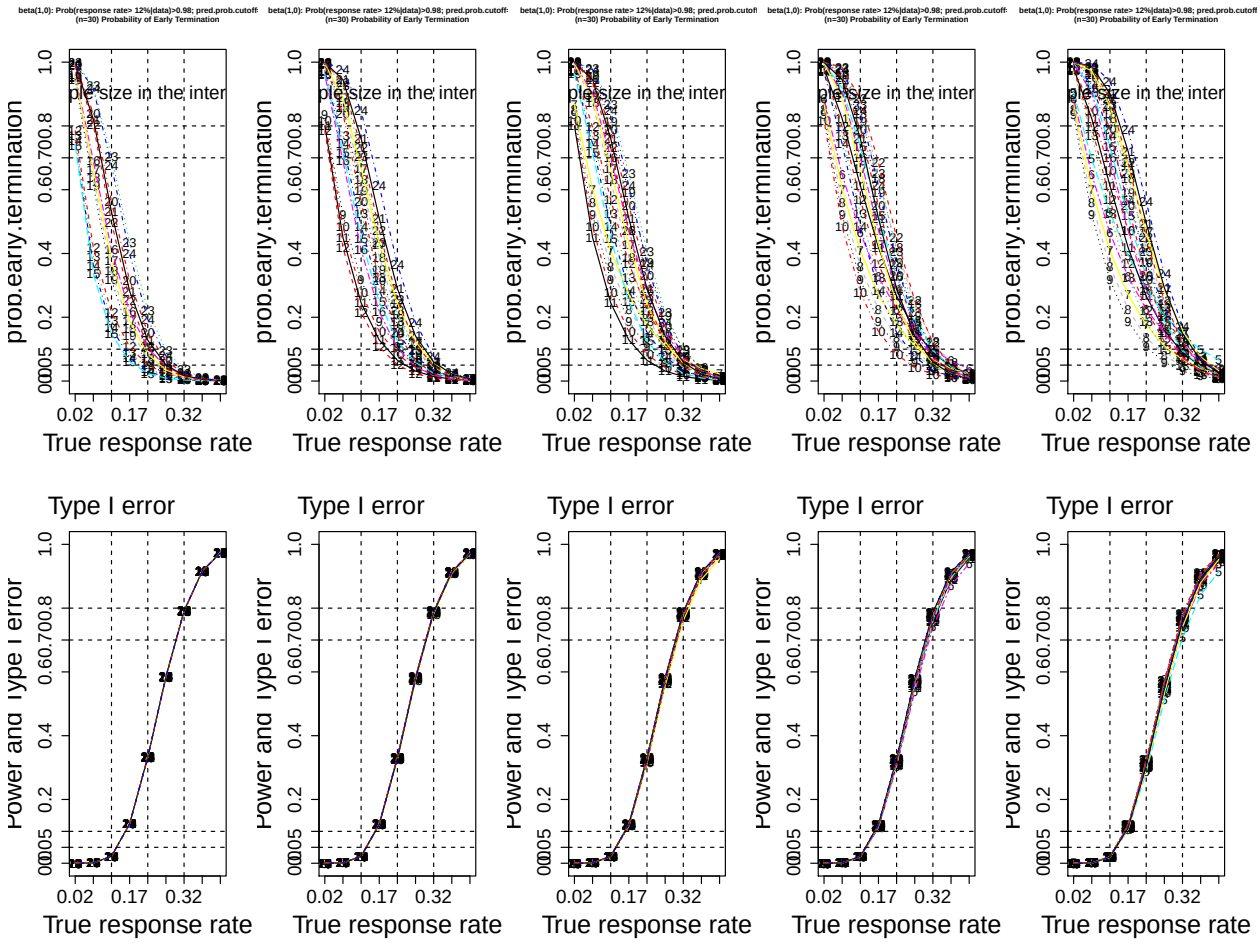

beta(1,0): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

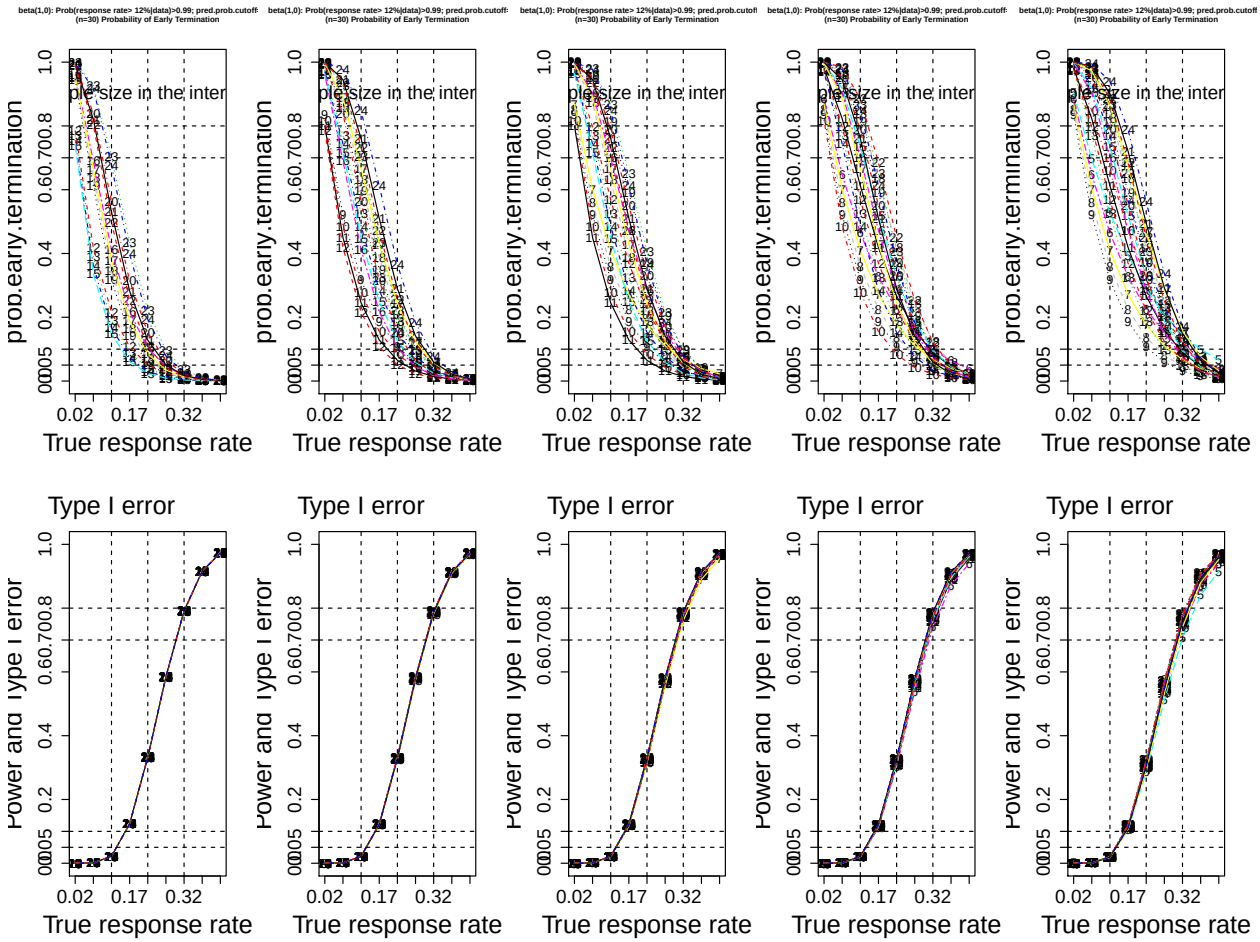

beta(1,0): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

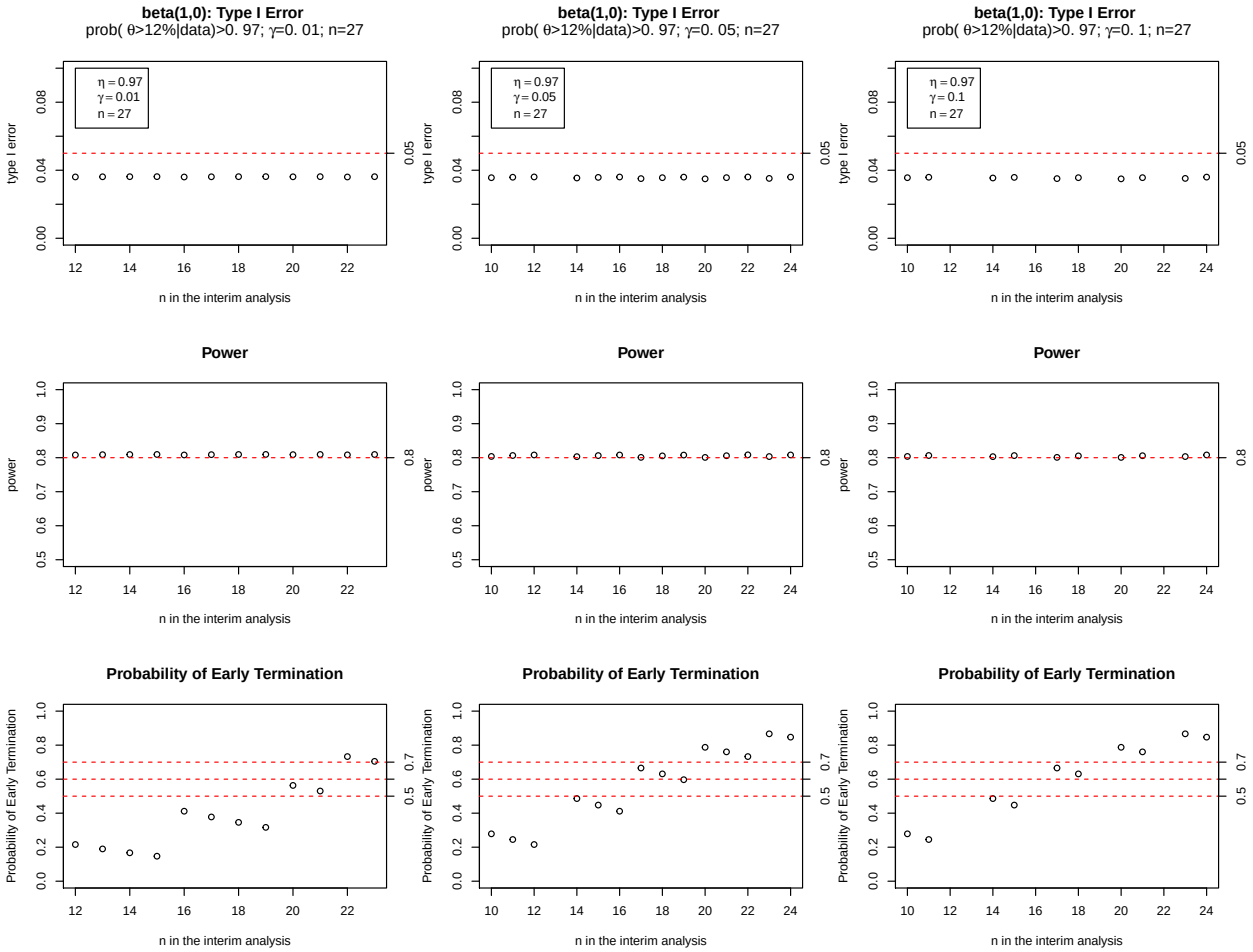

beta(1,0): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

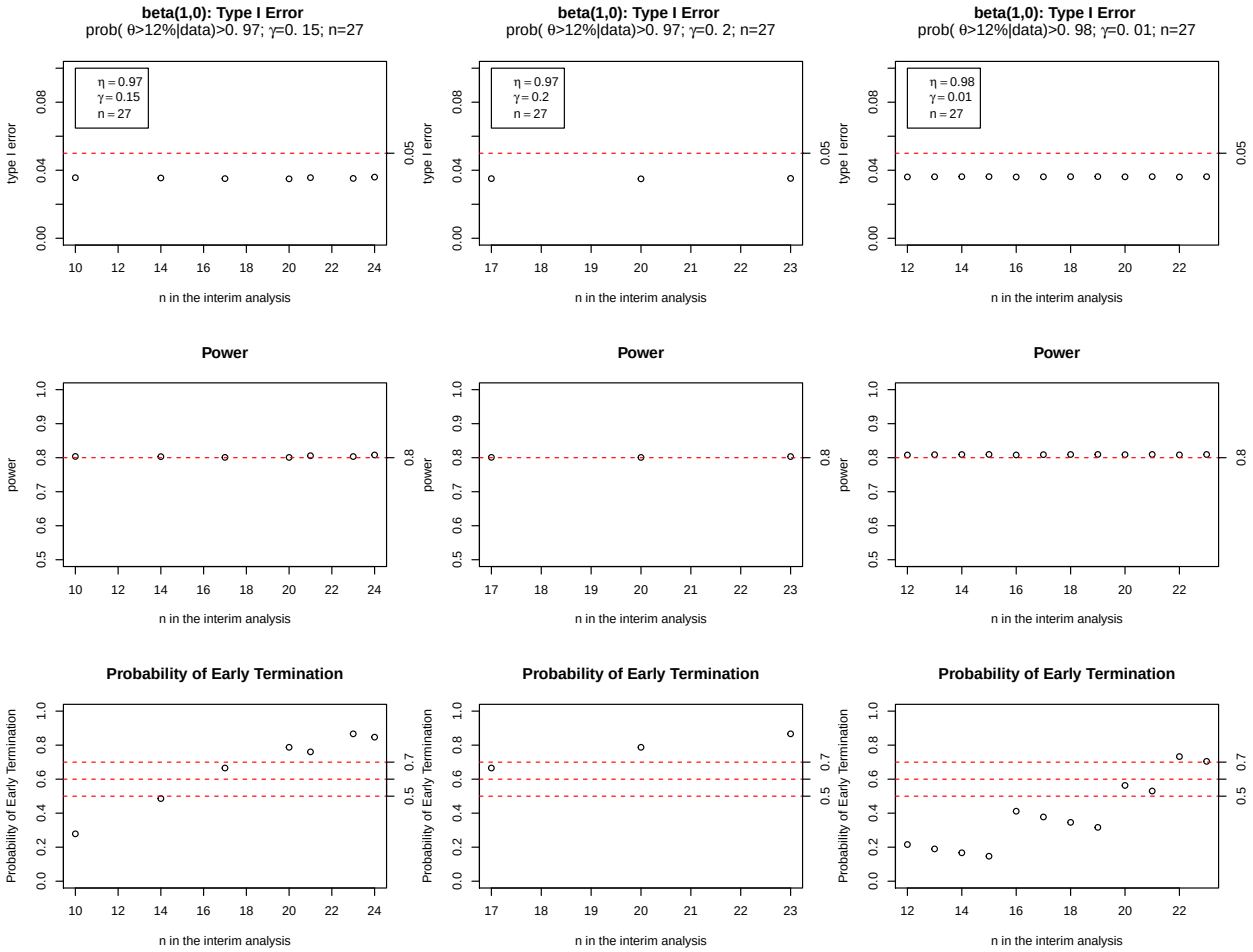

beta(1,0): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

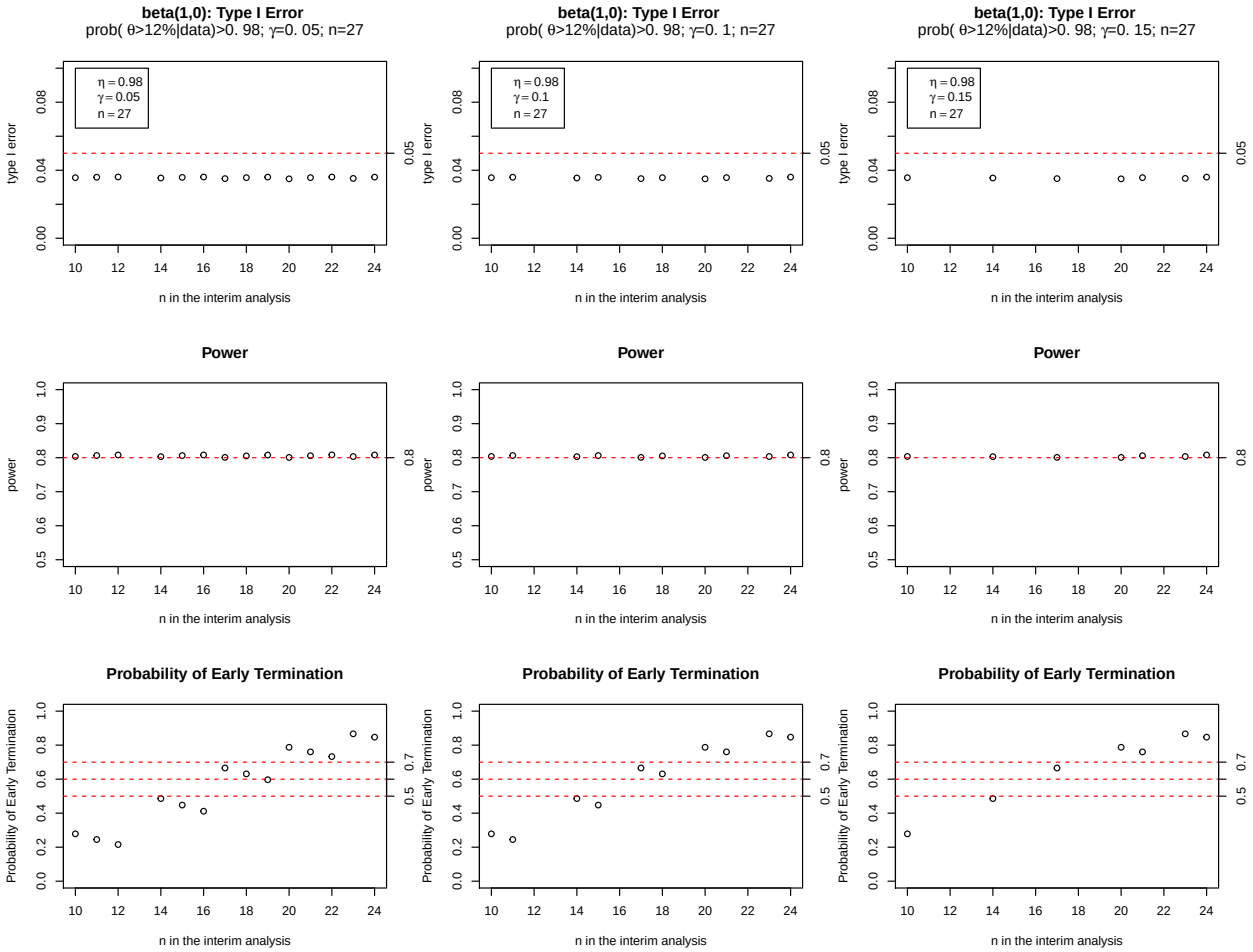

beta(1,0): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

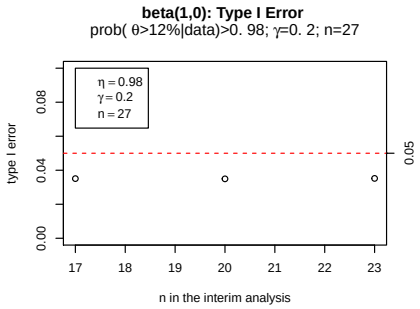

beta(1,0): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

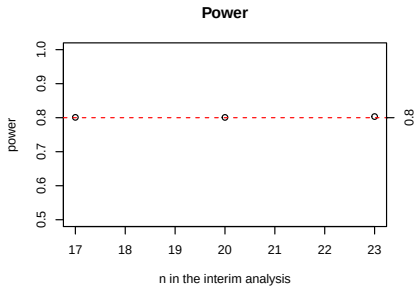

beta(1,0): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

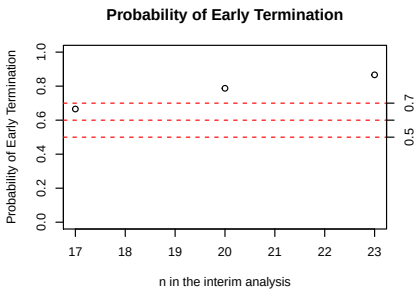

beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 01; n=27
η = 0.97
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 05; n=27
η = 0.97
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 1; n=27
η = 0.97
γ = 0.1
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

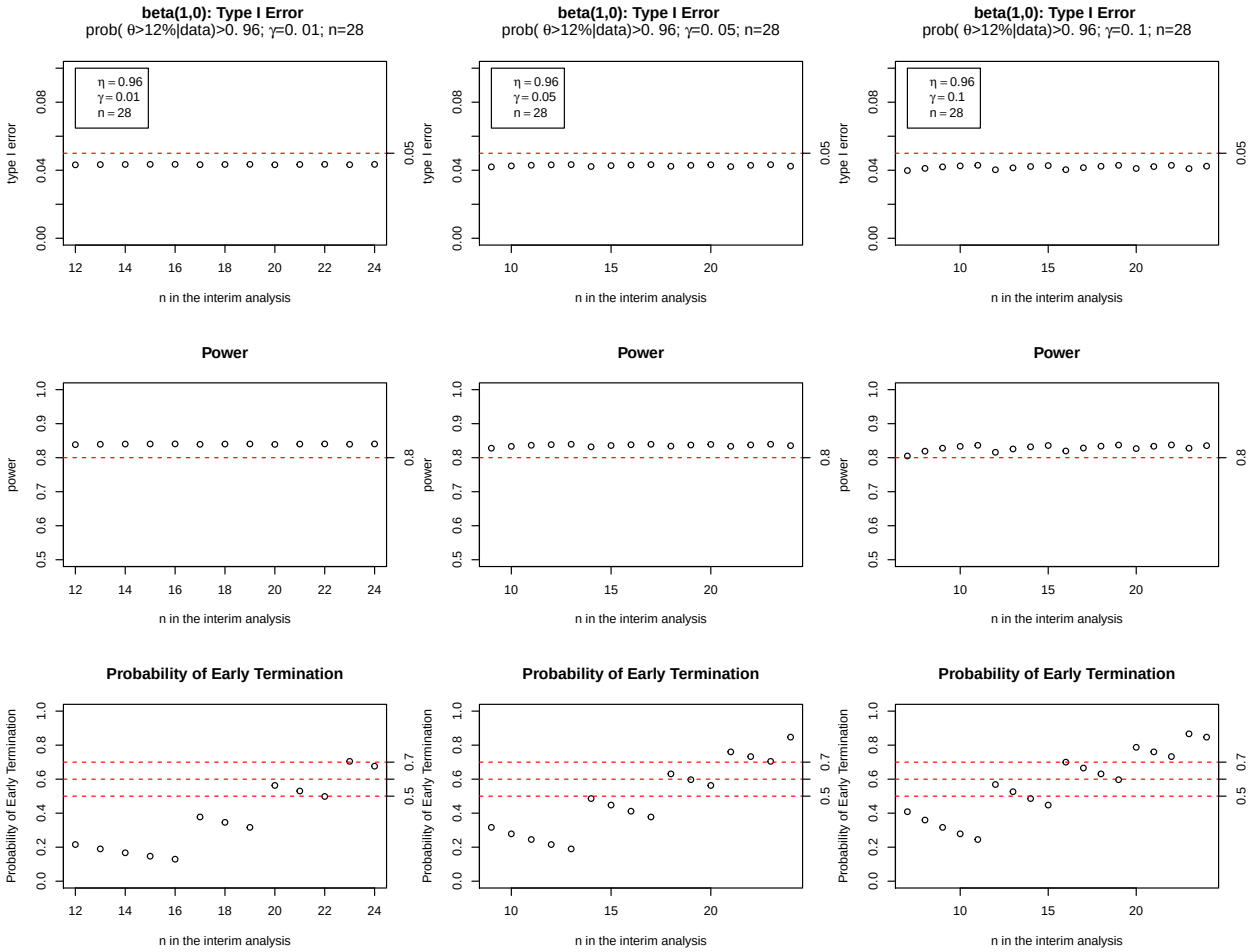

beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 15; n=27
η = 0.97
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 2; n=27
η = 0.97
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 01; n=27
η = 0.98
γ = 0.01
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

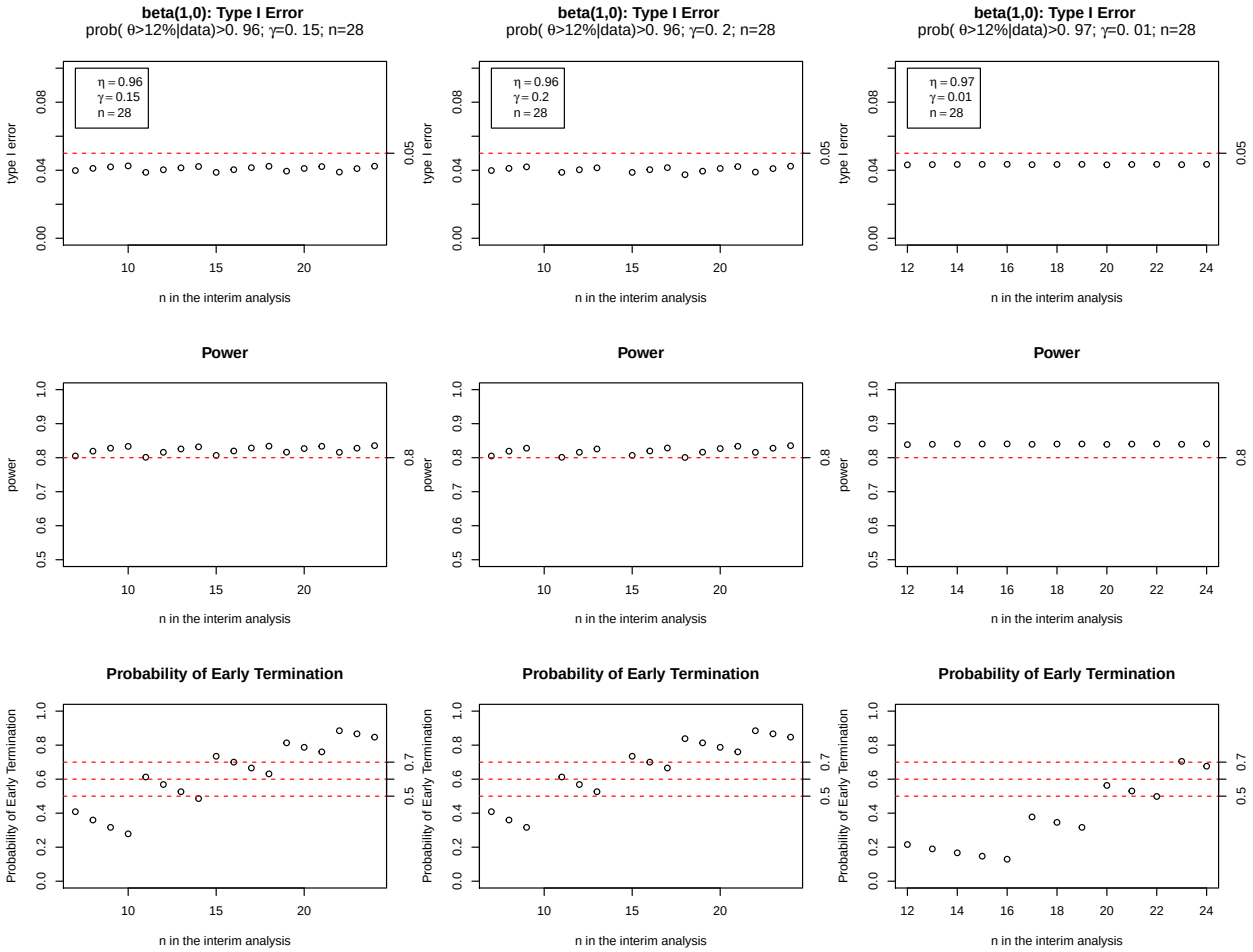

beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 05; n=27
η = 0.98
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 1; n=27
η = 0.98
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 15; n=27
η = 0.98
γ = 0.15
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

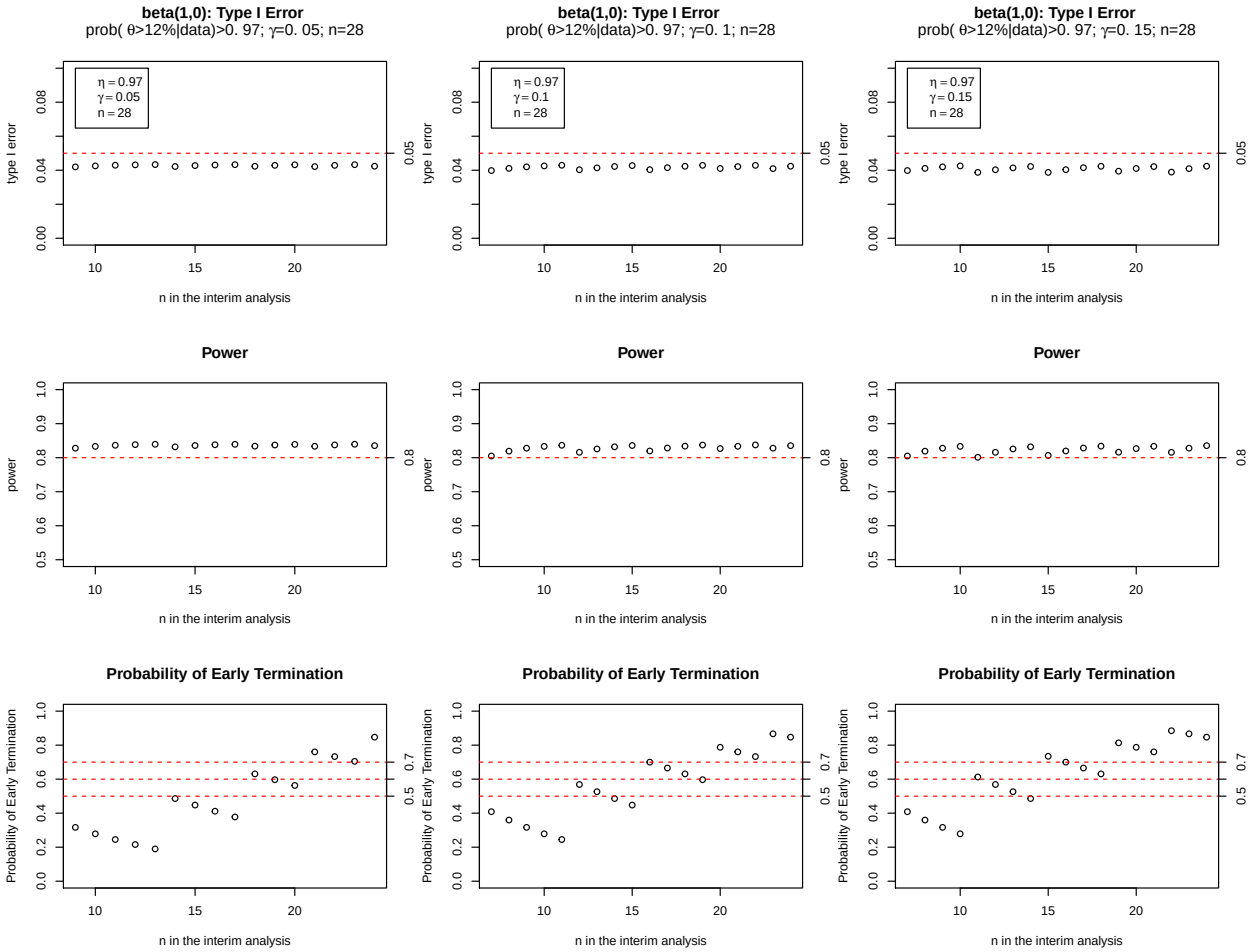

beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 2; n=27
η = 0.98
γ = 0.2
n = 27
type I error
0.00
0.04
0.08
0.05
17
18
19
20
21
22
23
n in the interim analysis

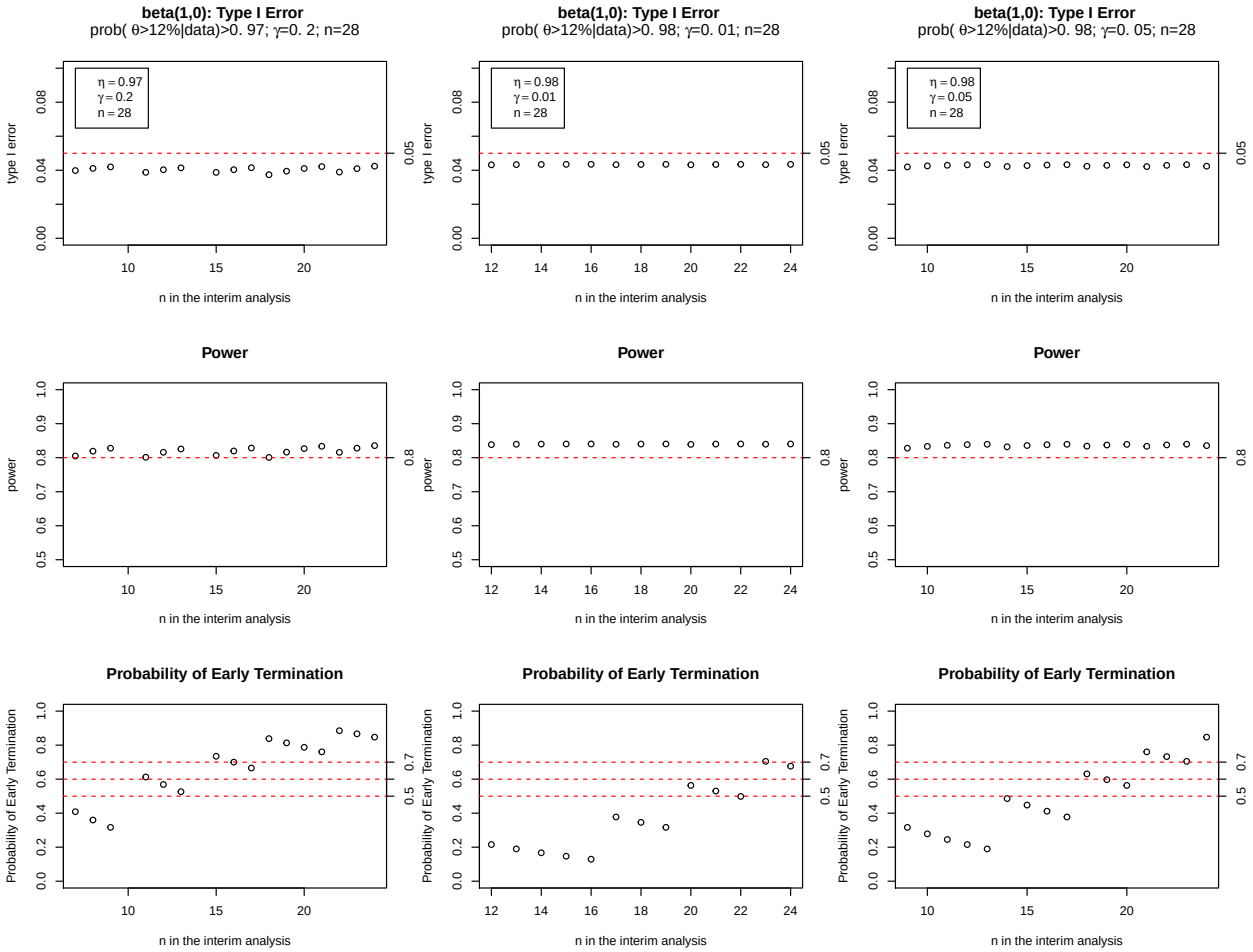

Power
power
0.5
0.6
0.7
0.8
0.9
1.0
0.8
17
18
19
20
21
22
23
n in the interim analysis

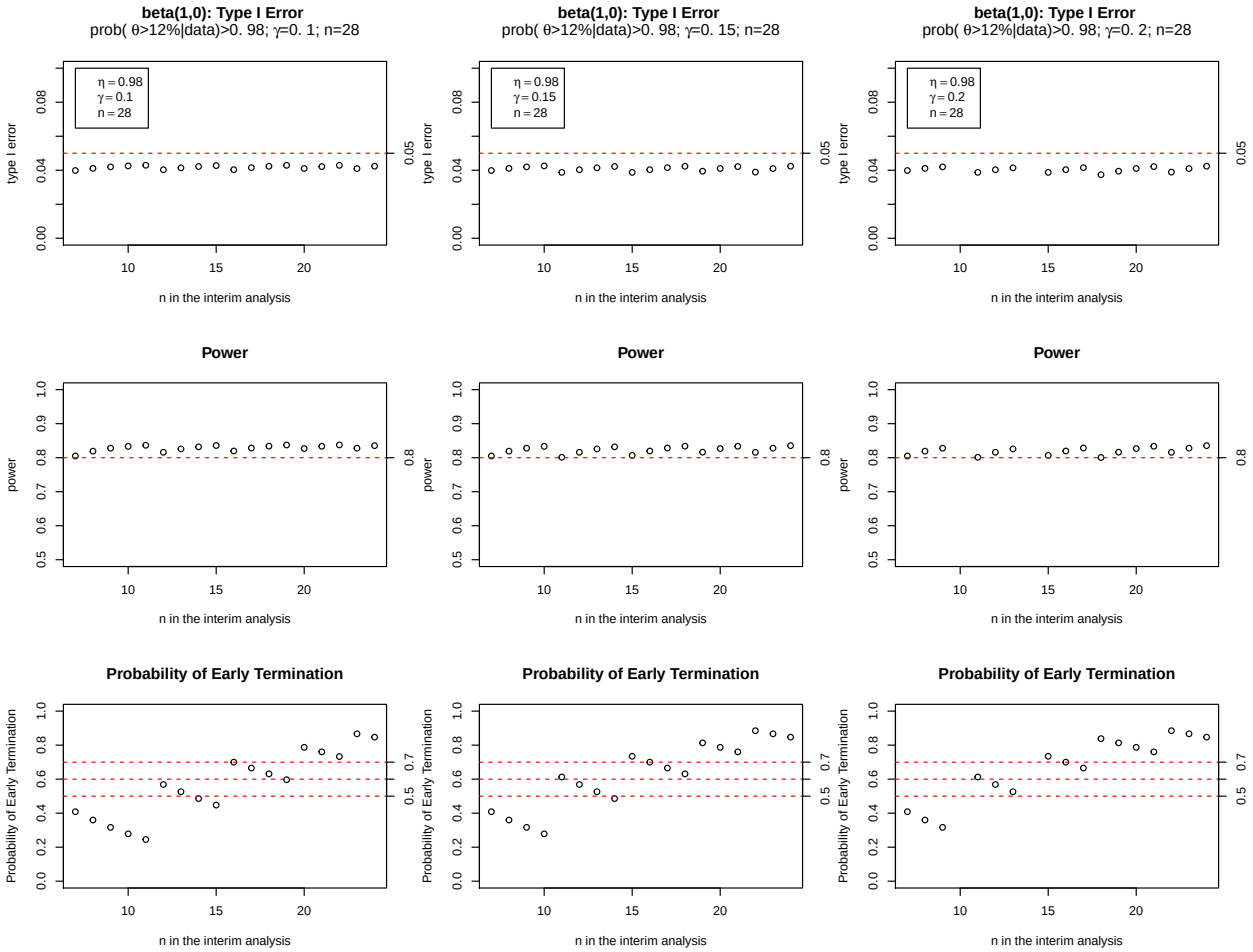

Probability of Early Termination
Probability of Early Termination
0.0
0.2
0.4
0.6
0.8
1.0
0.7
0.5
17
18
19
20
21
22
23
n in the interim analysis

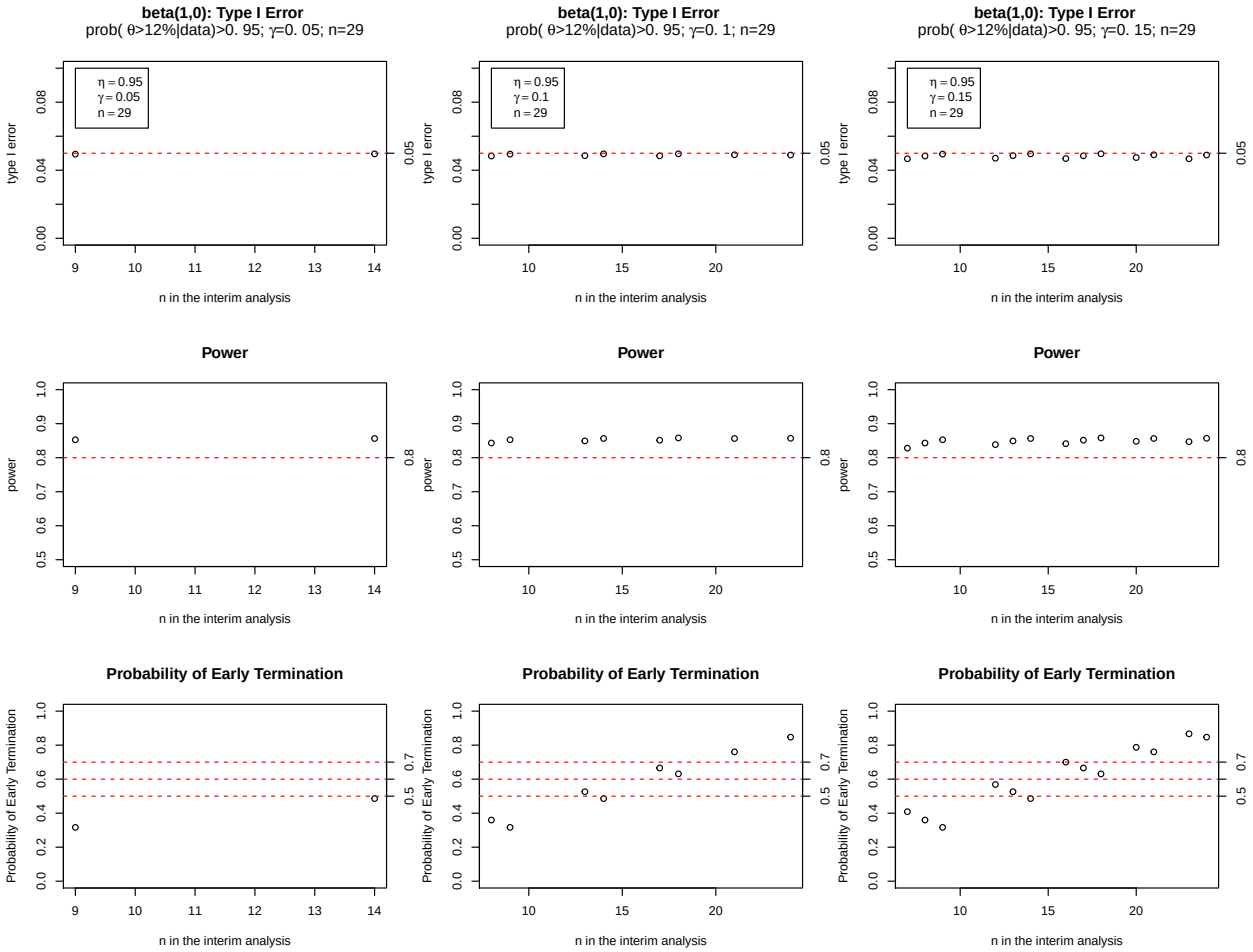

beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 01; n=28
η = 0.96
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 05; n=28
η = 0.96
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 1; n=28
η = 0.96
γ = 0.1
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

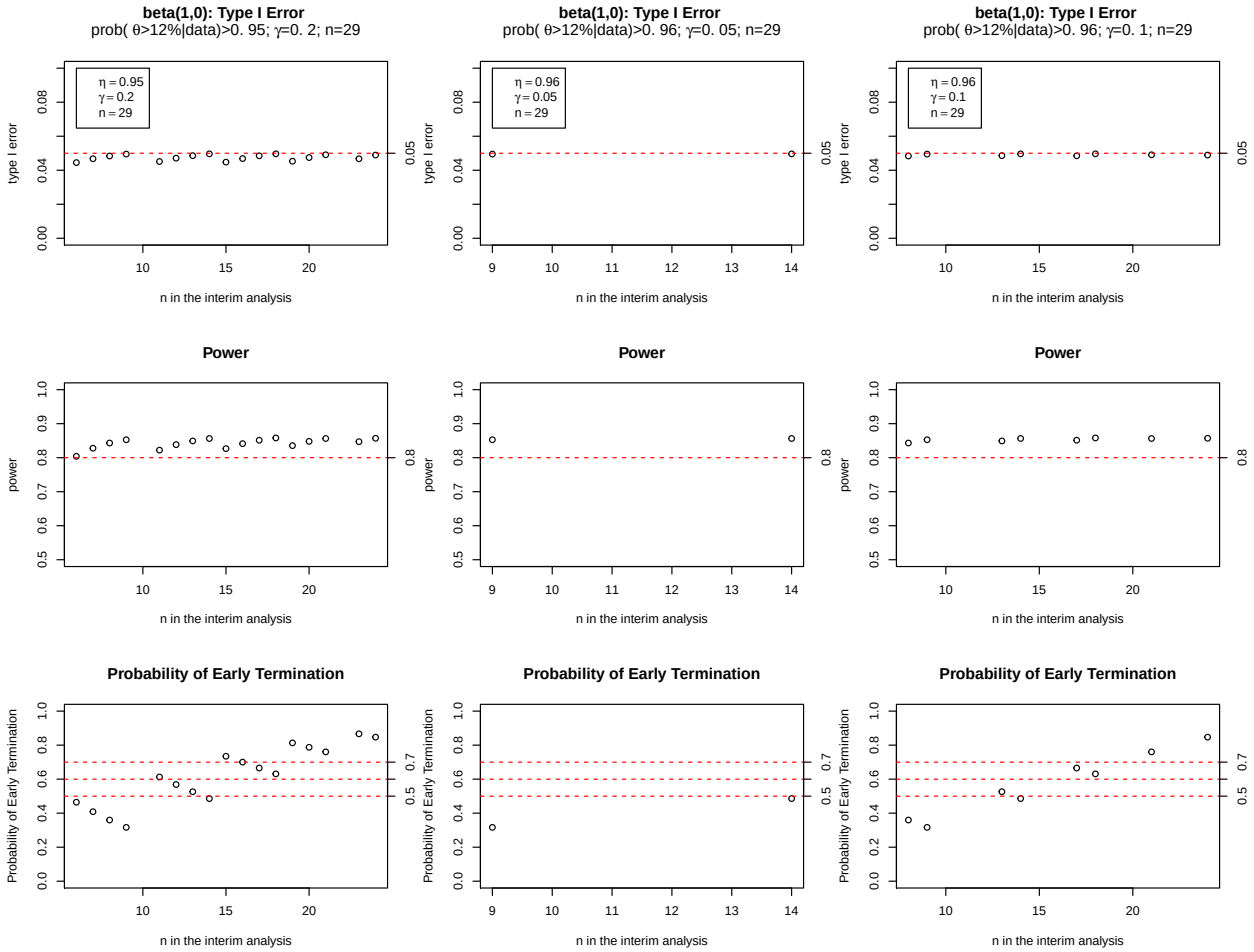

beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 15; n=28
η = 0.96
γ = 0.15
n = 28
beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=28
η = 0.96
γ = 0.2
n = 28
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 01; n=28
η = 0.97
γ = 0.01
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

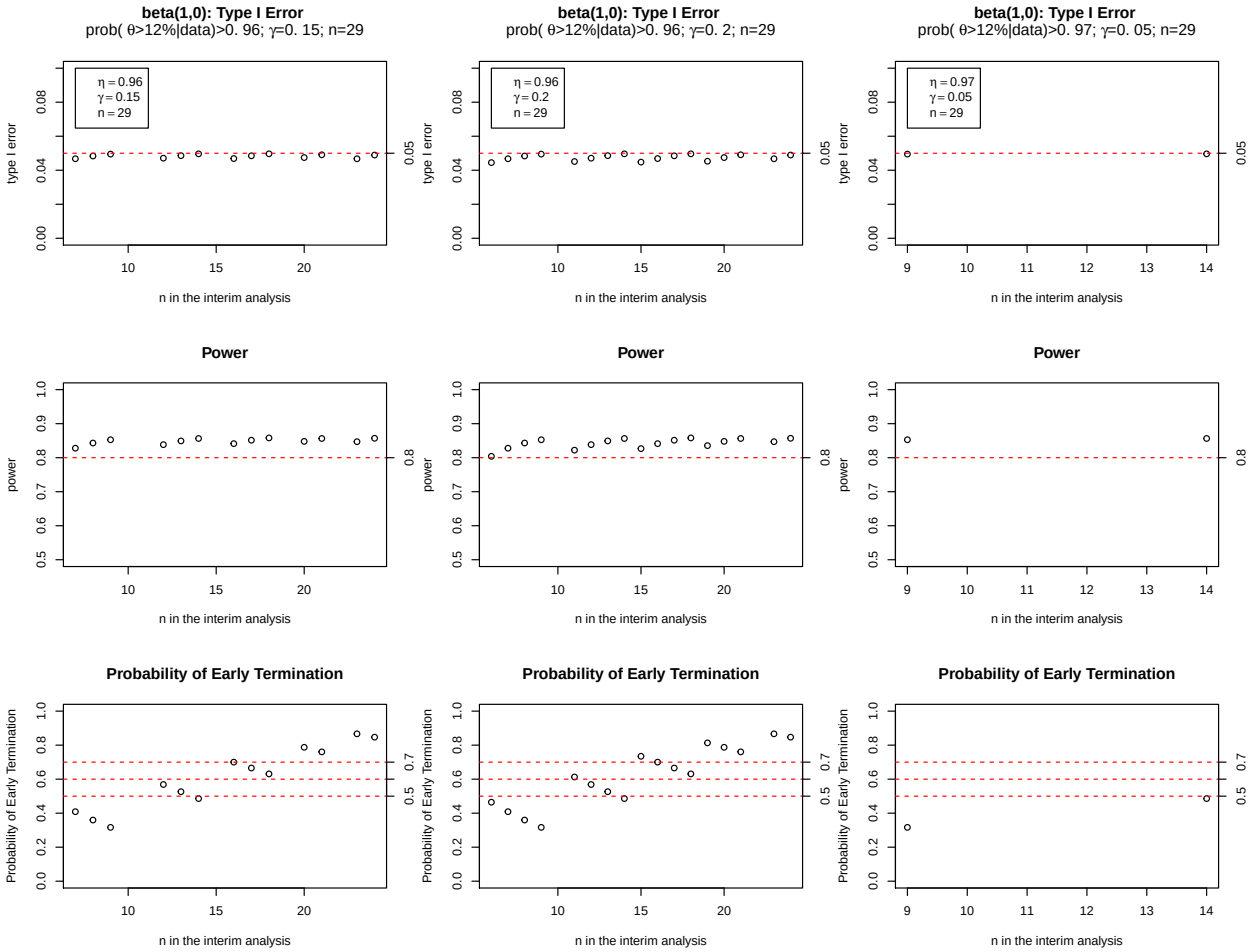

beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 05; n=28
η = 0.97
γ = 0.05
n = 28
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 1; n=28
η = 0.97
γ = 0.1
n = 28
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 15; n=28
η = 0.97
γ = 0.15
n = 28
type I error
Power
power
Probability of Early Termination
n in the interim analysis

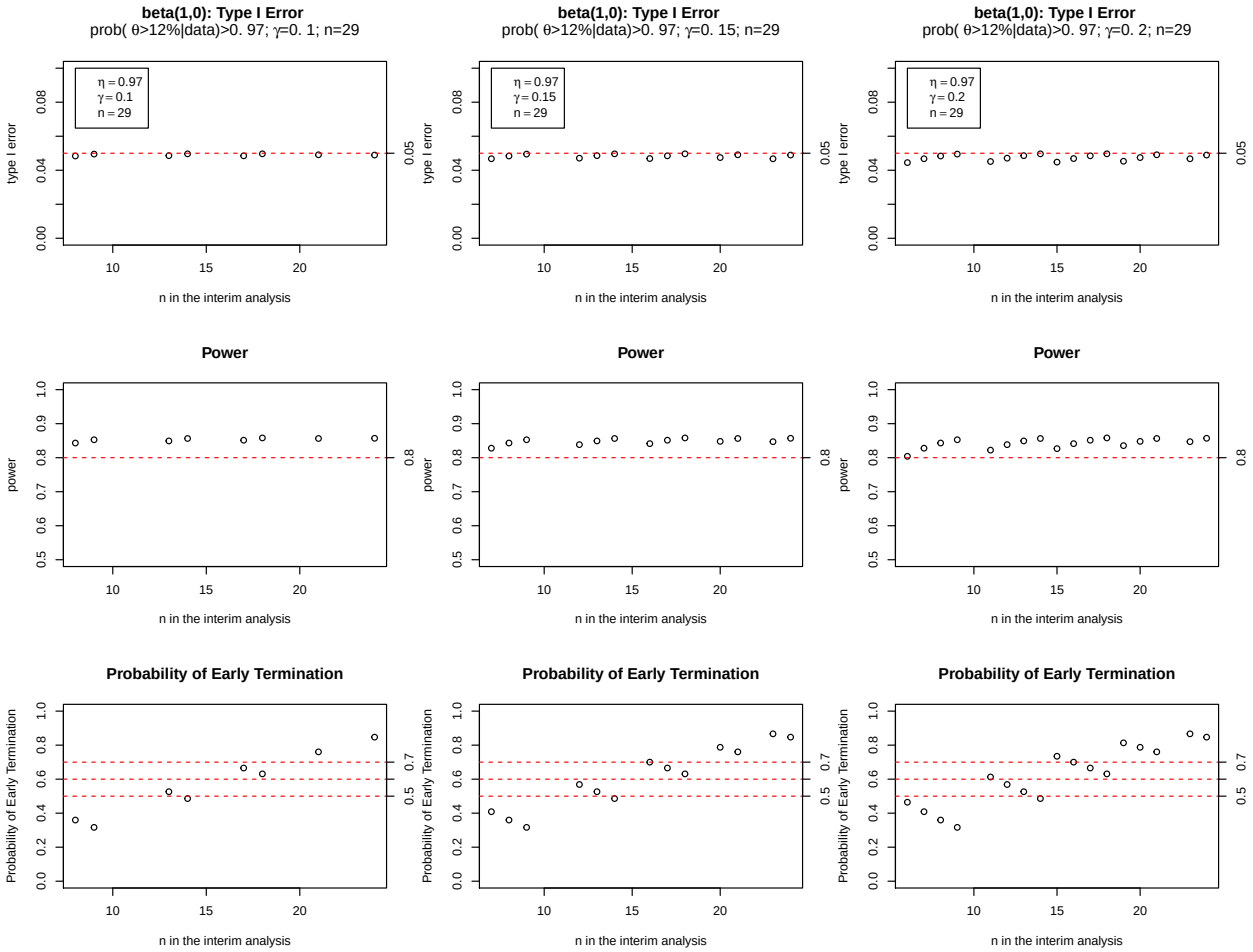

beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 2; n=28
η = 0.97
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 01; n=28
η = 0.98
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 05; n=28
η = 0.98
γ = 0.05
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

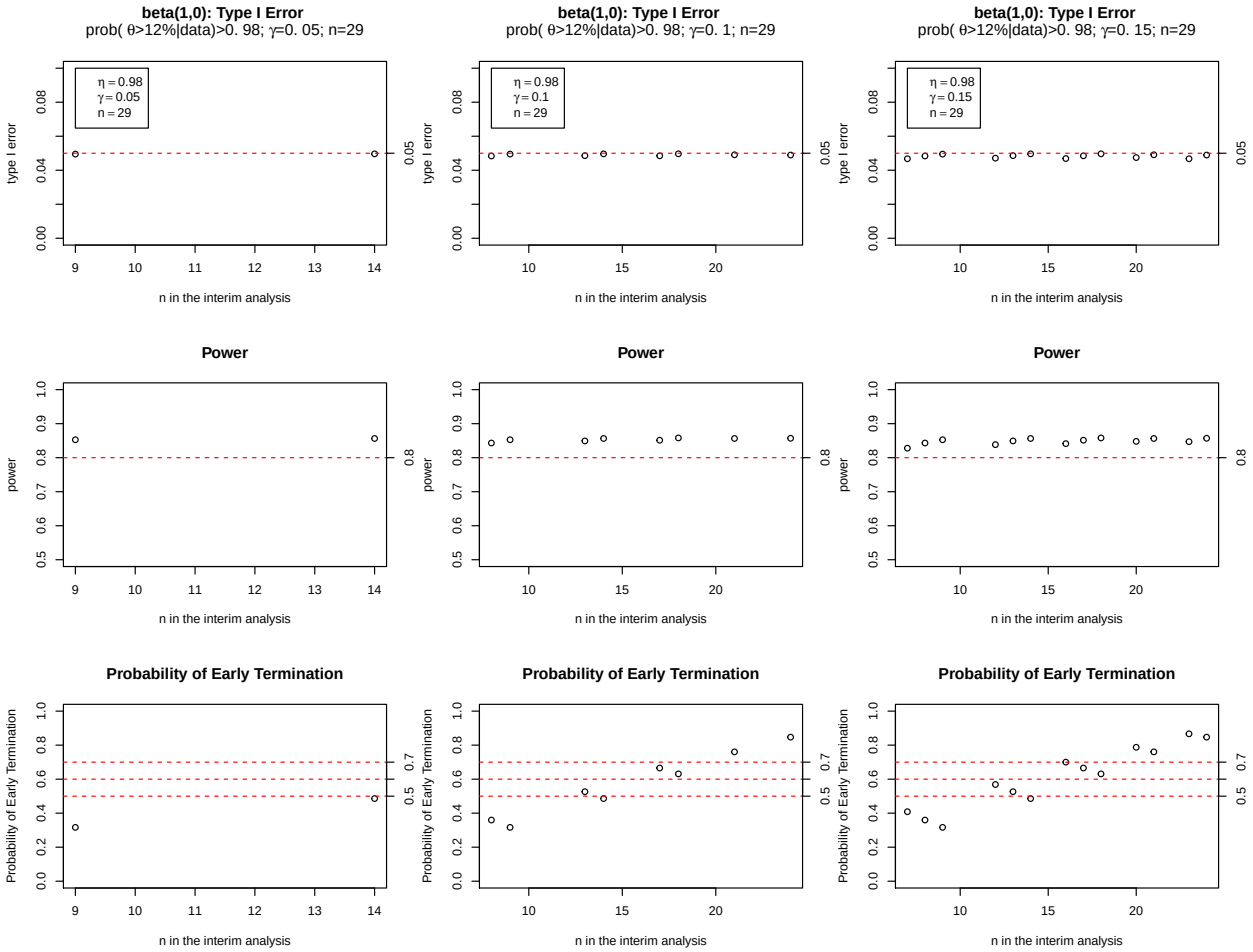

beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 1; n=28
η = 0.98
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 15; n=28
η = 0.98
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 2; n=28
η = 0.98
γ = 0.2
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

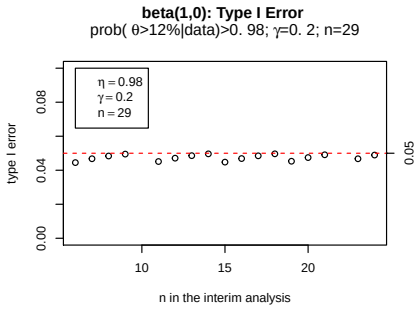

beta(1,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=29
η = 0.95
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=29
η = 0.95
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=29
η = 0.95
γ = 0.15
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

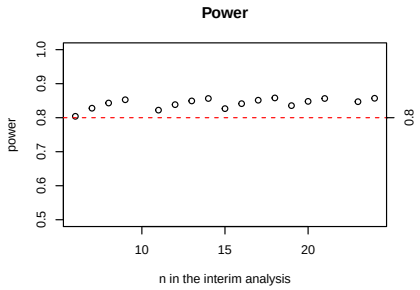

beta(1,0): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=29
η = 0.95
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 05; n=29
η = 0.96
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 1; n=29
η = 0.96
γ = 0.1
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

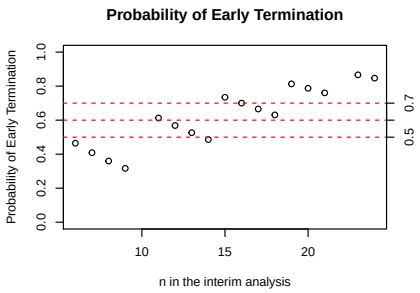

beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 15; n=29
η = 0.96
γ = 0.15
n = 29
beta(1,0): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=29
η = 0.96
γ = 0.2
n = 29
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 05; n=29
η = 0.97
γ = 0.05
n = 29
type I error
0.00
0.04
0.08
0.05
Power
power
0.5
0.6
0.7
0.8
0.9
1.0
0.8
Probability of Early Termination
Probability of Early Termination
0.0
0.2
0.4
0.6
0.8
1.0
0.5
0.7
n in the interim analysis
9
10
11
12
13
14
15
20


beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 1; n=29
η = 0.97
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 15; n=29
η = 0.97
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 2; n=29
η = 0.97
γ = 0.2
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

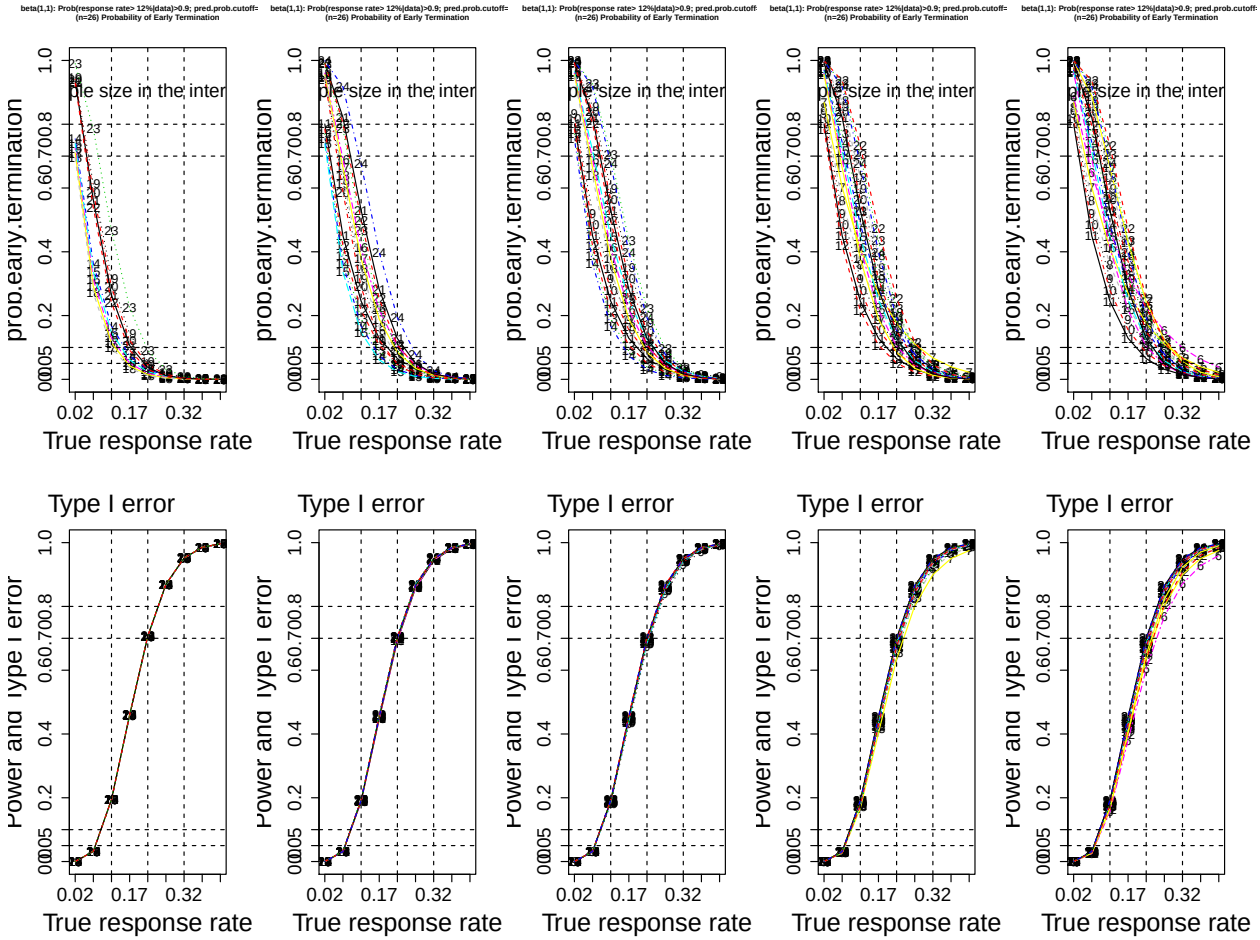

beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 05; n=29
η = 0.98
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 1; n=29
η = 0.98
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 15; n=29
η = 0.98
γ = 0.15
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

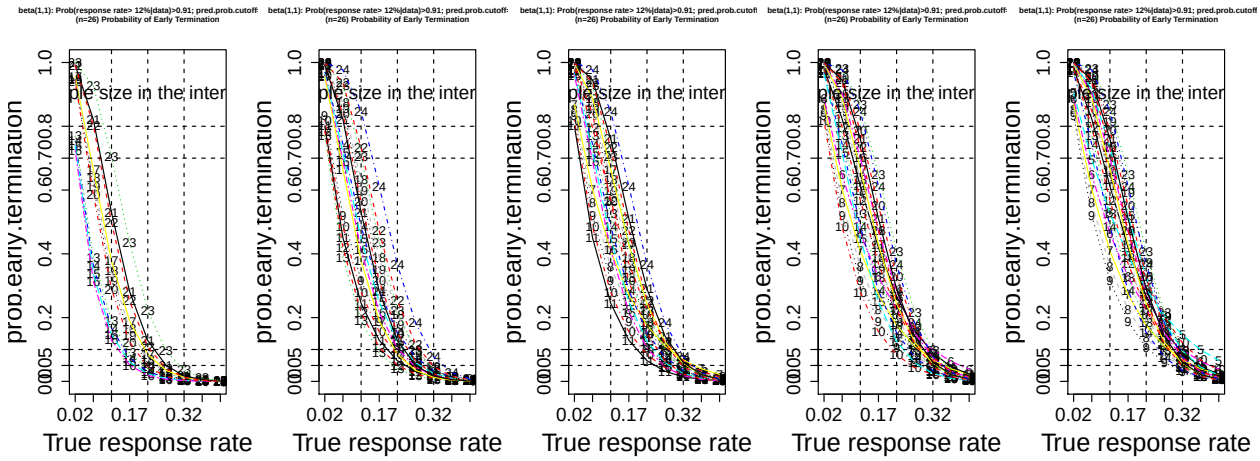

beta(1,0): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 2; n=29
η = 0.98
γ = 0.2
n = 29
type I error
0.00
0.04
0.08
0.05
10
15
20
n in the interim analysis

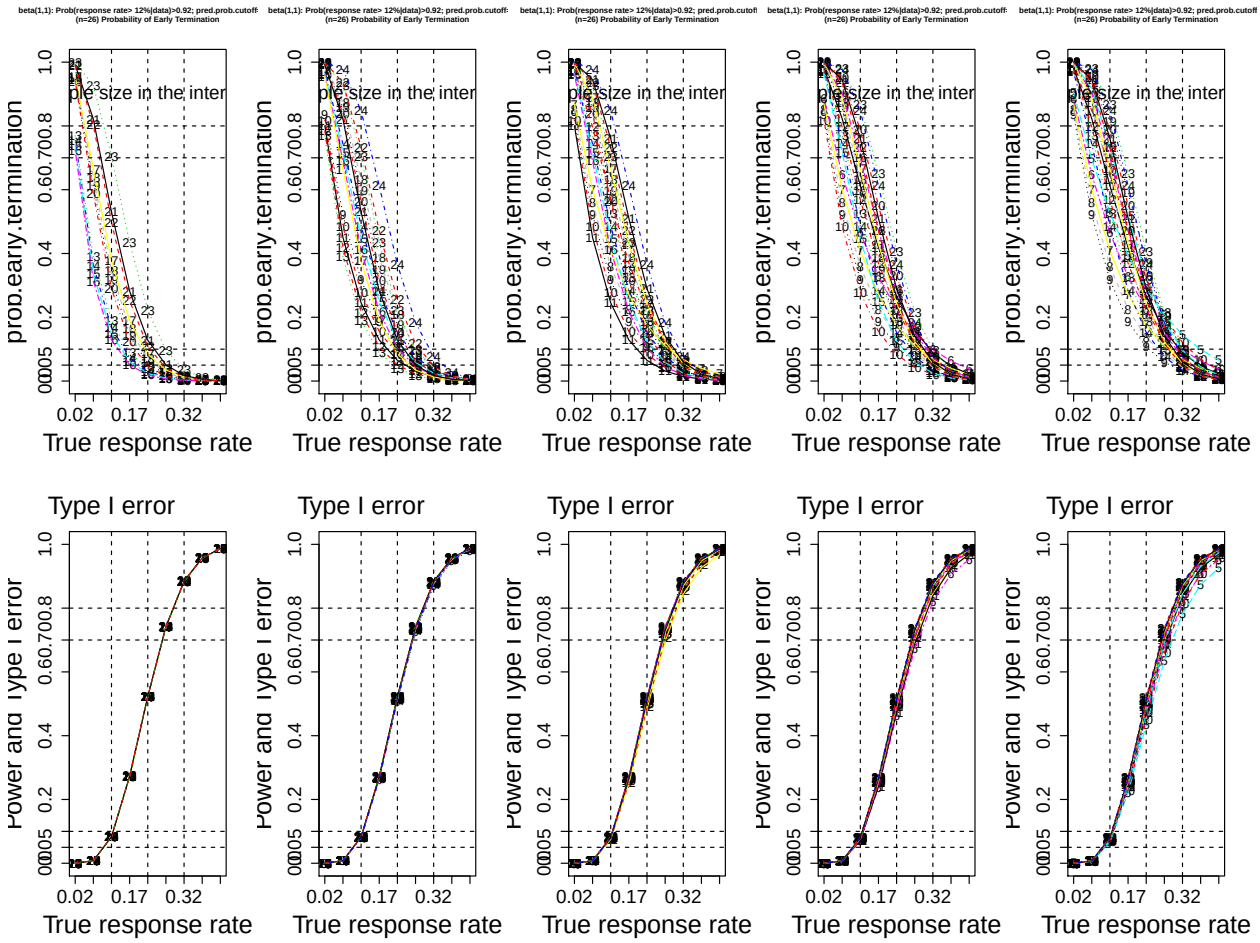

Power
power
0.5
0.6
0.7
0.8
0.9
1.0
0.8
10
15
20
n in the interim analysis

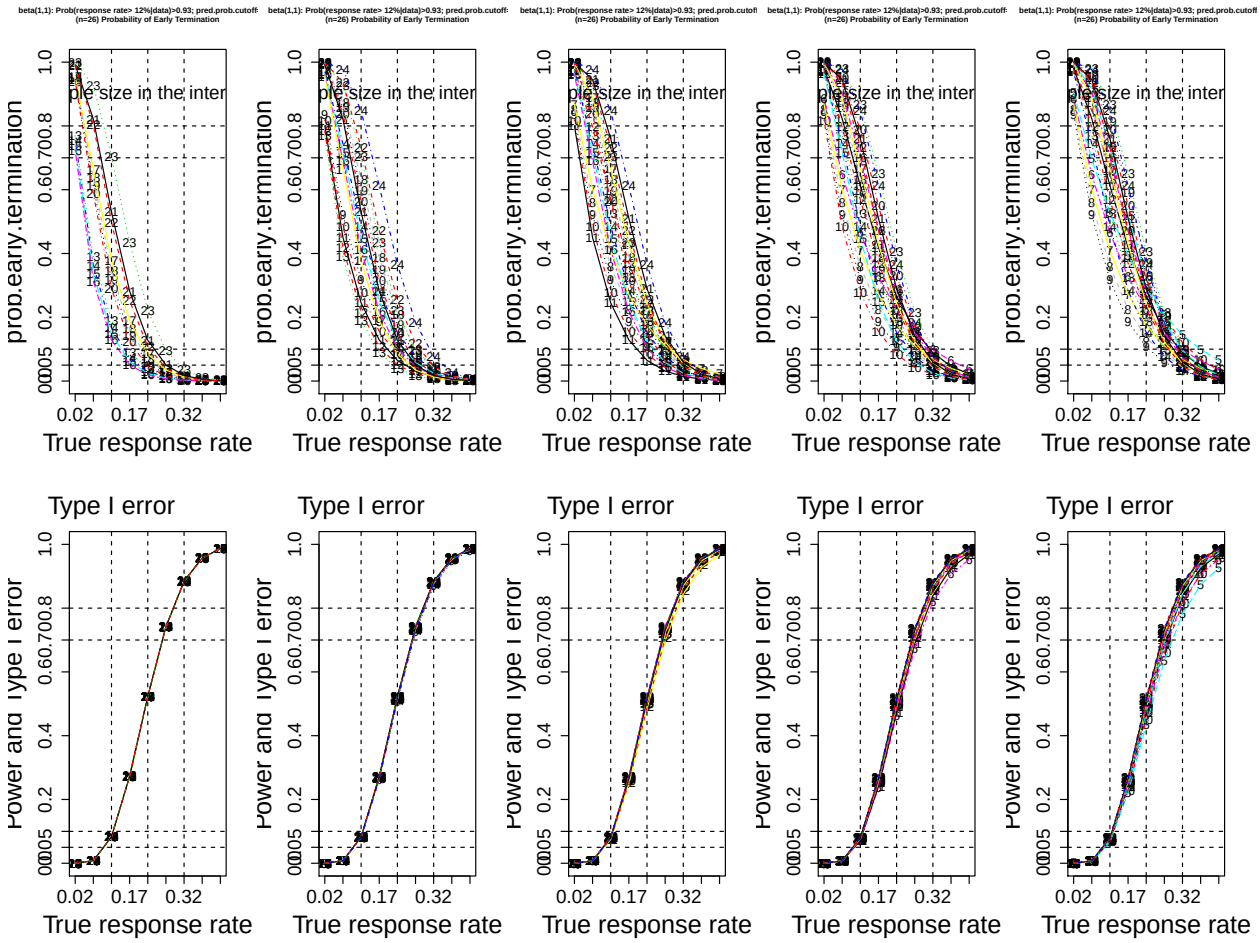

Probability of Early Termination
Probability of Early Termination
0.0
0.2
0.4
0.6
0.8
1.0
0.7
0.5
10
15
20
n in the interim analysis

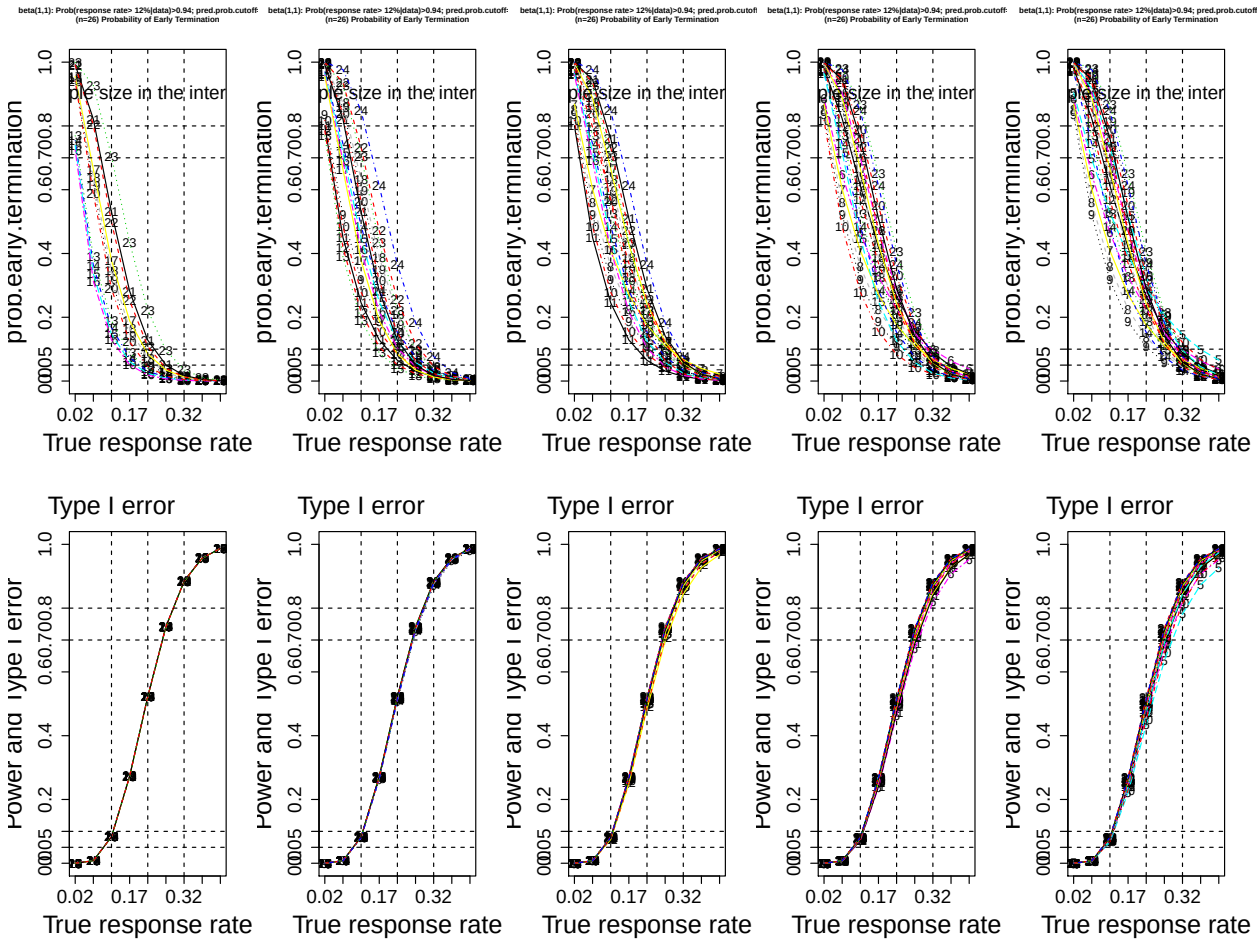
Prior Distribution: beta(1,1)

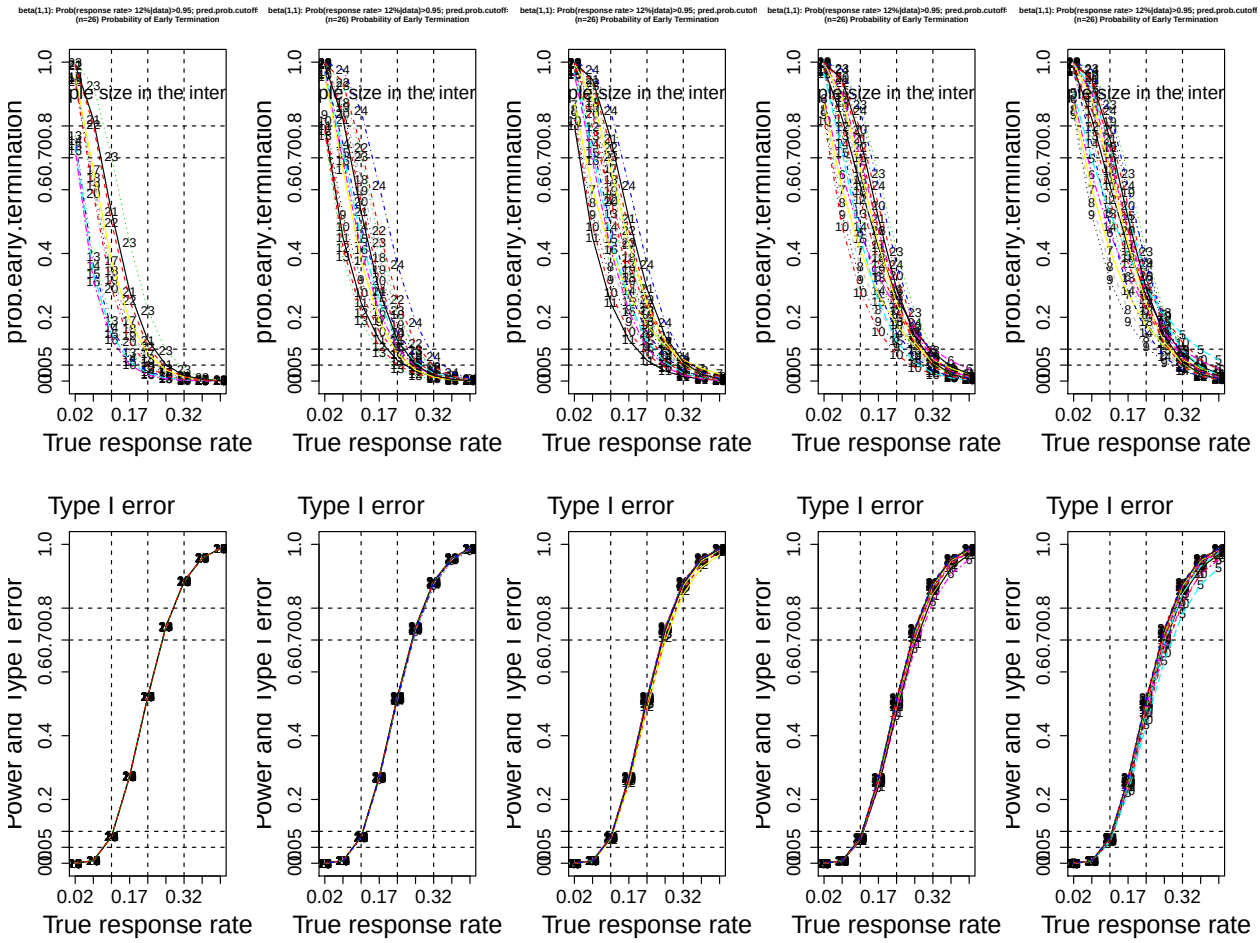


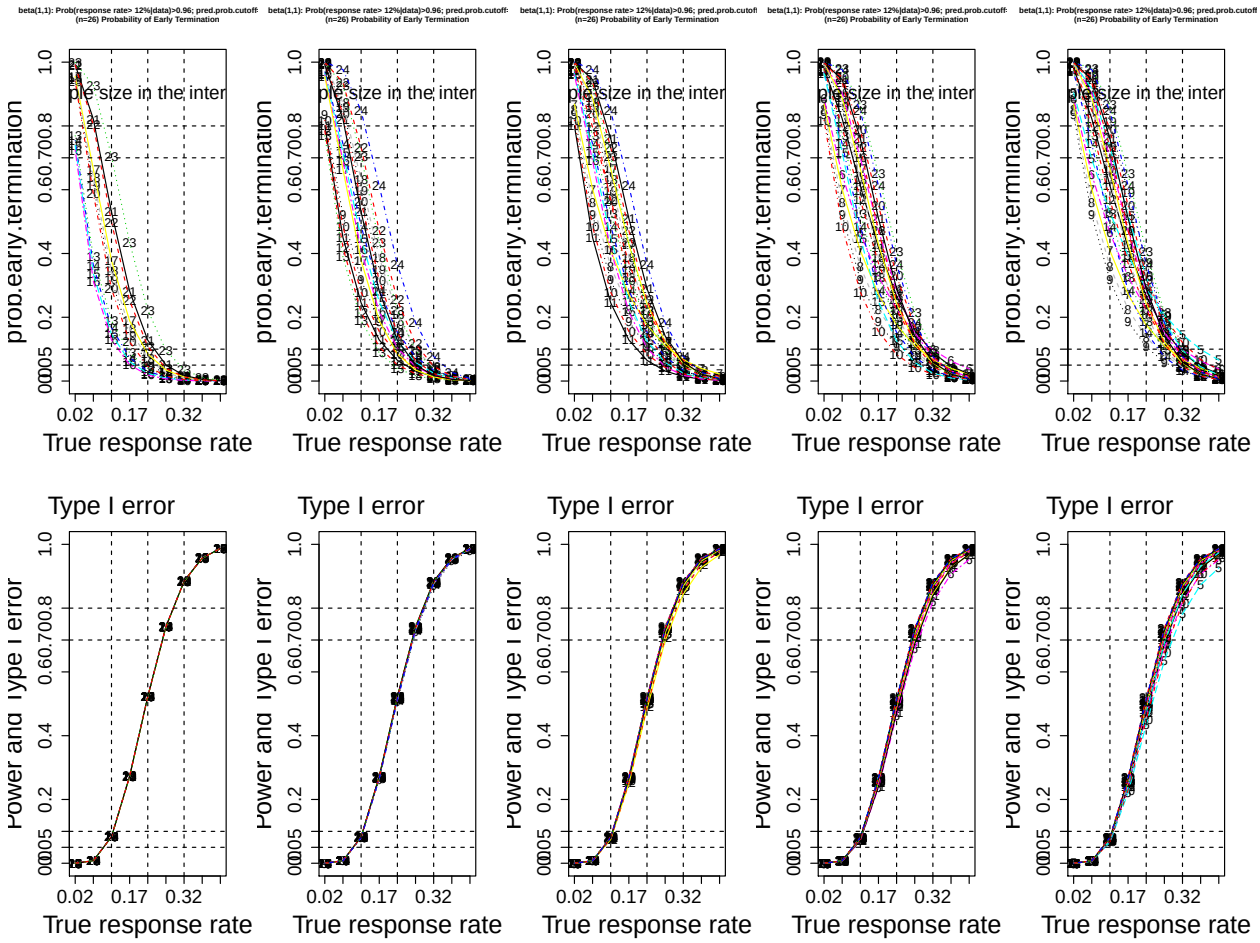


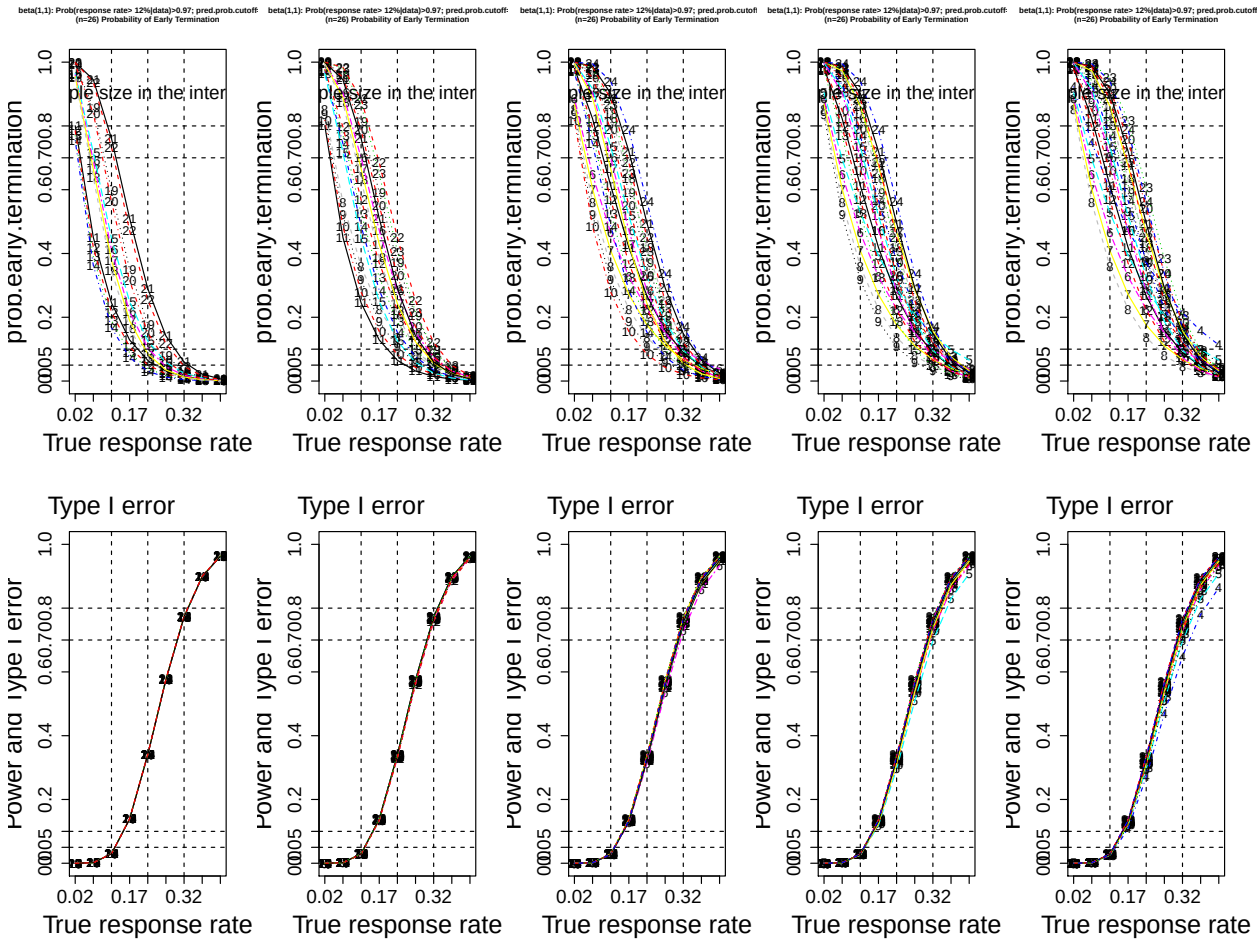

beta(1,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

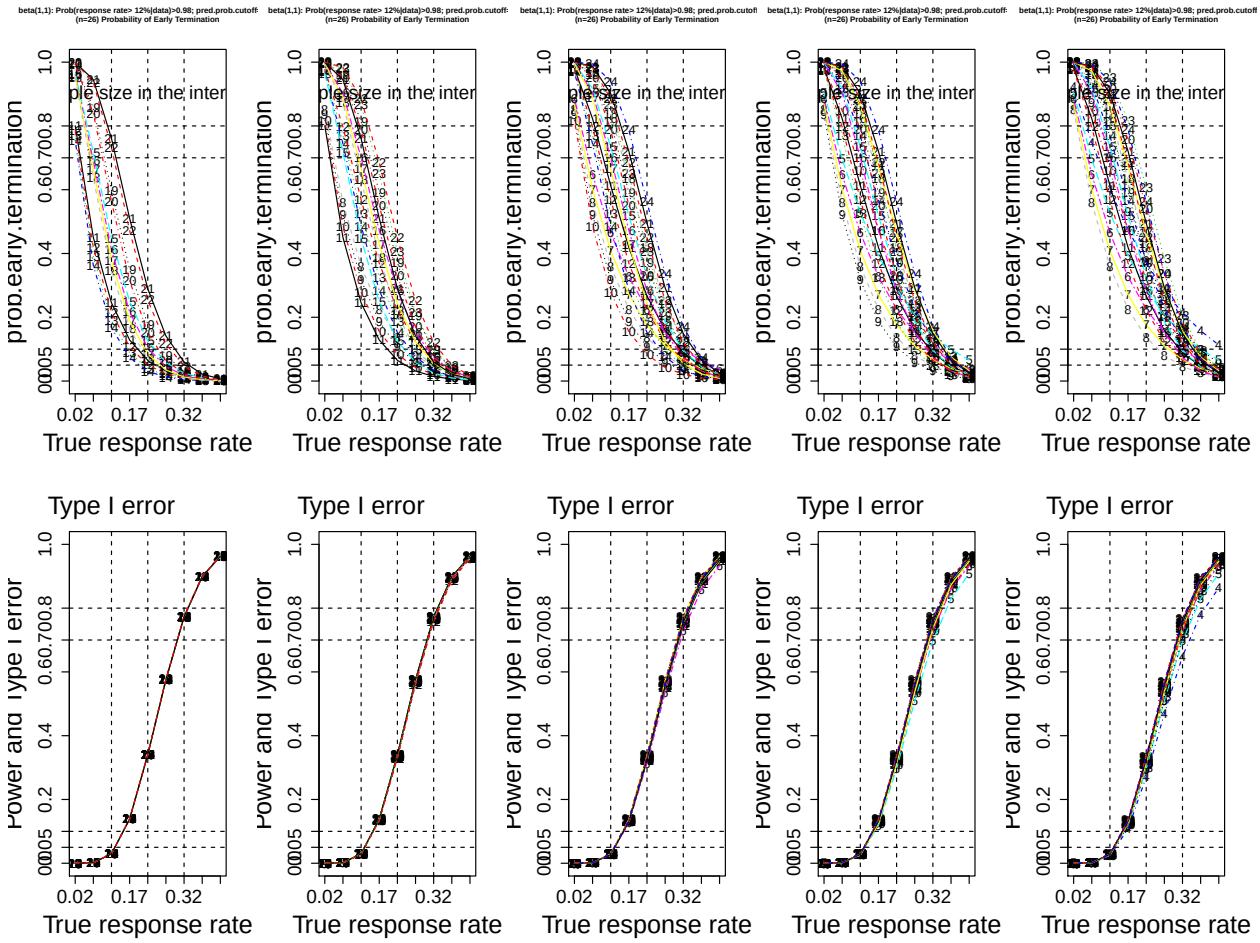

beta(1,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

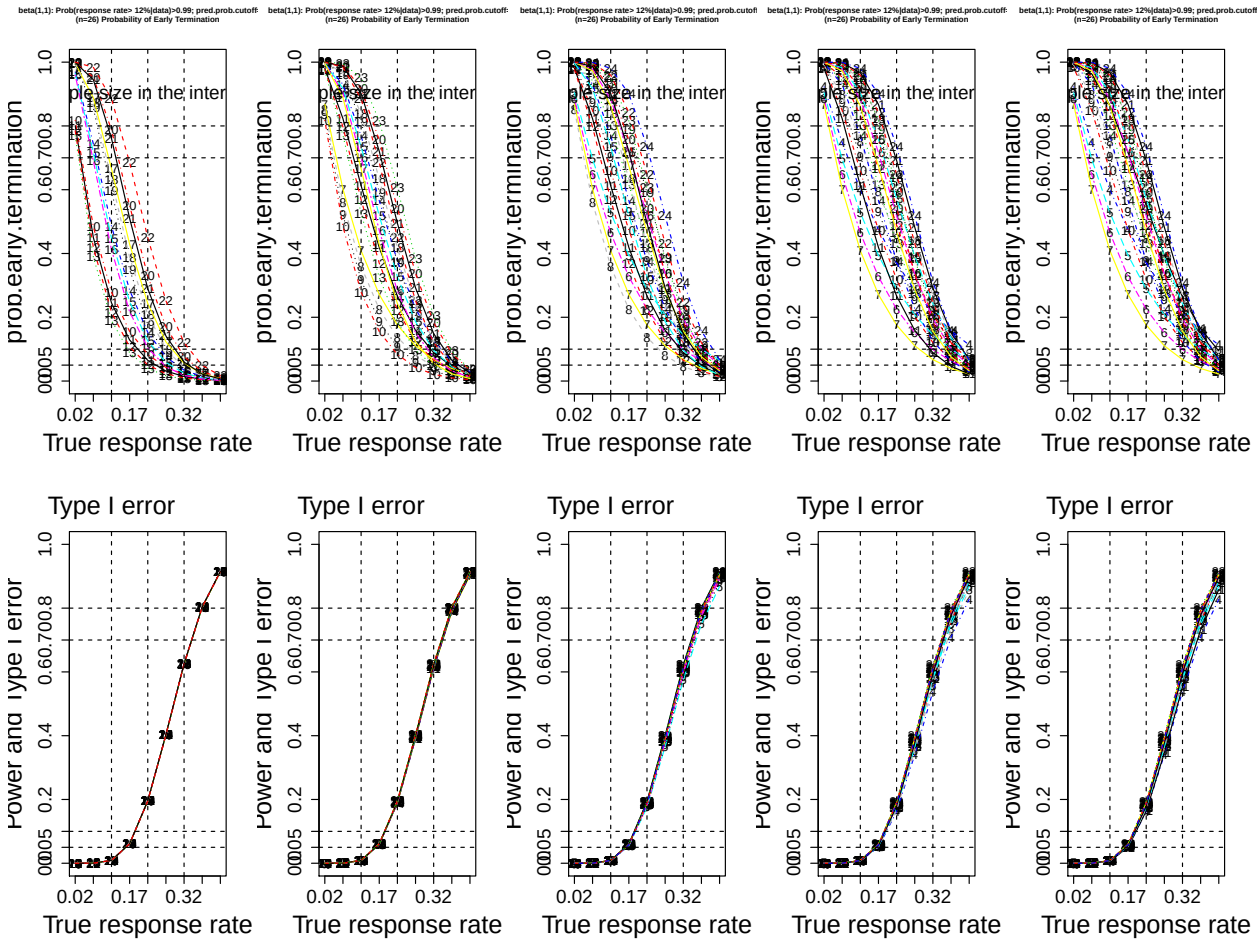

beta(1,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

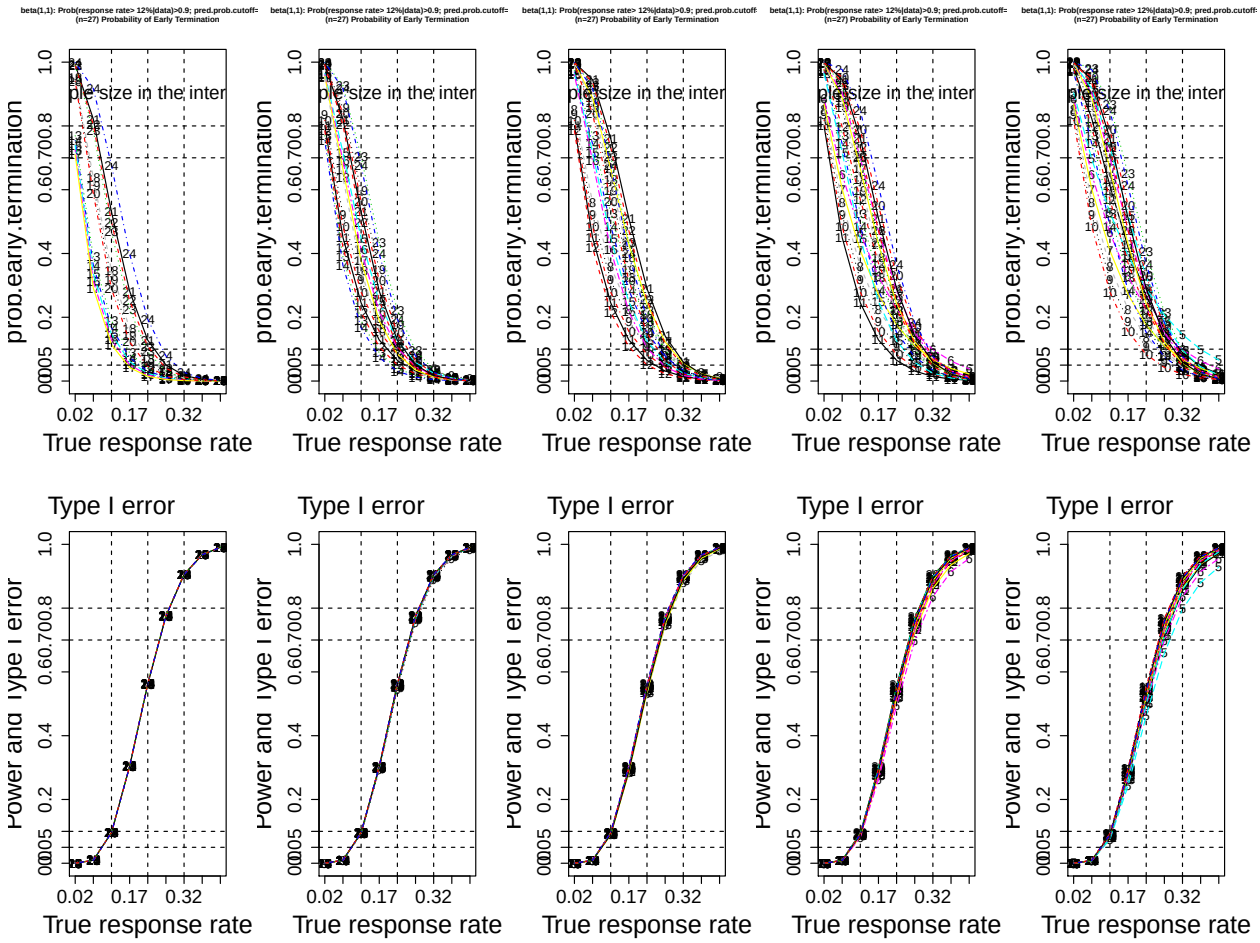

beta(1,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32

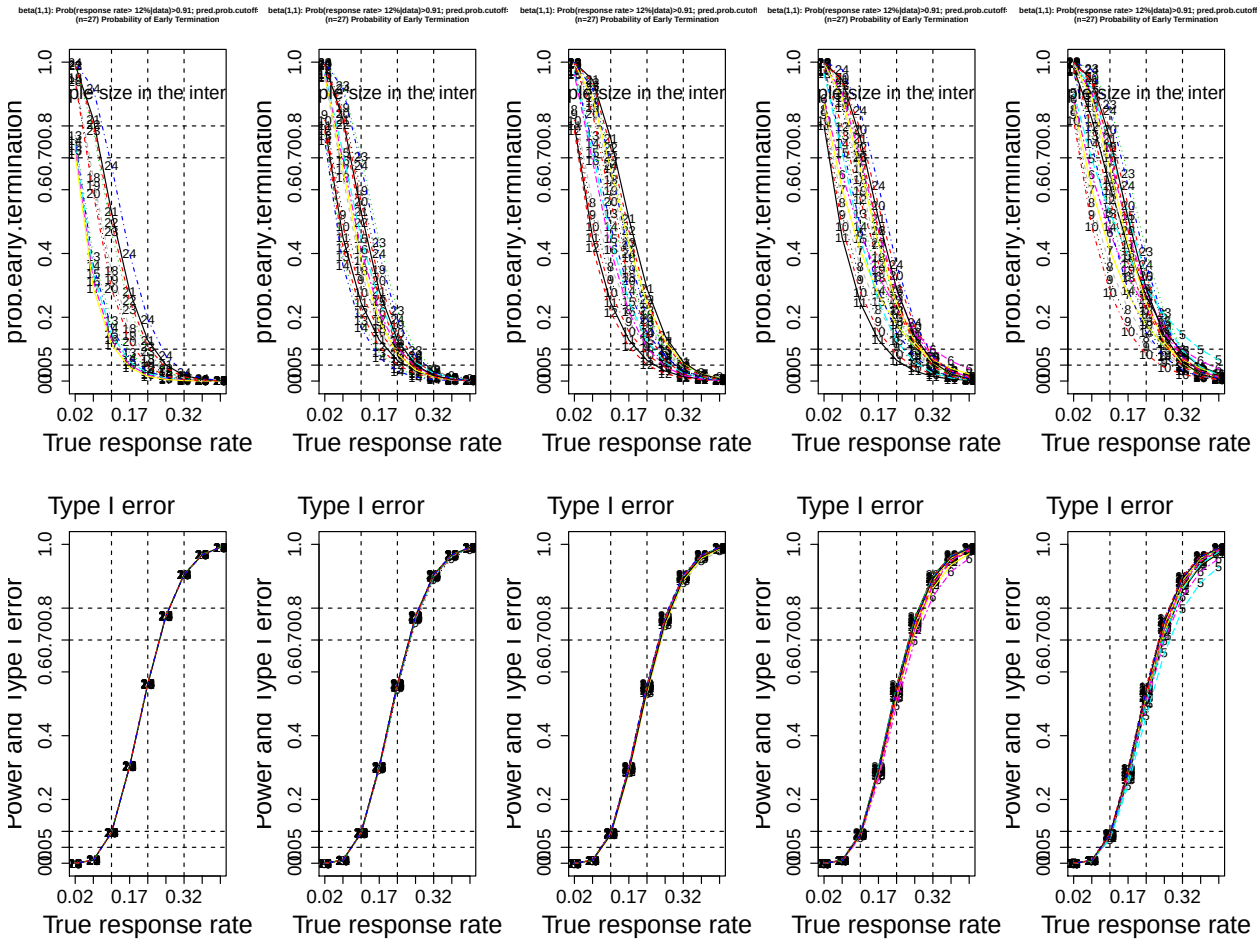

beta(1,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

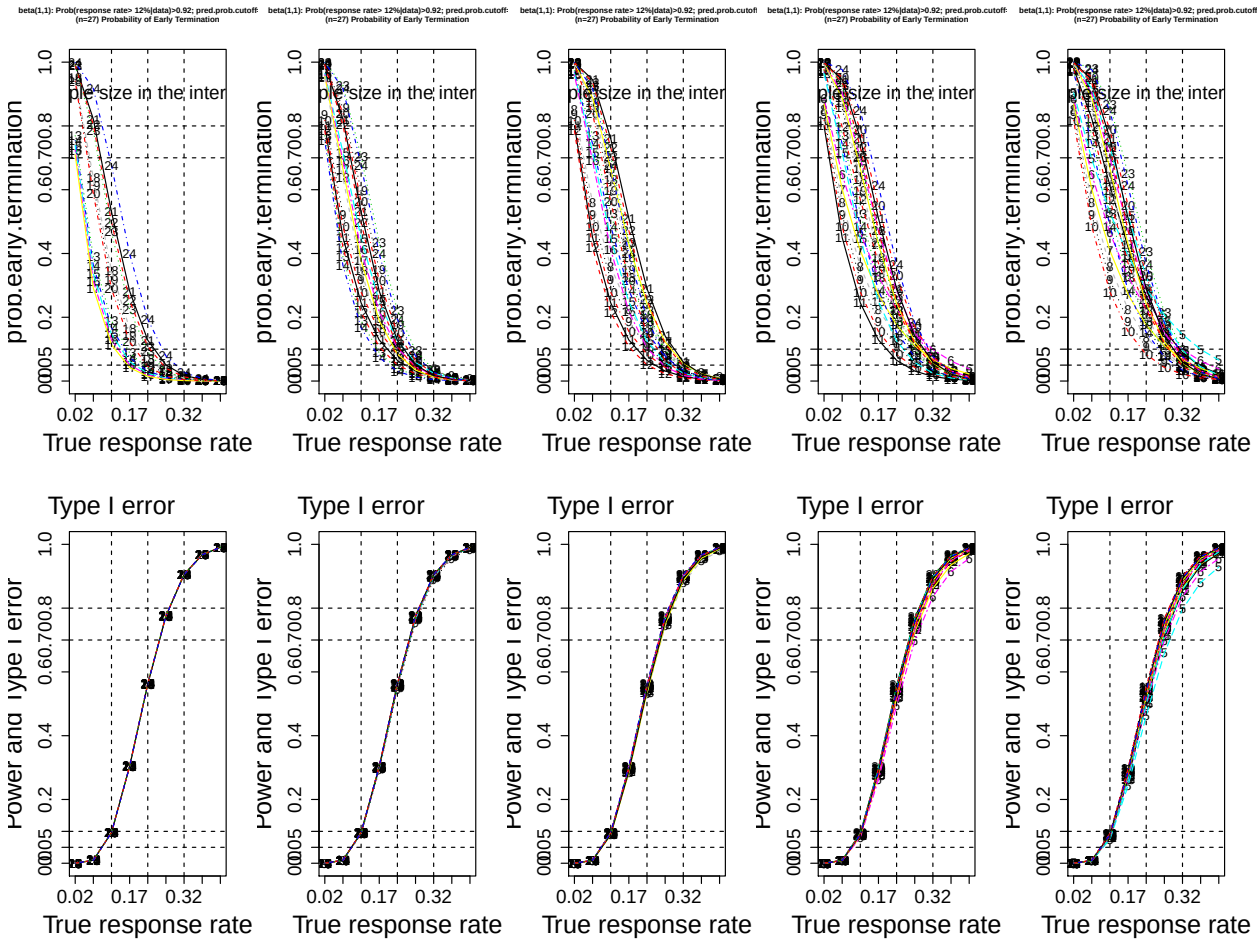

beta(1,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.7
0.8
1.0

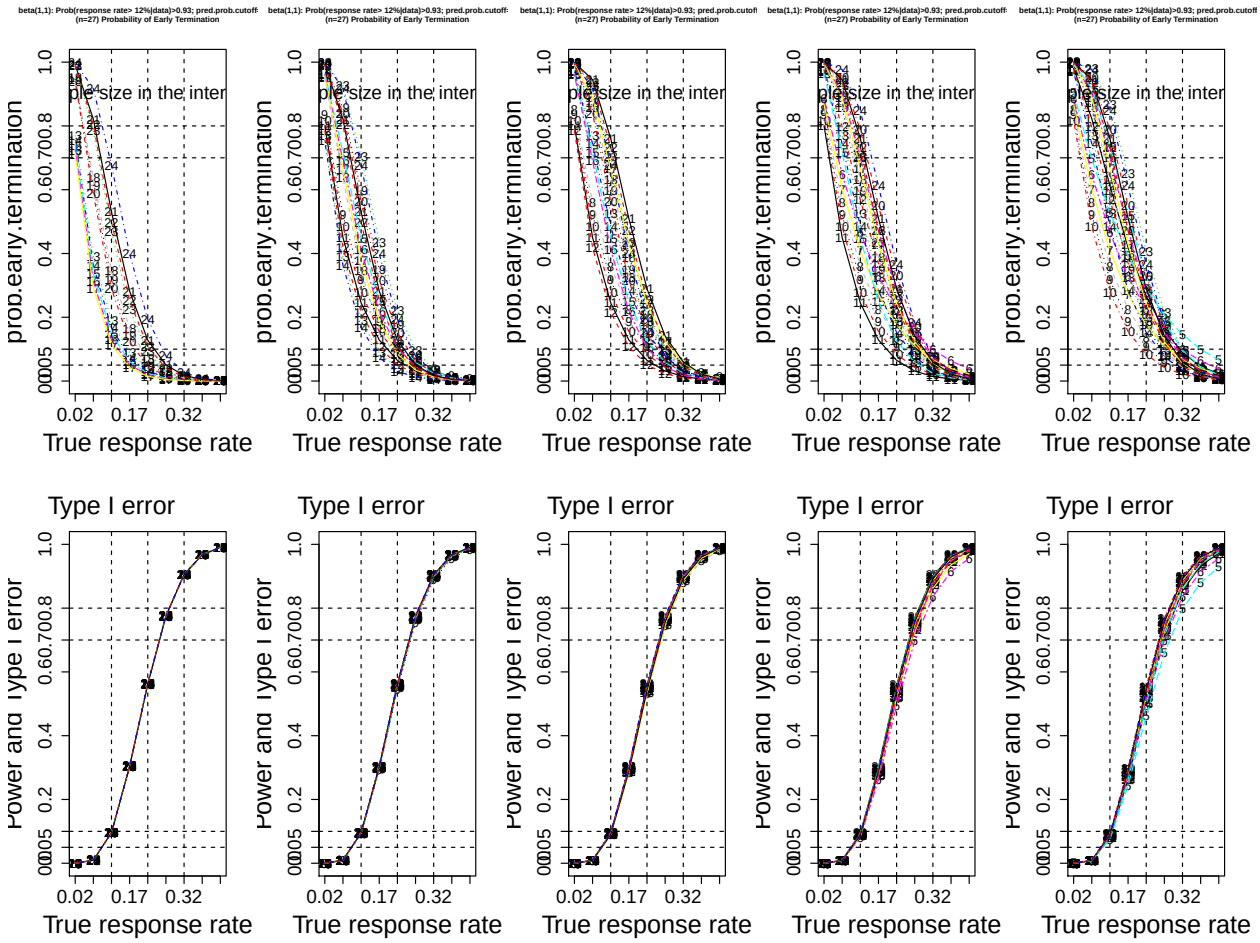

beta(1,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

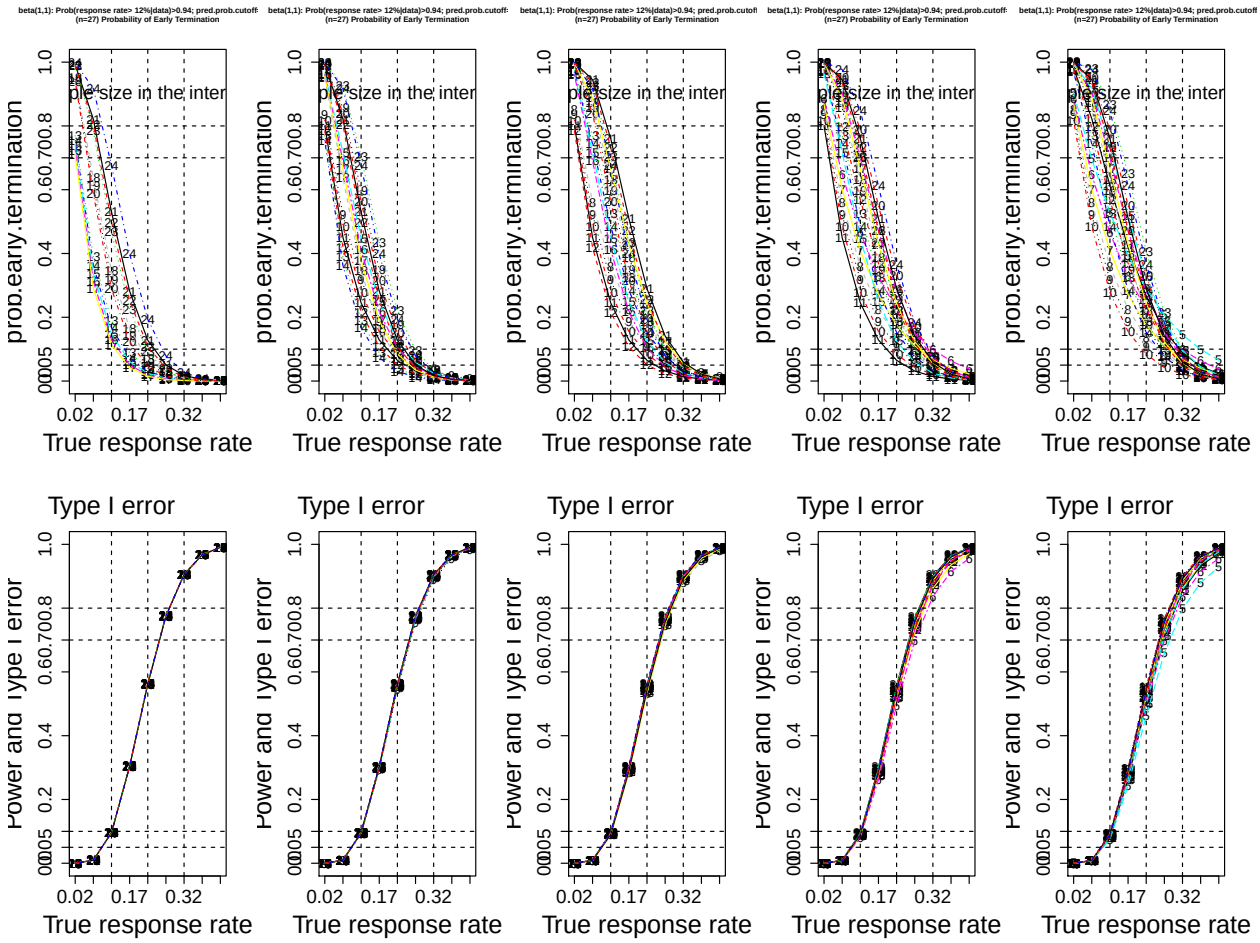

beta(1,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=26) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.7
0.8
1.0

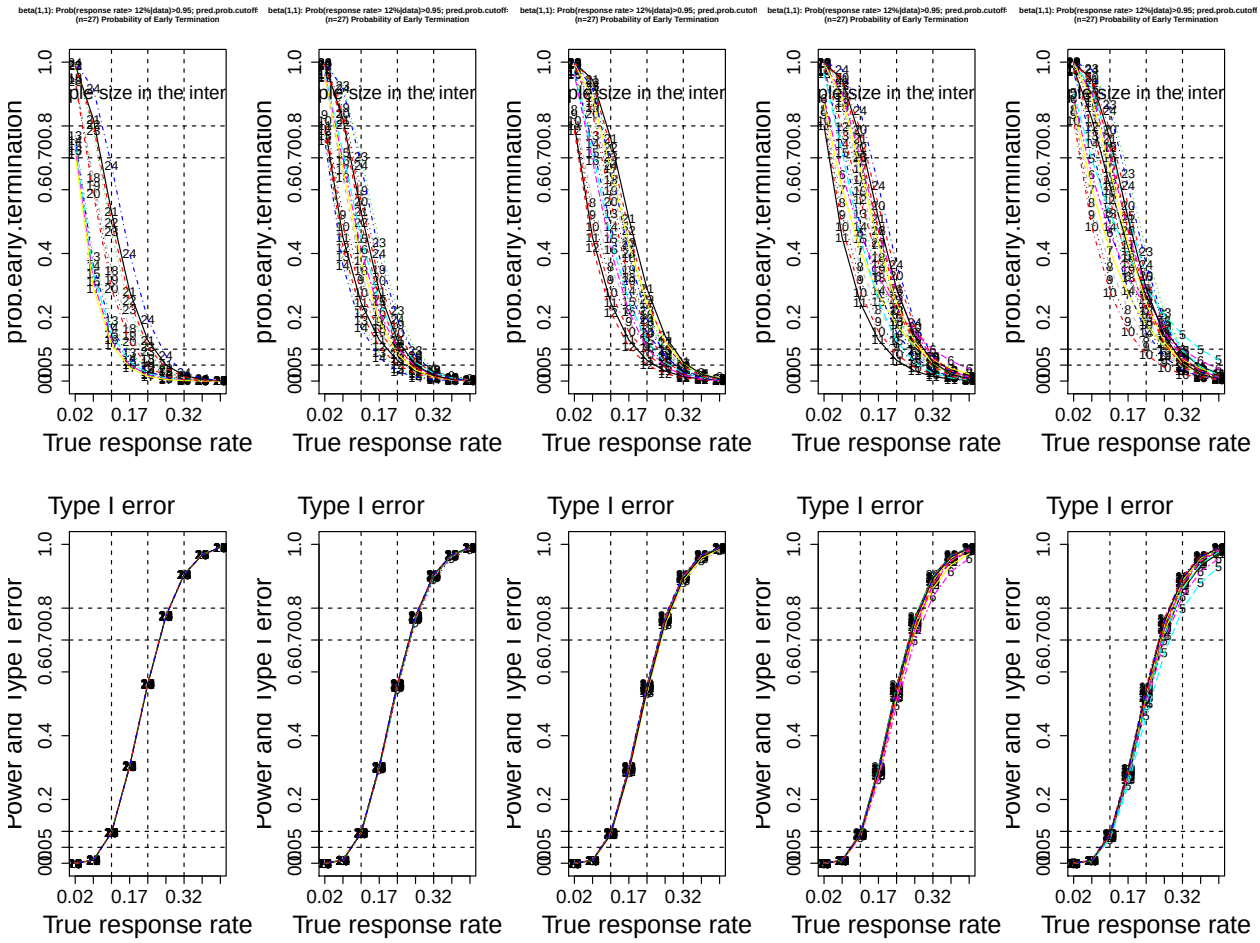

beta(1,1): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

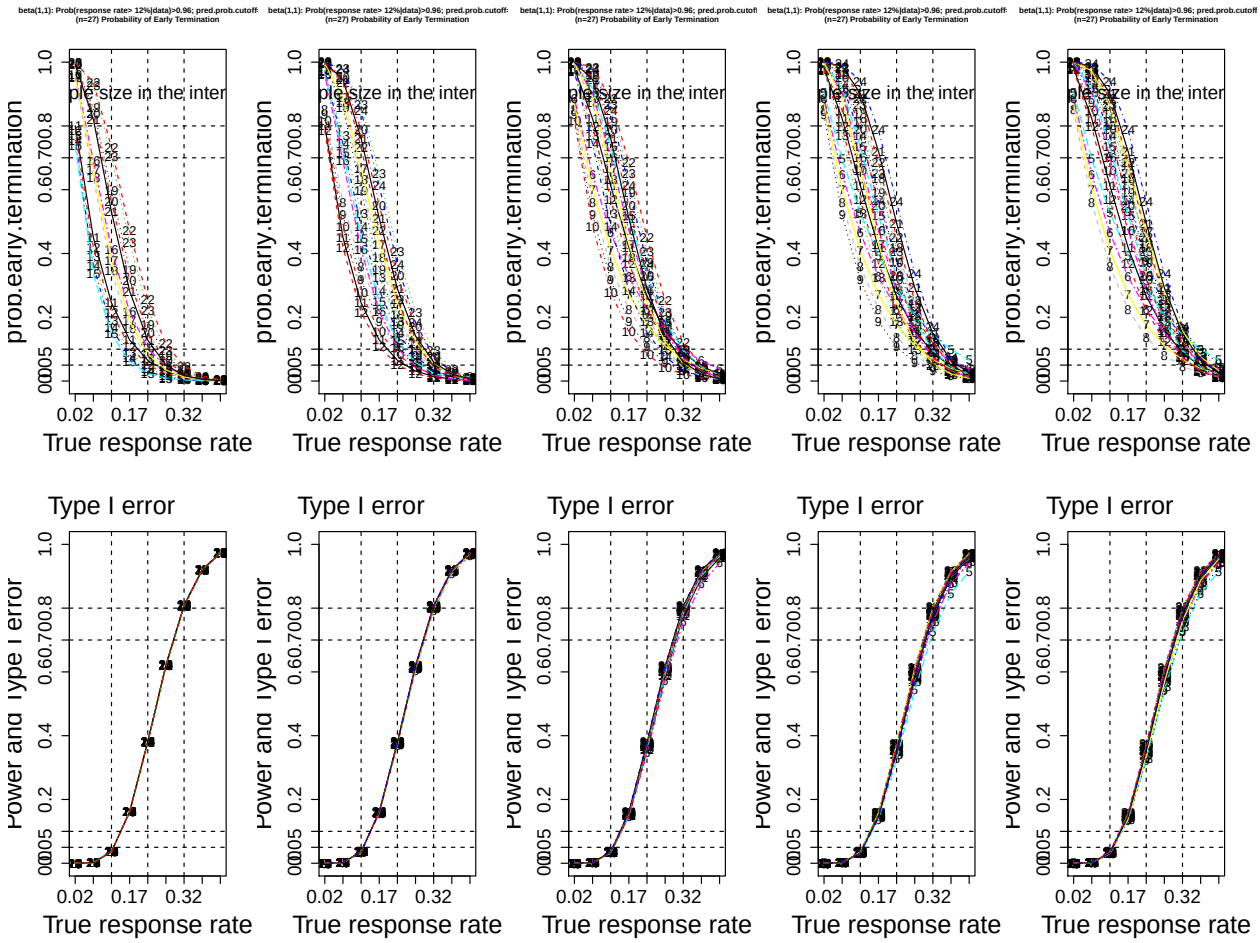

beta(1,1): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

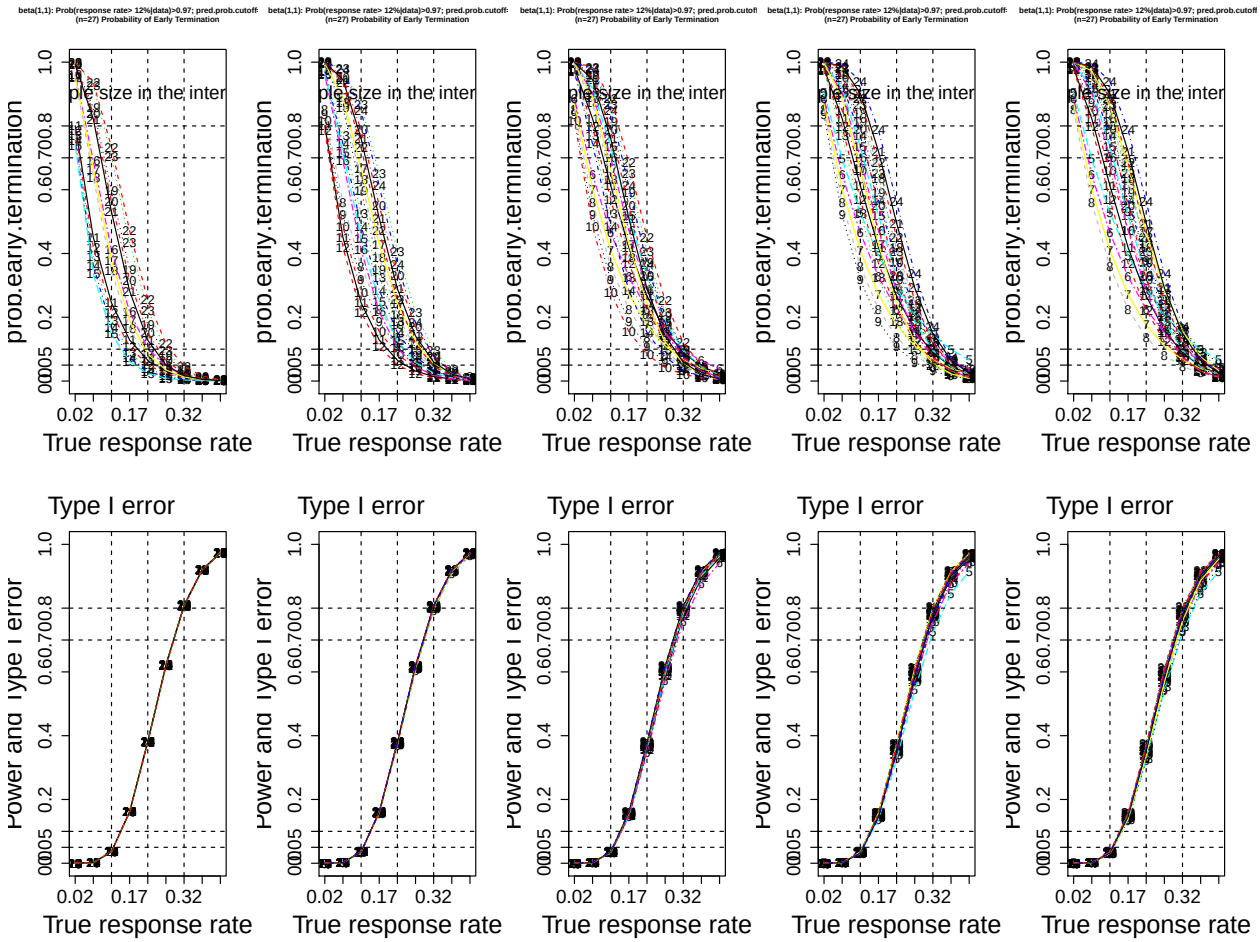

beta(1,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

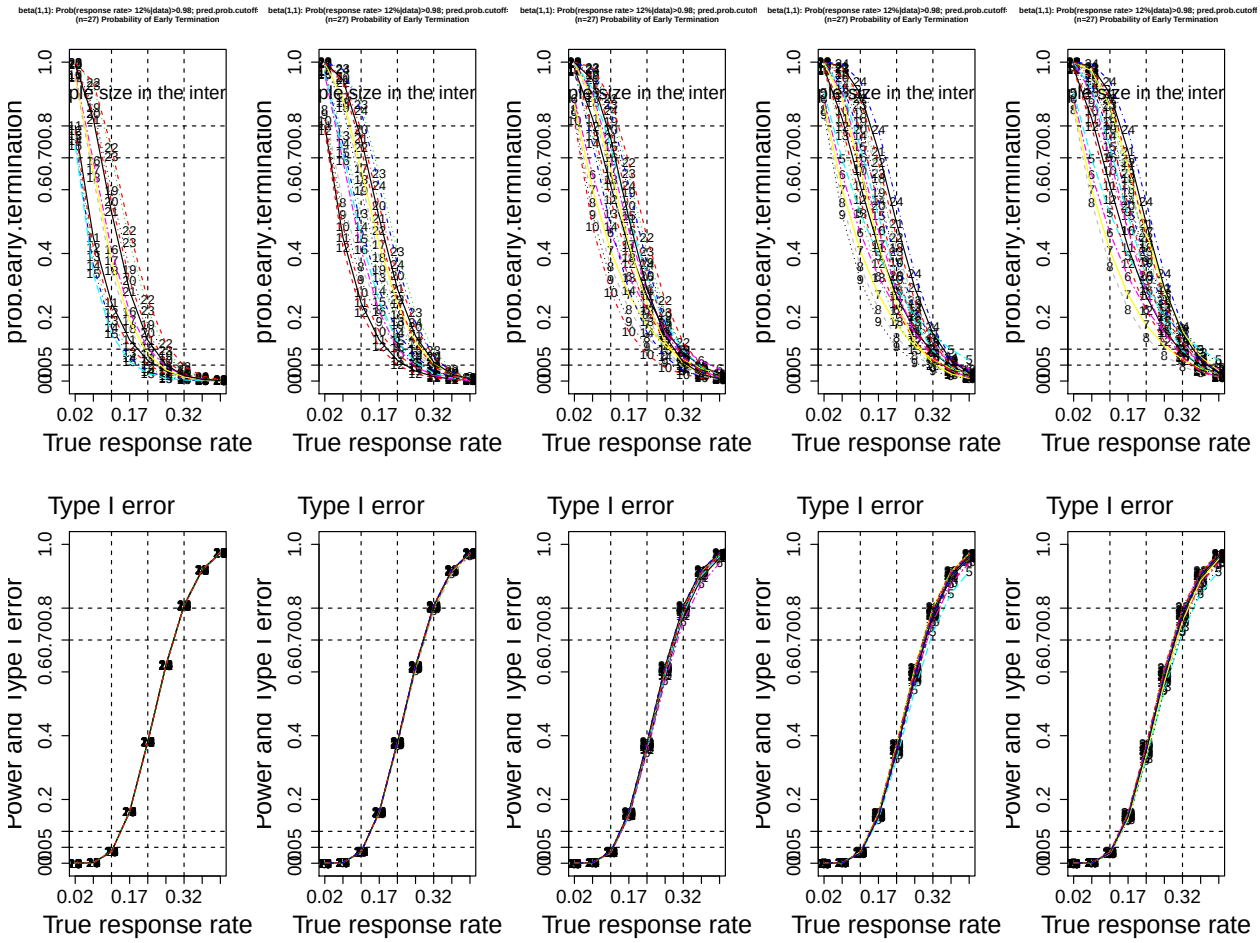

beta(1,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

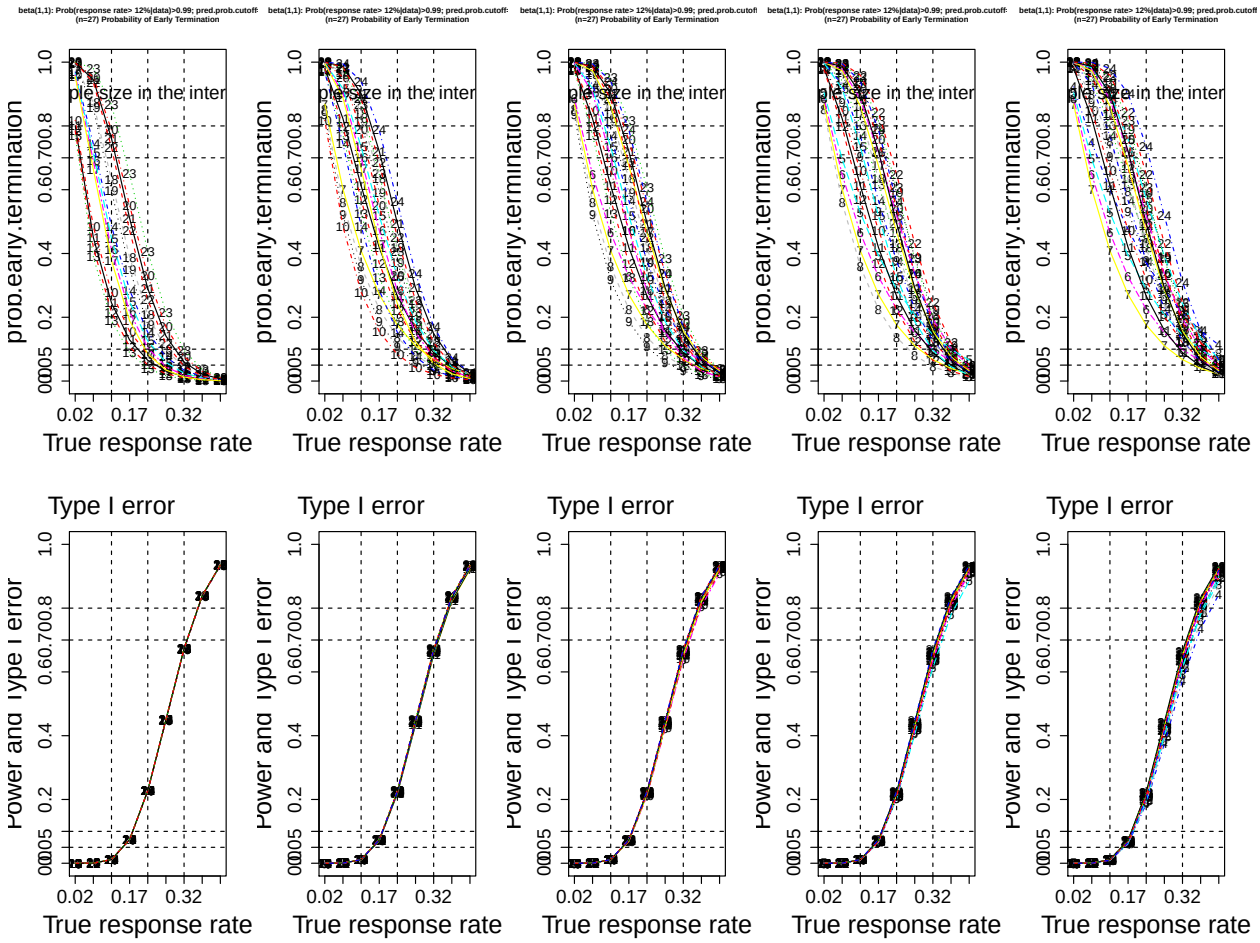

beta(1,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

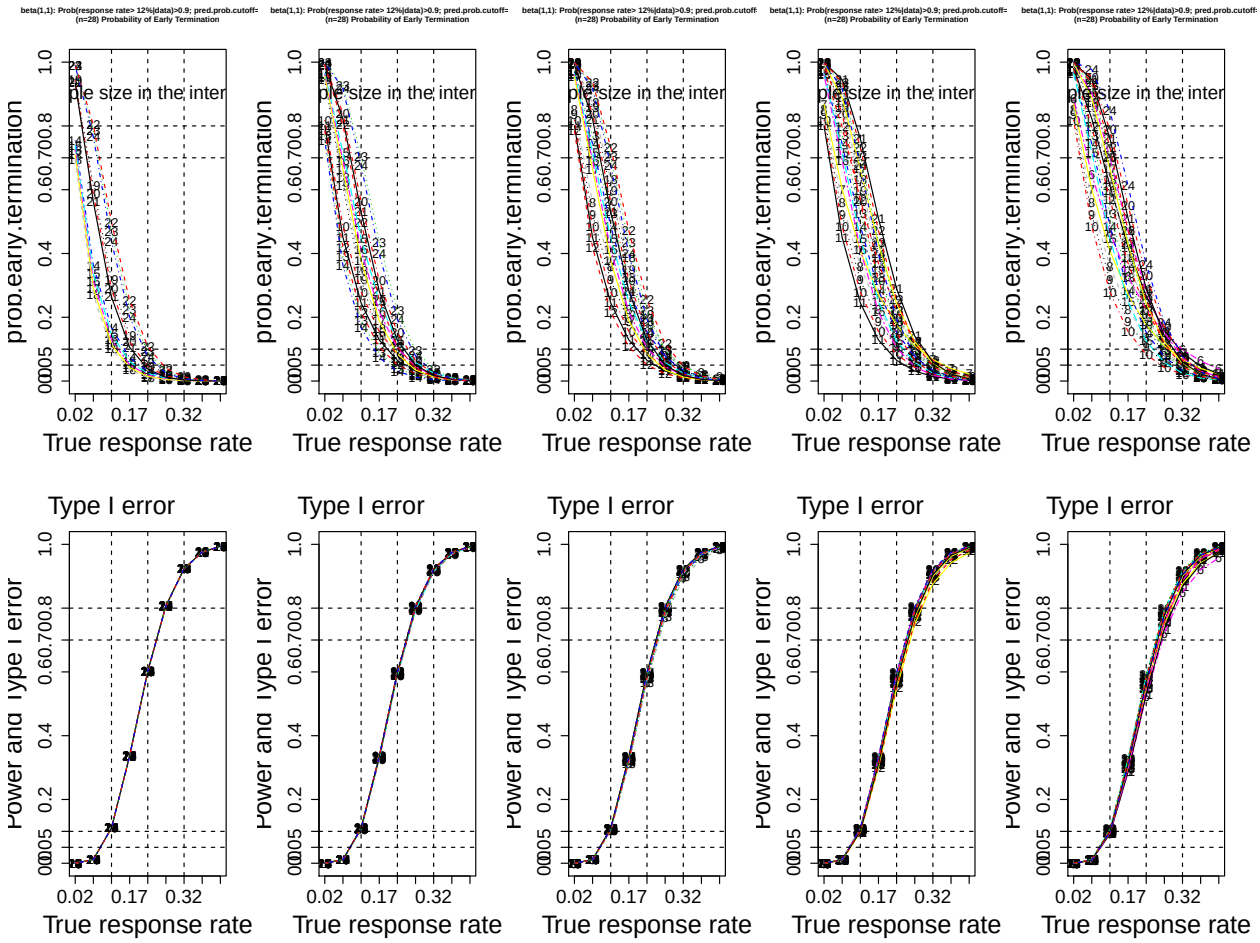

beta(1,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

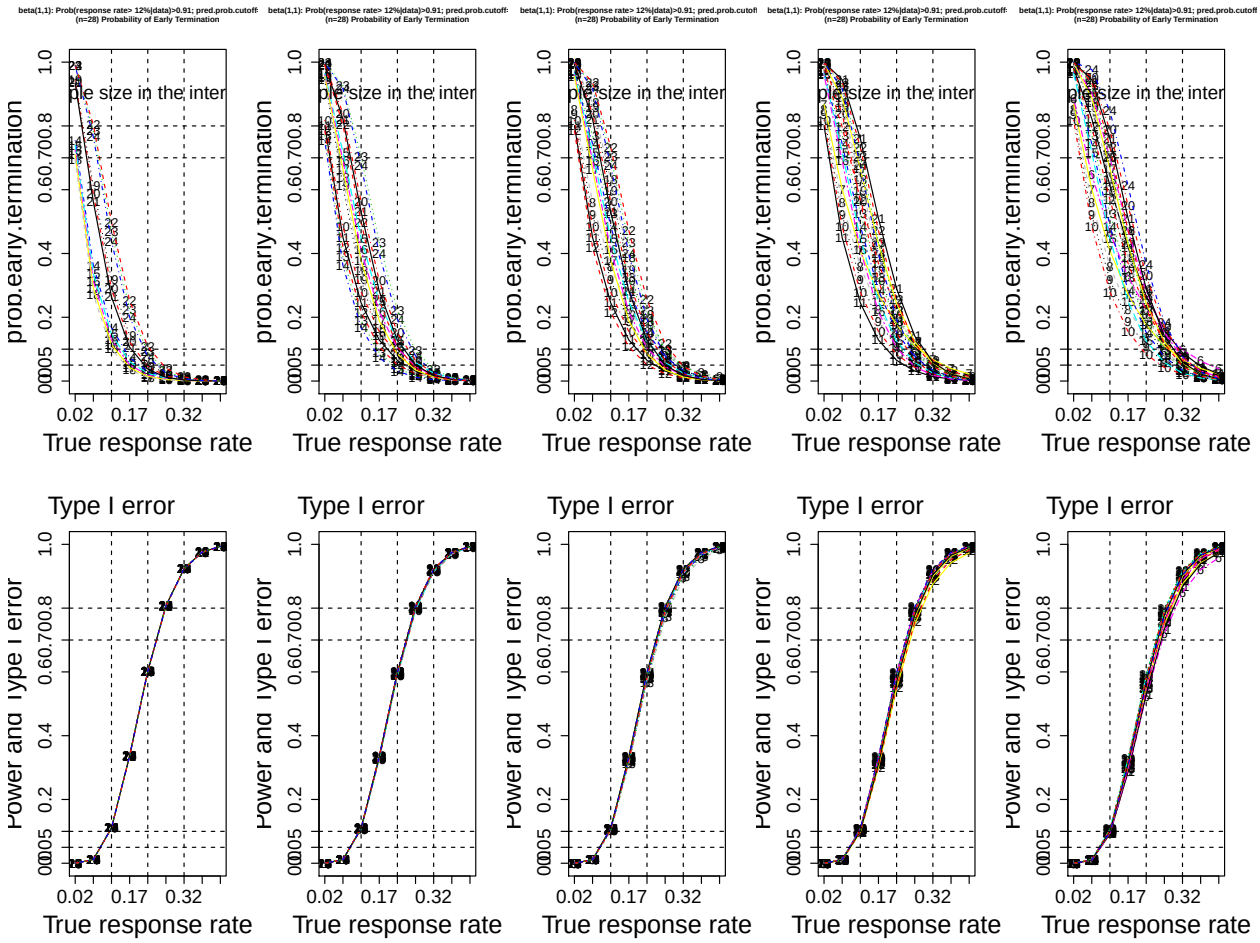

beta(1,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
True response rate

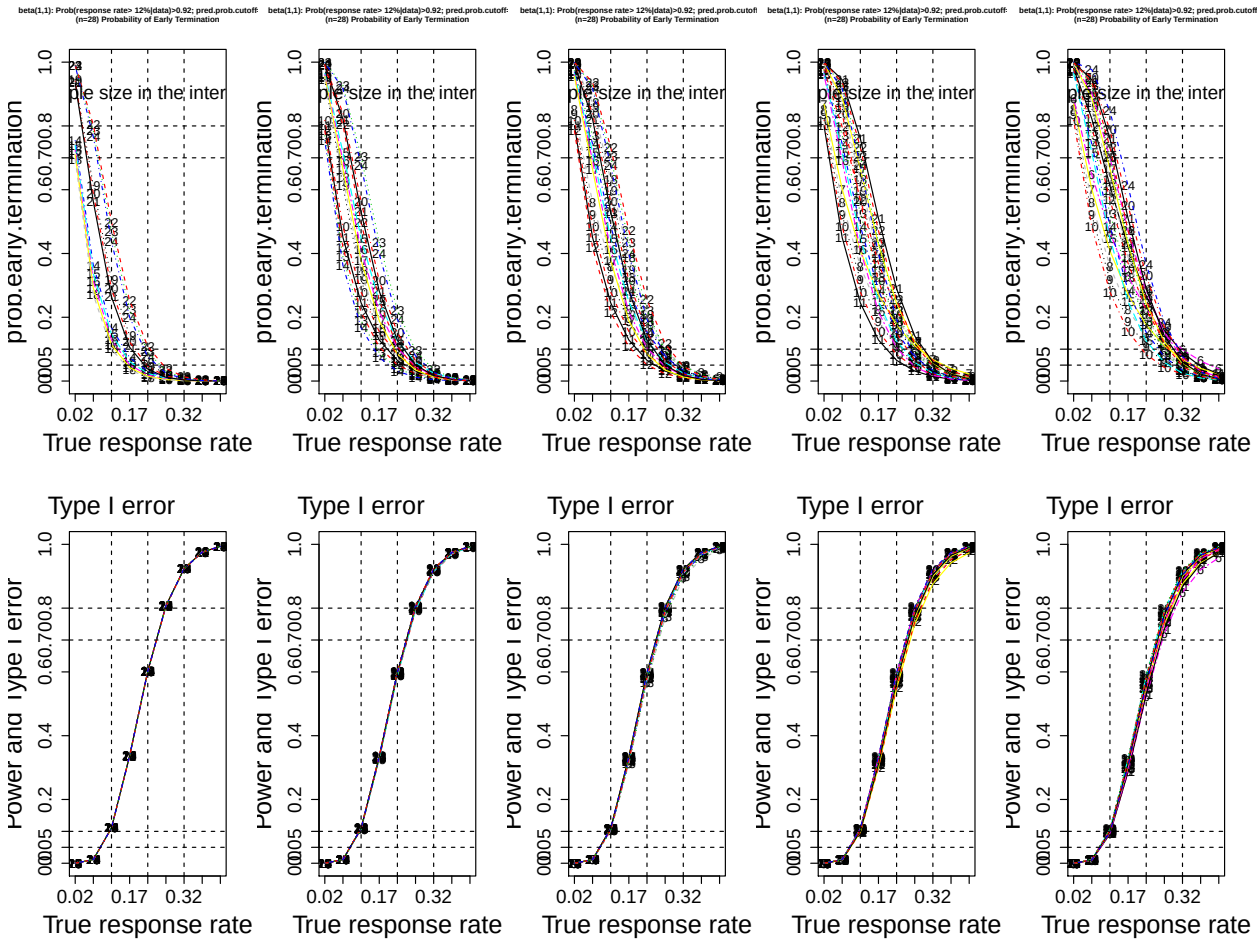

beta(1,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.7
0.8
1.0

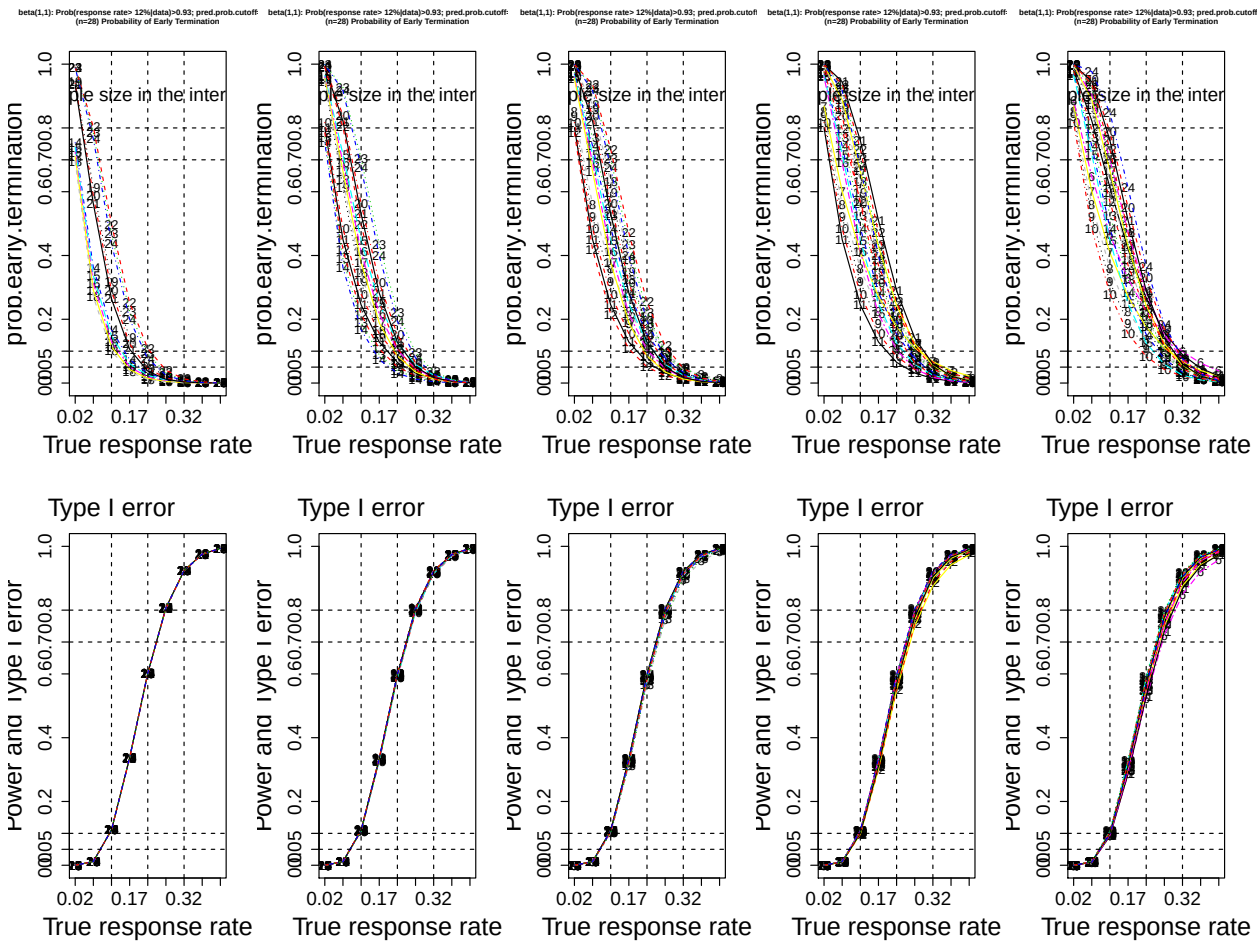

beta(1,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

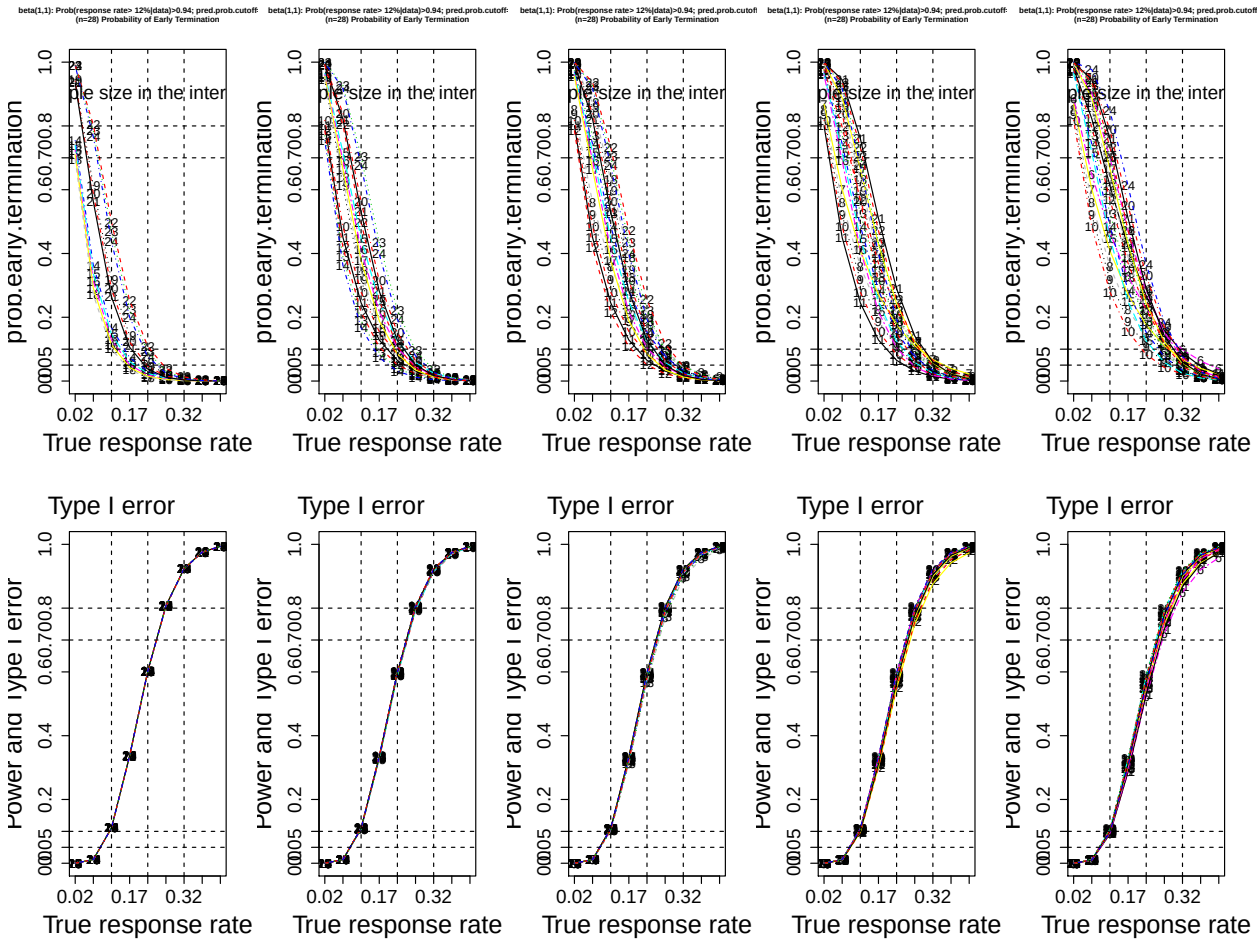

beta(1,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=27) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

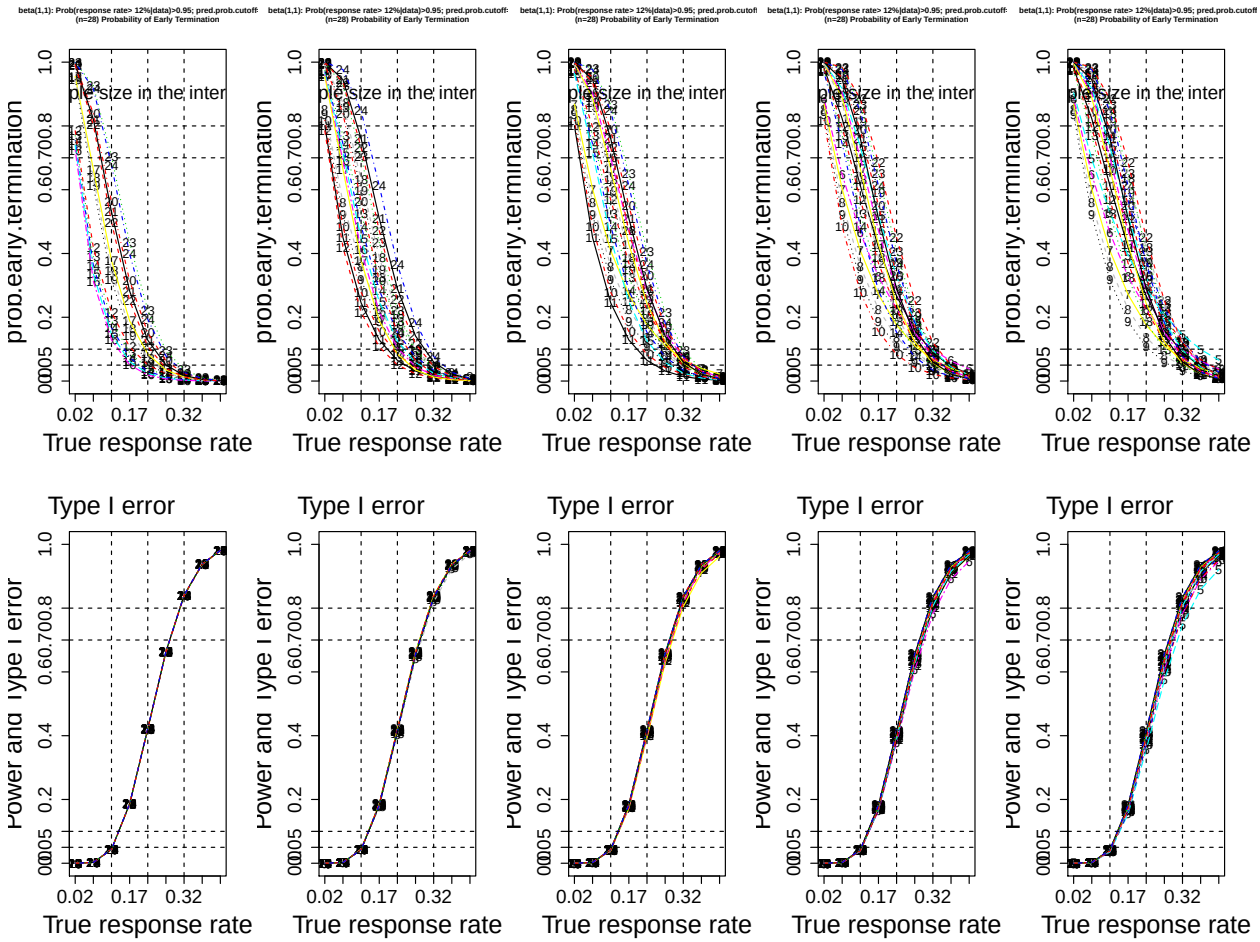

beta(1,1): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02 0.17 0.32
0.0 0.2 0.4 0.6 0.7 0.8 1.0

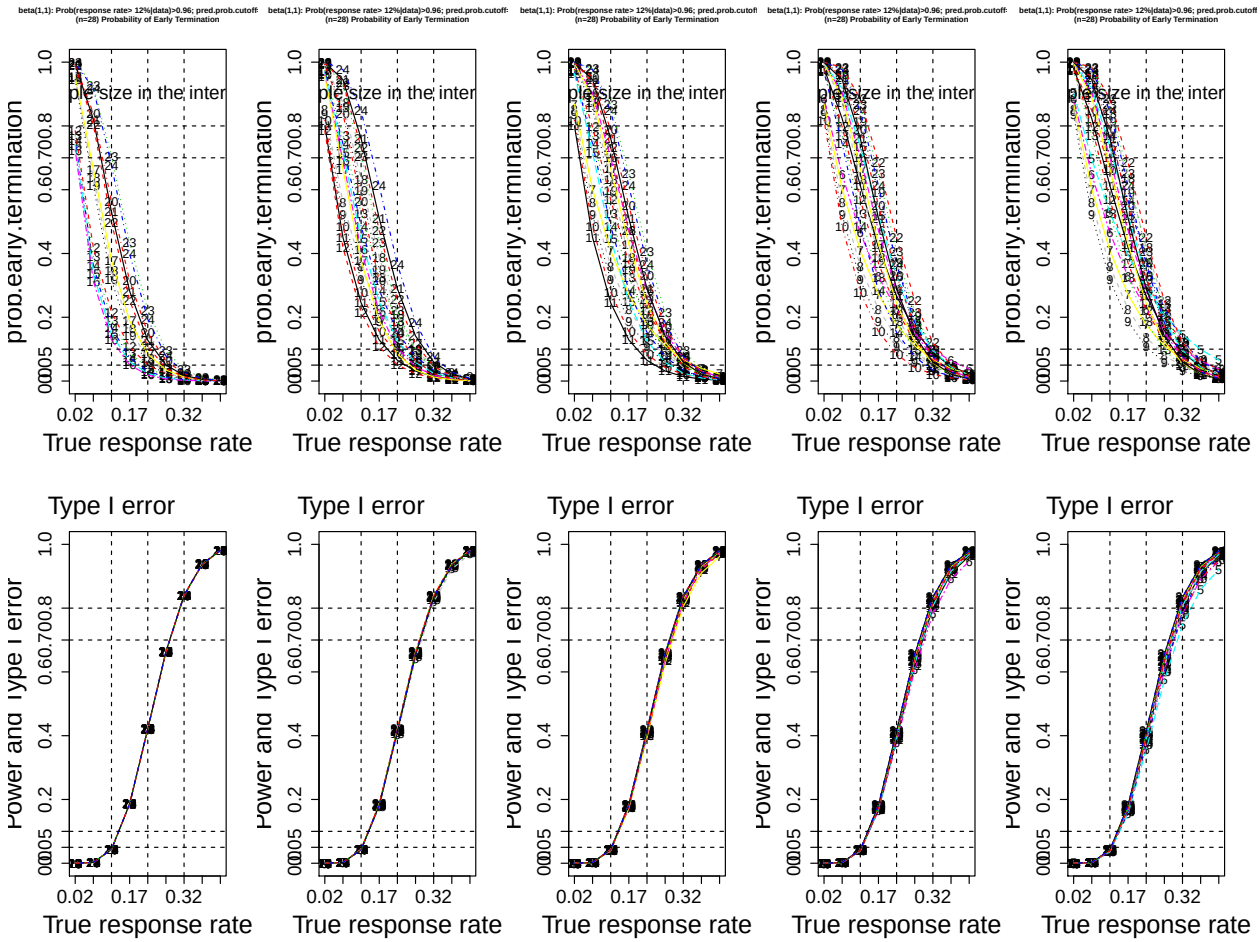

beta(1,1): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

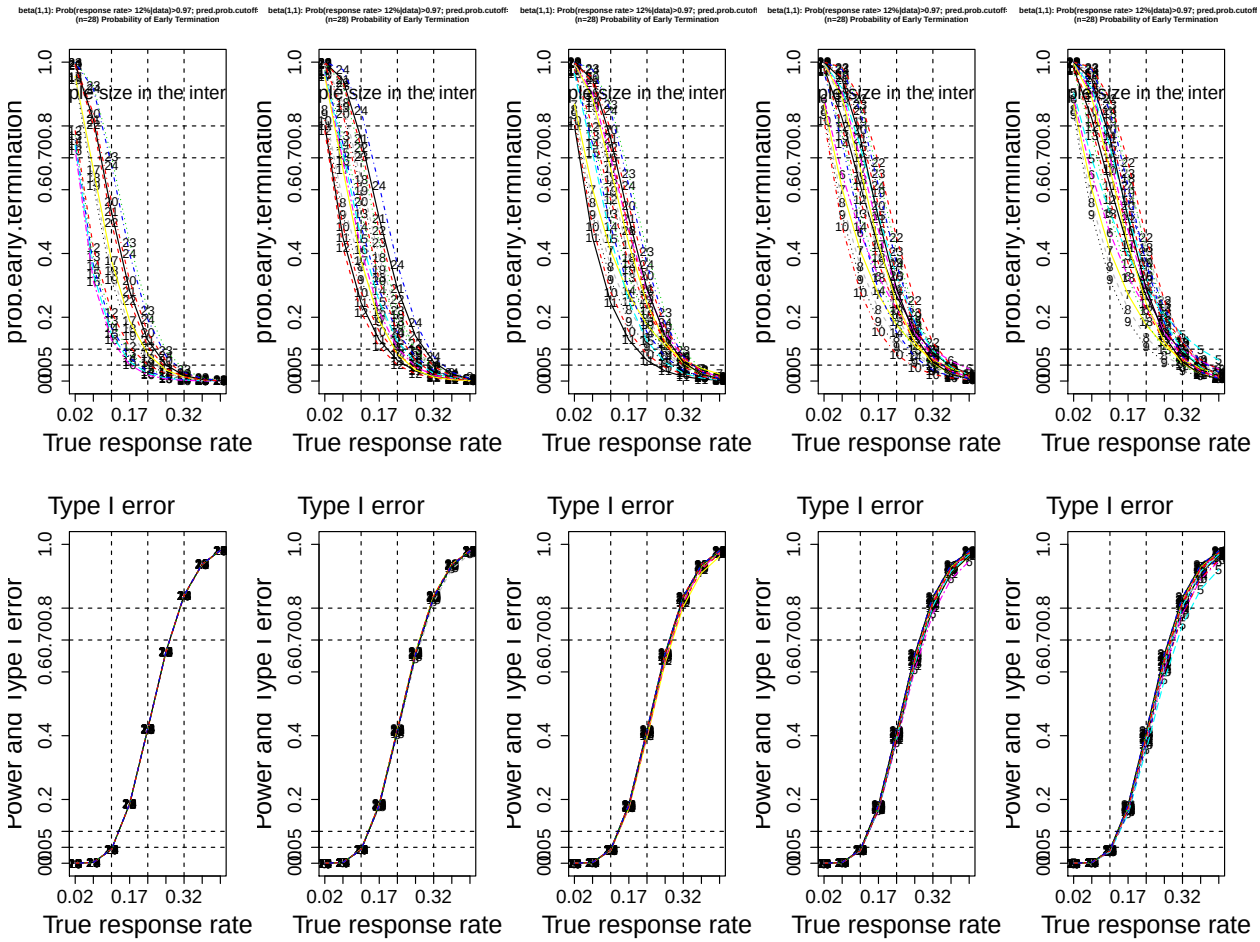

beta(1,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

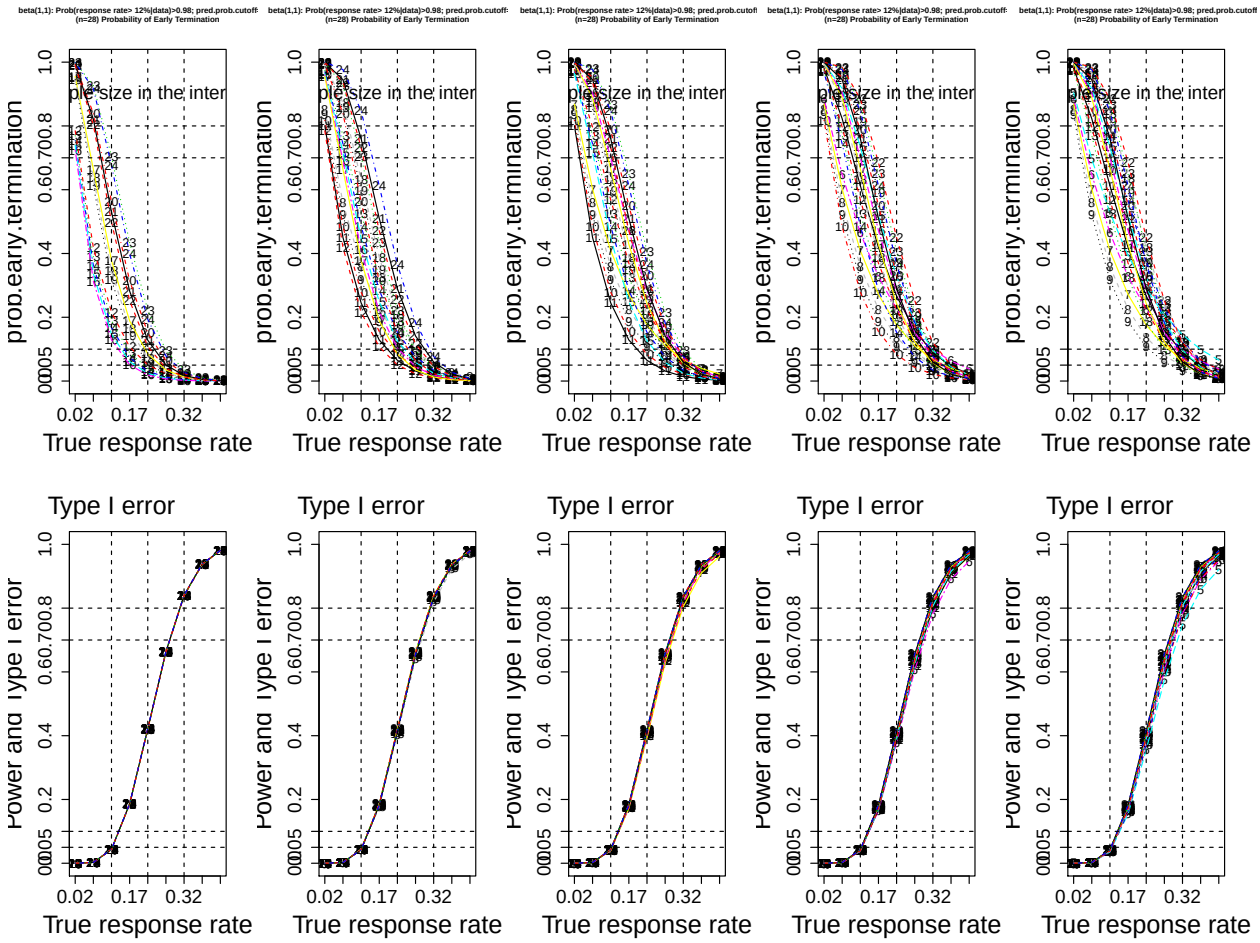

beta(1,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

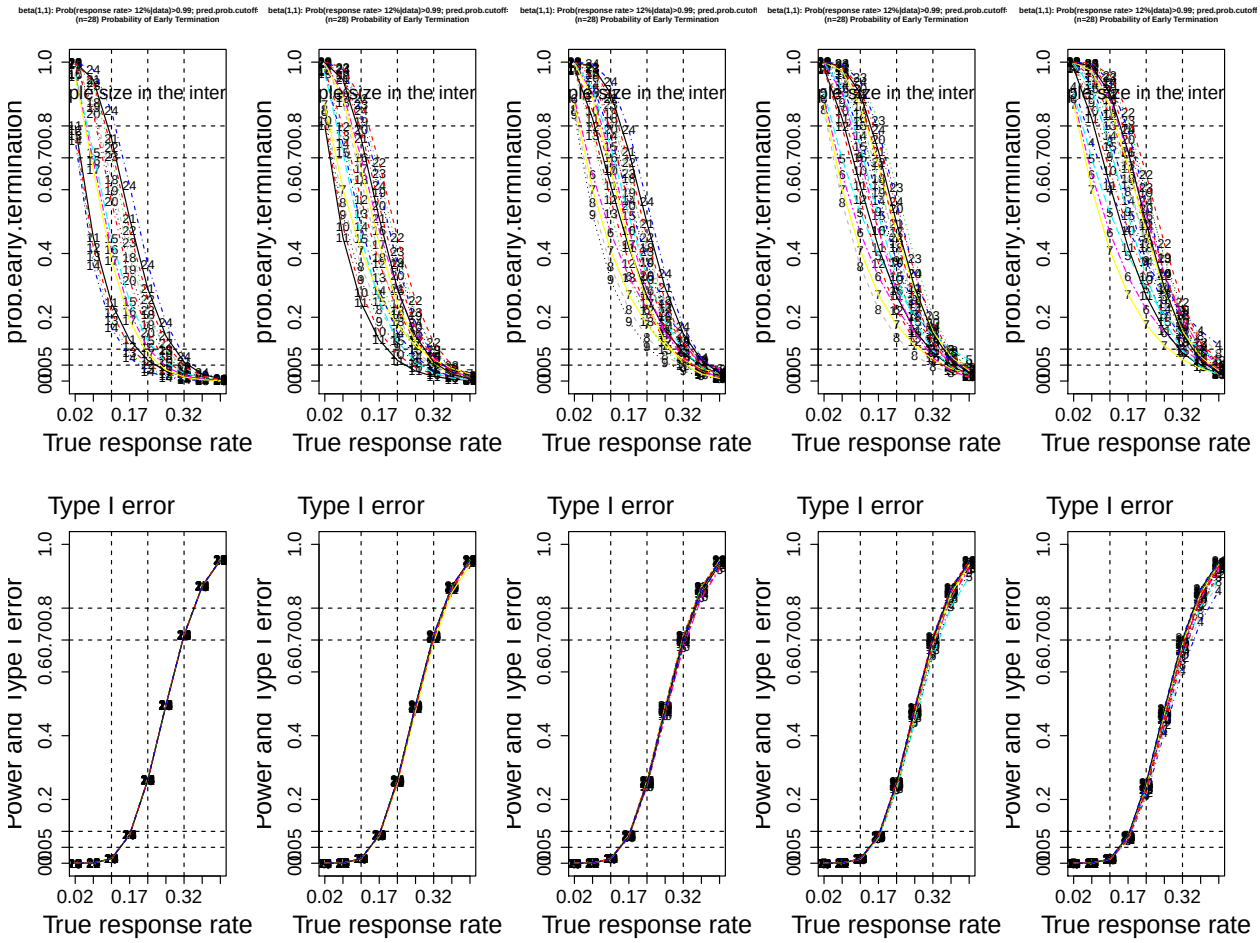

beta(1,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

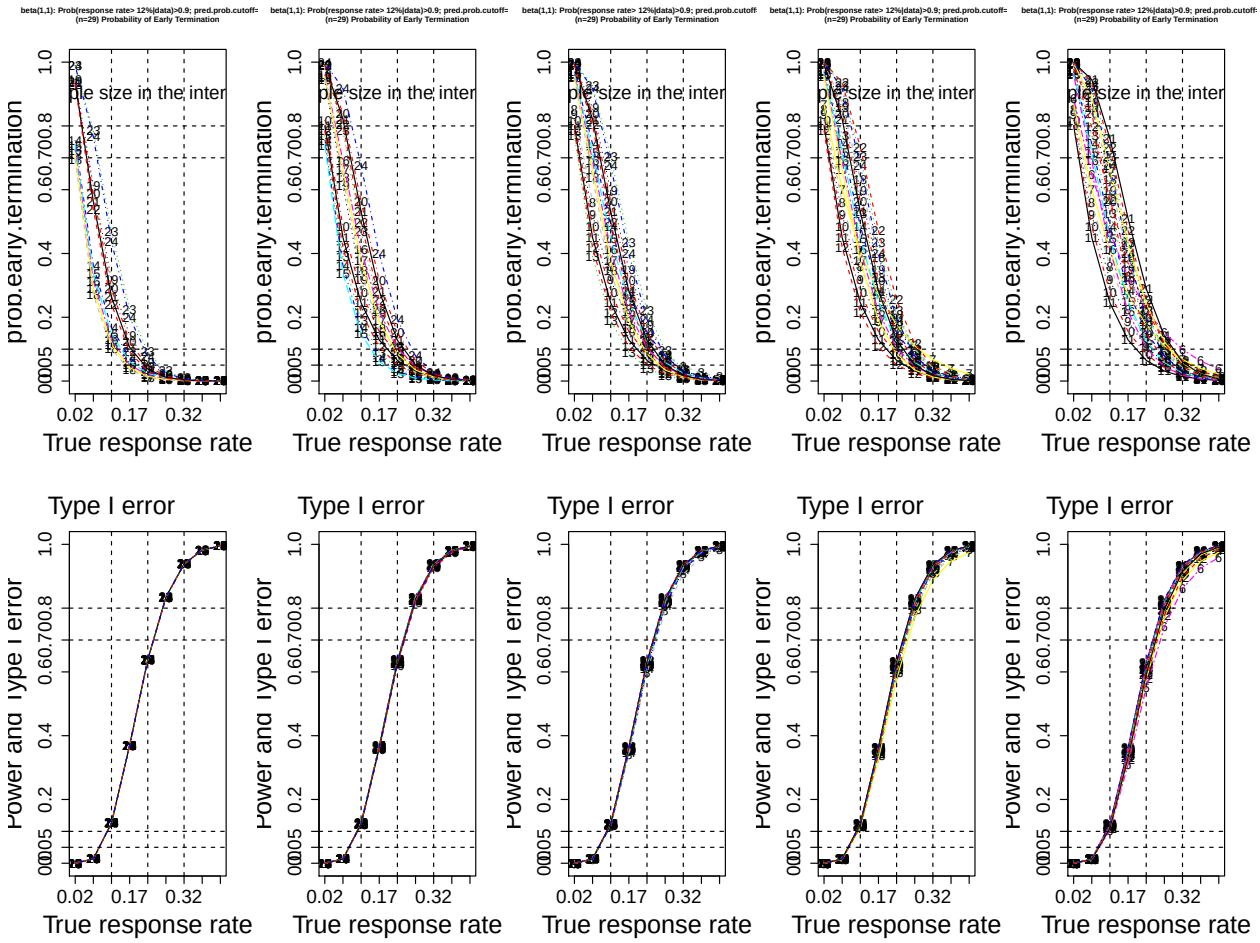

beta(1,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

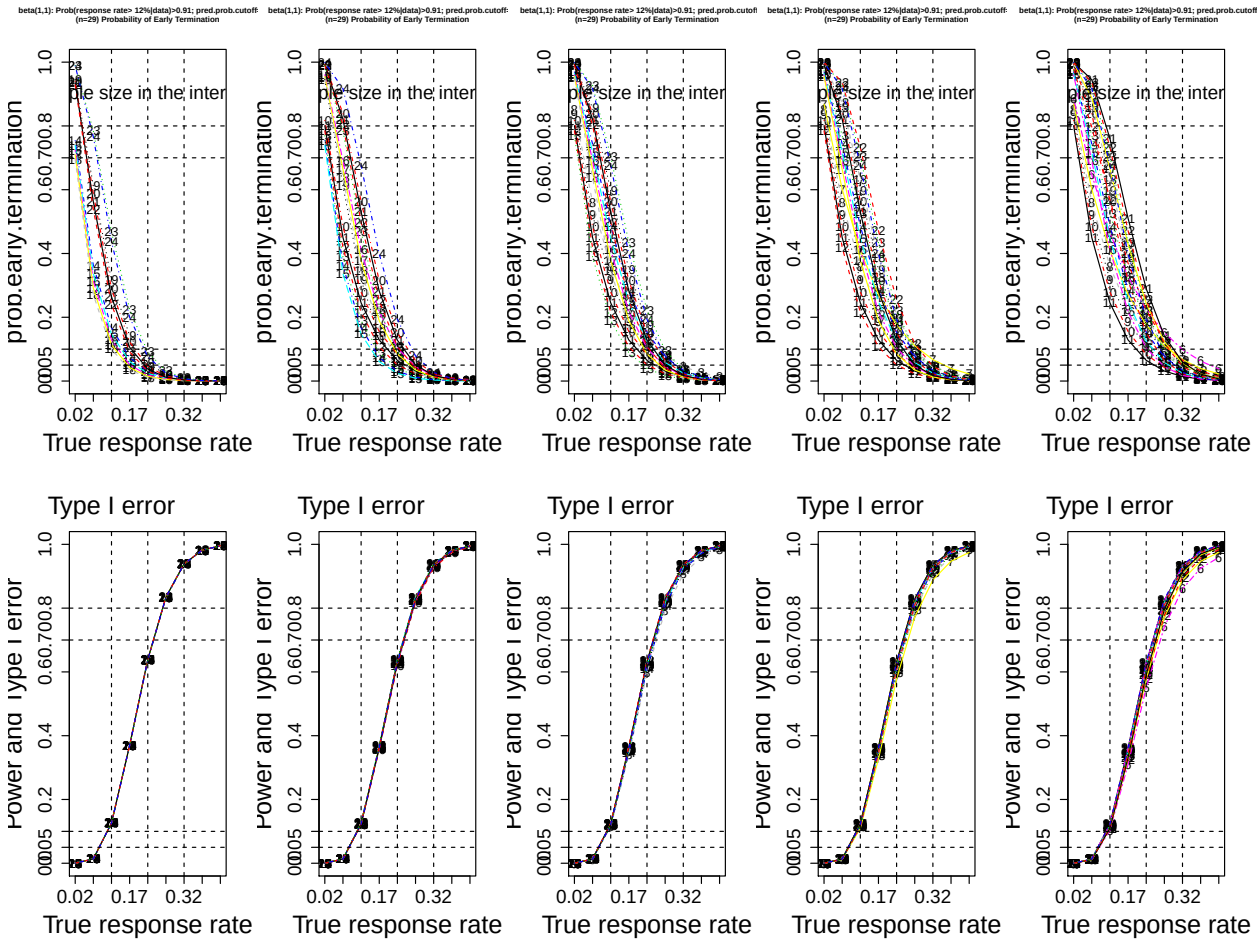

beta(1,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

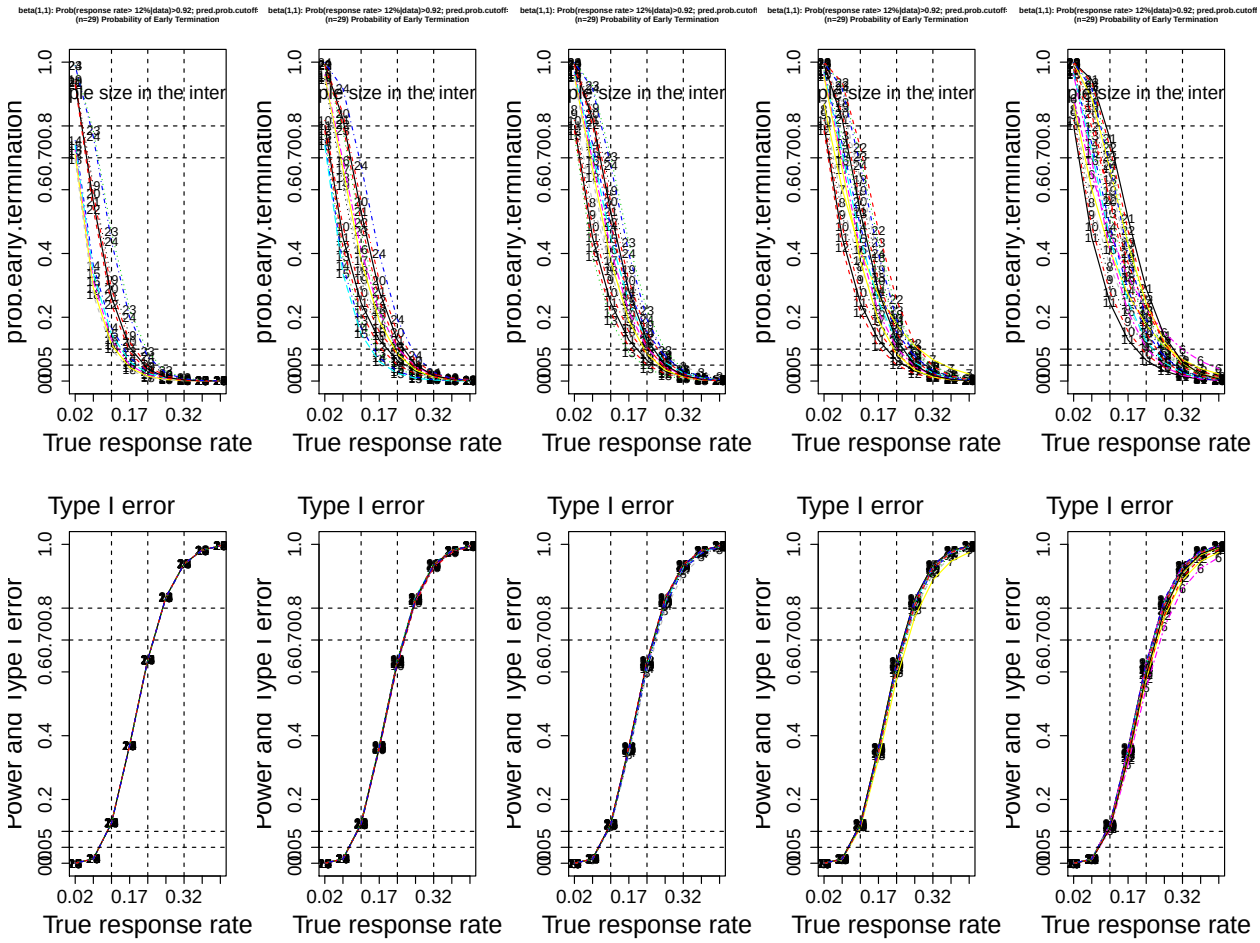

beta(1,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

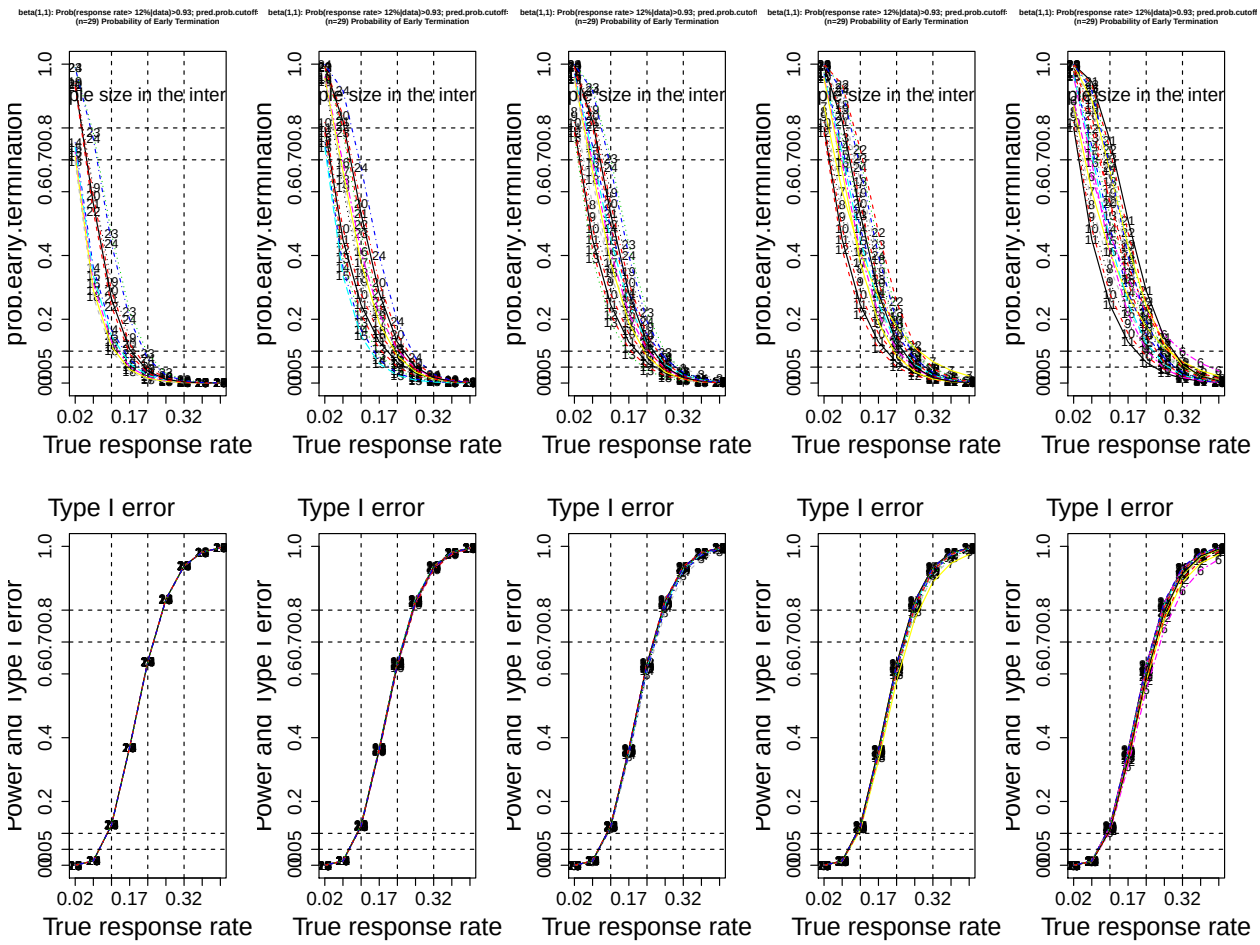

beta(1,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

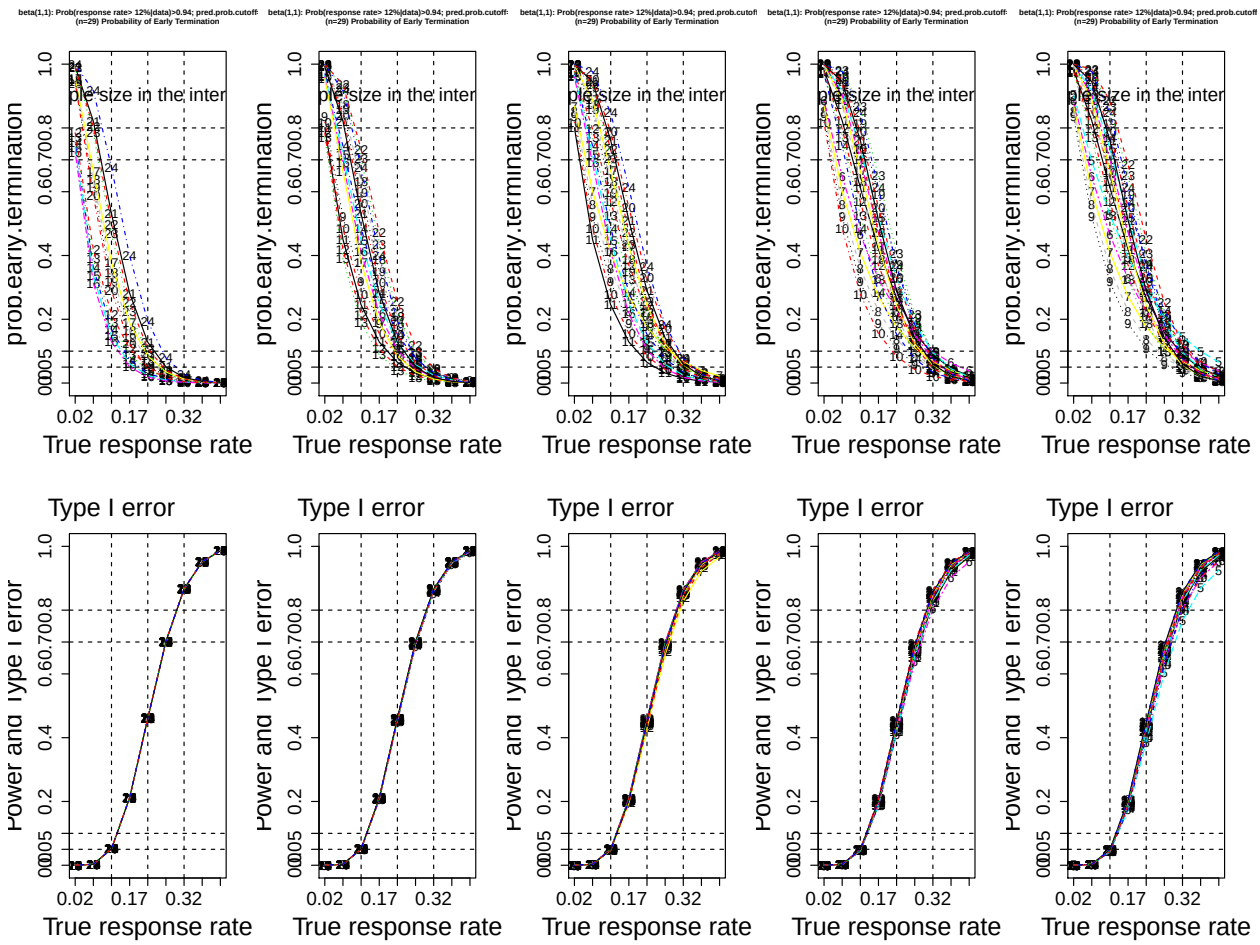

beta(1,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=28) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

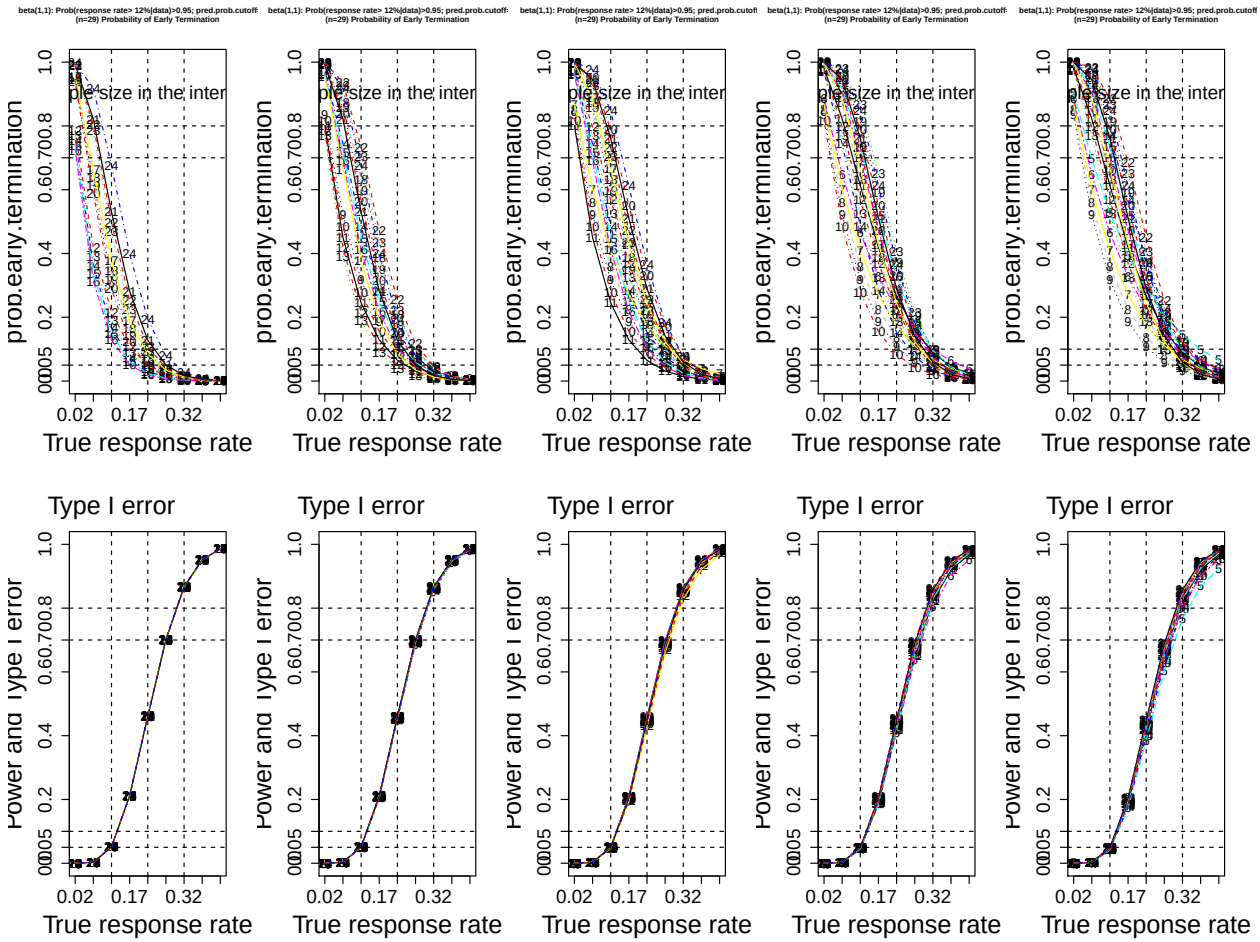

beta(1,1): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=29) Probability of Early Termination
prob.early.termination
ple size in the inter
True response rate
Type I error
Power and Type I error
0.02
0.17
0.32

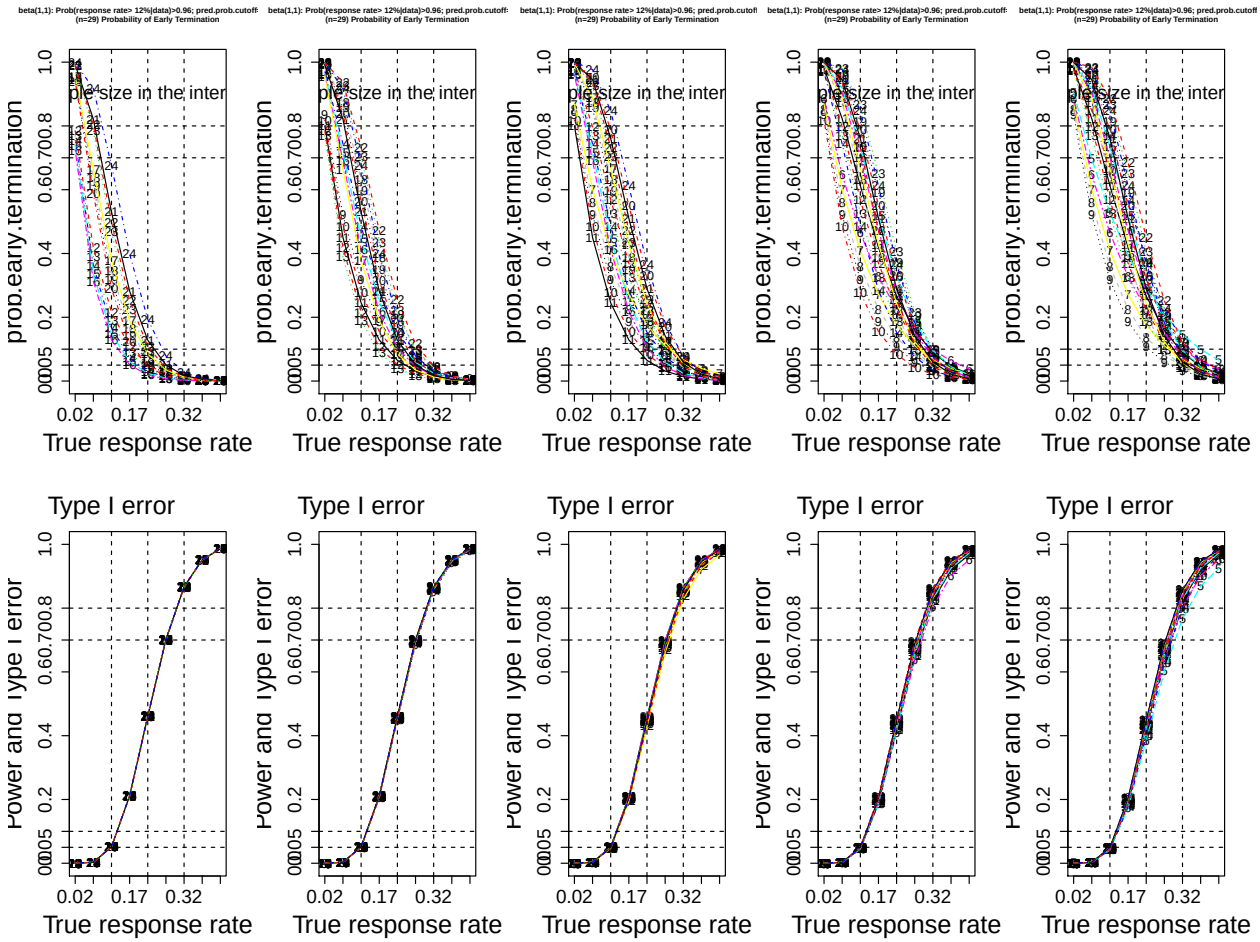

beta(1,1): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

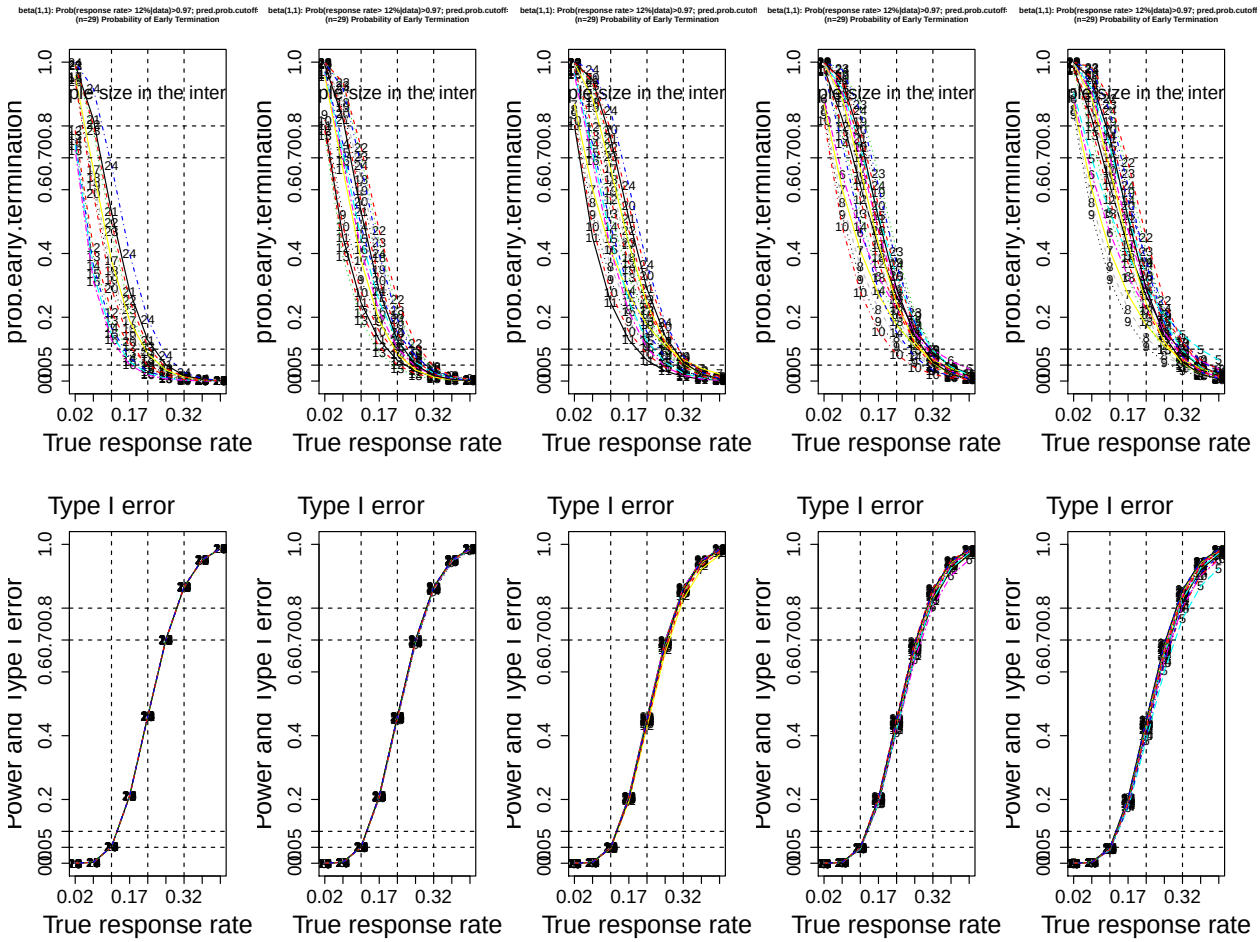

beta(1,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

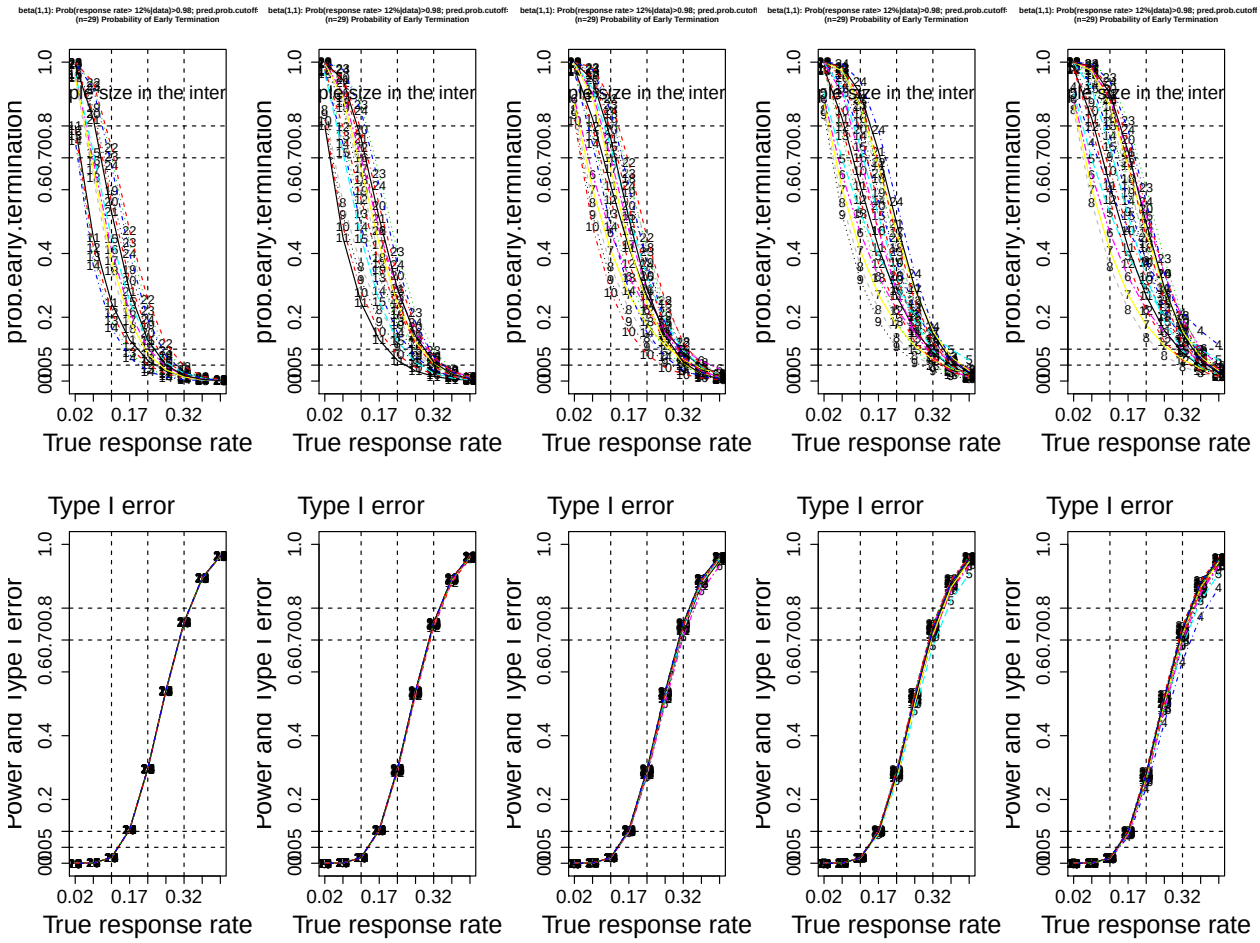

beta(1,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

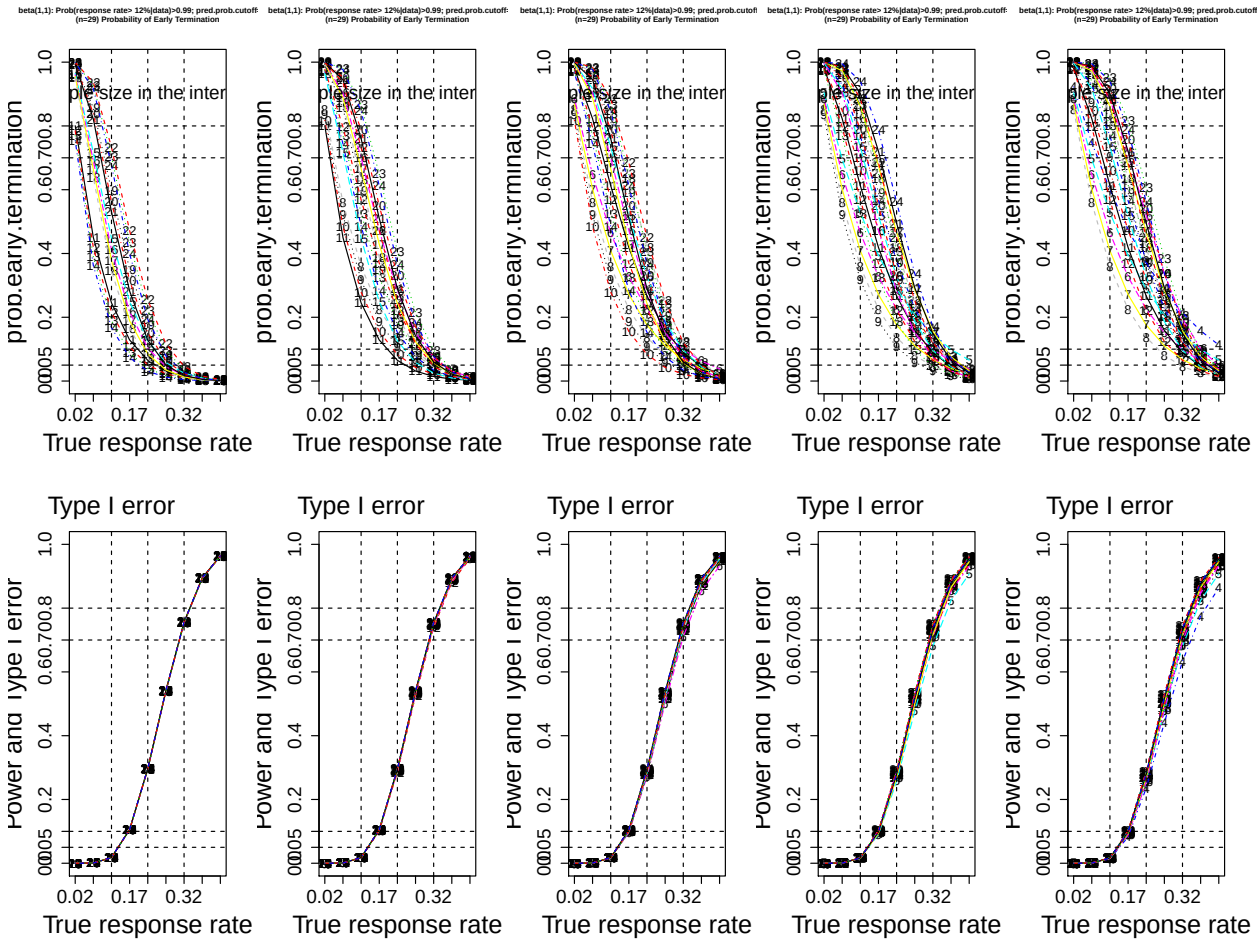

beta(1,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

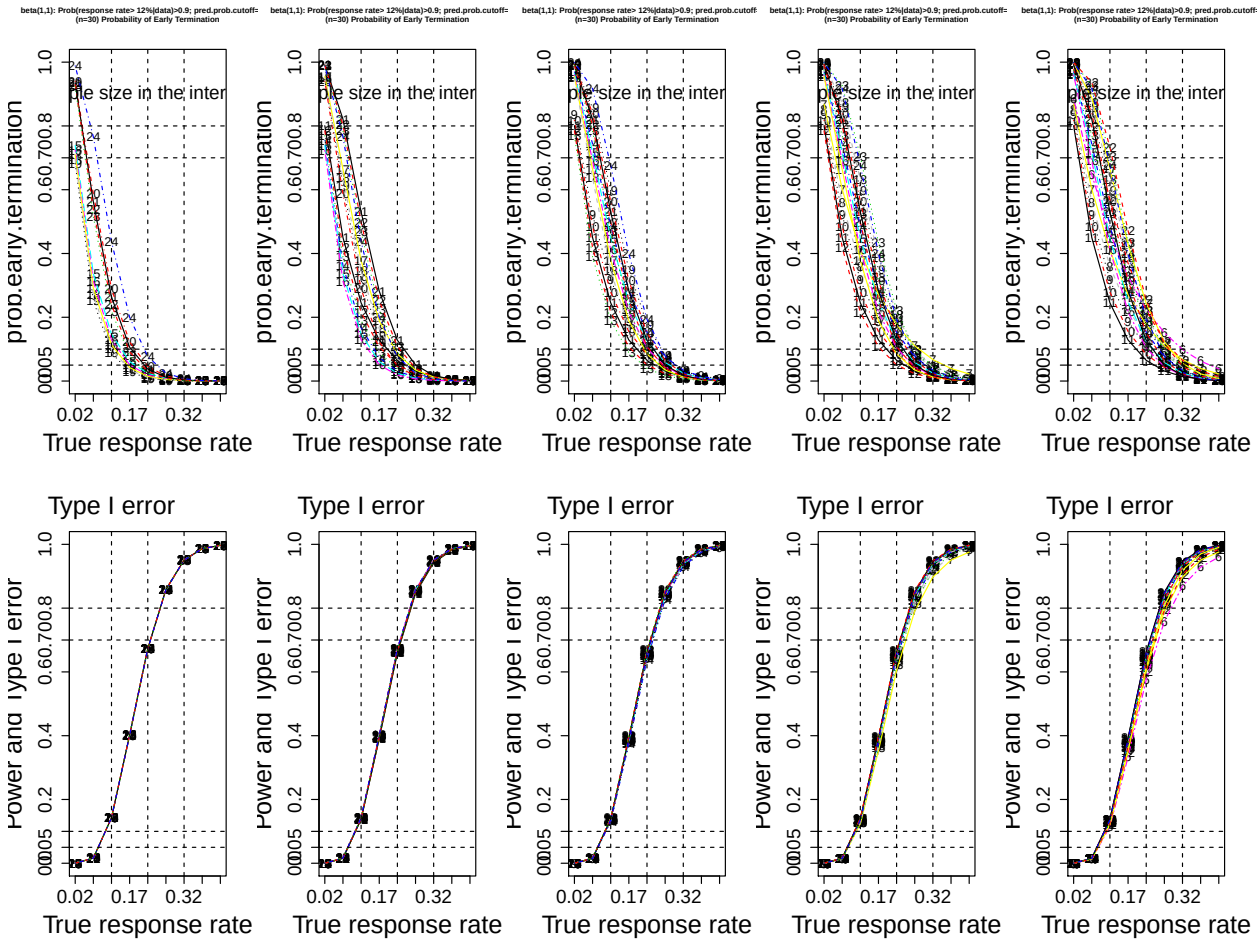

beta(1,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

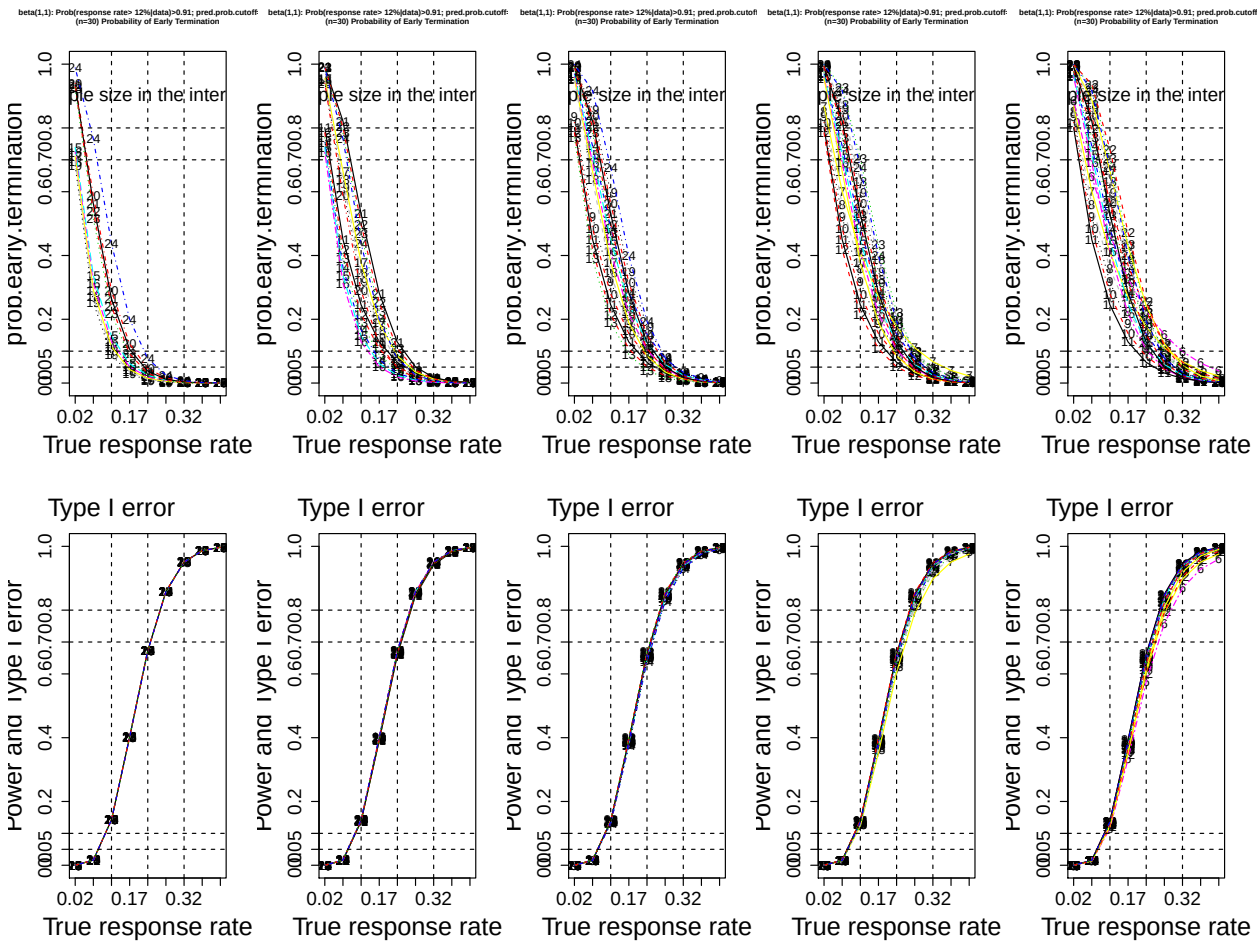

beta(1,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32

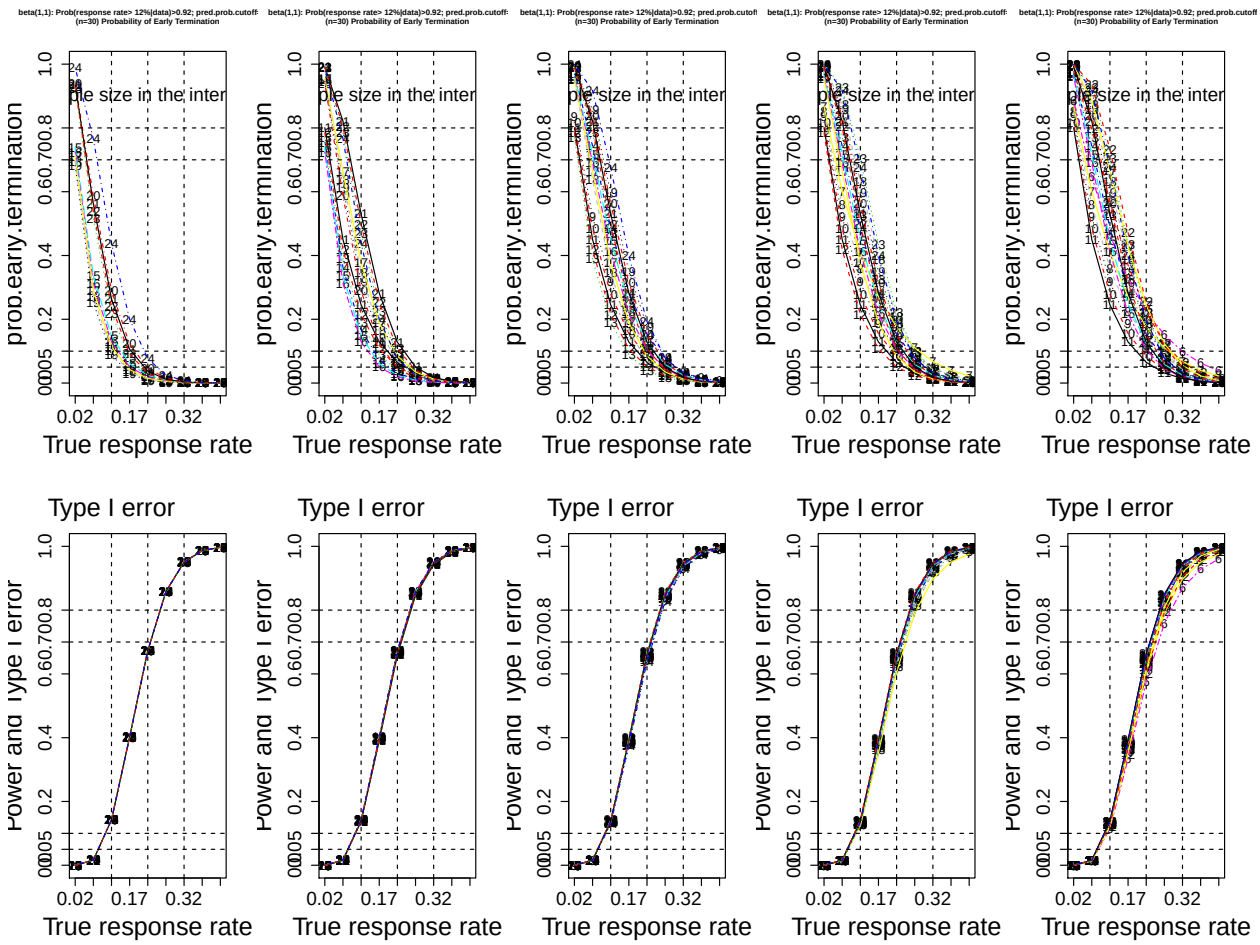

beta(1,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32

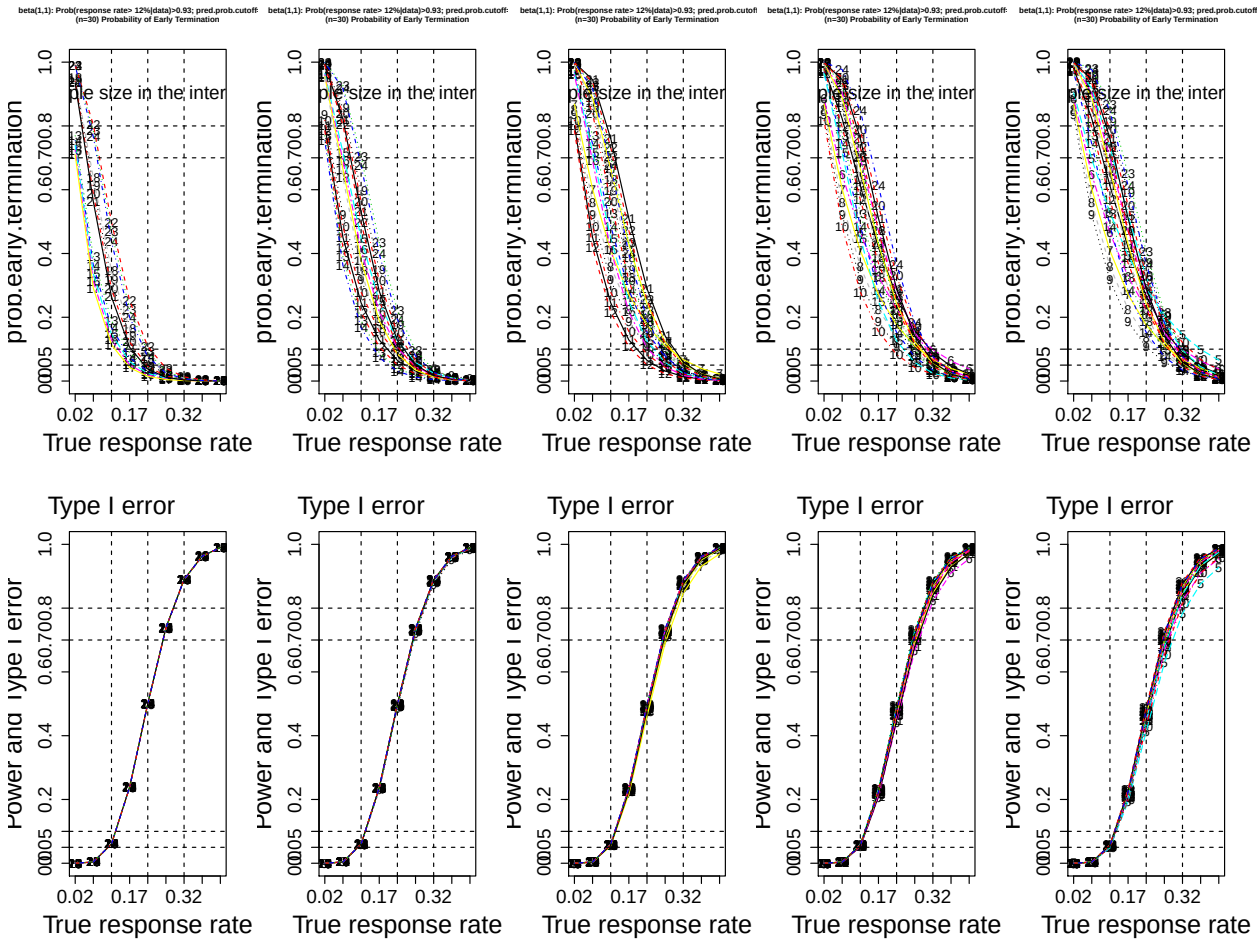

beta(1,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

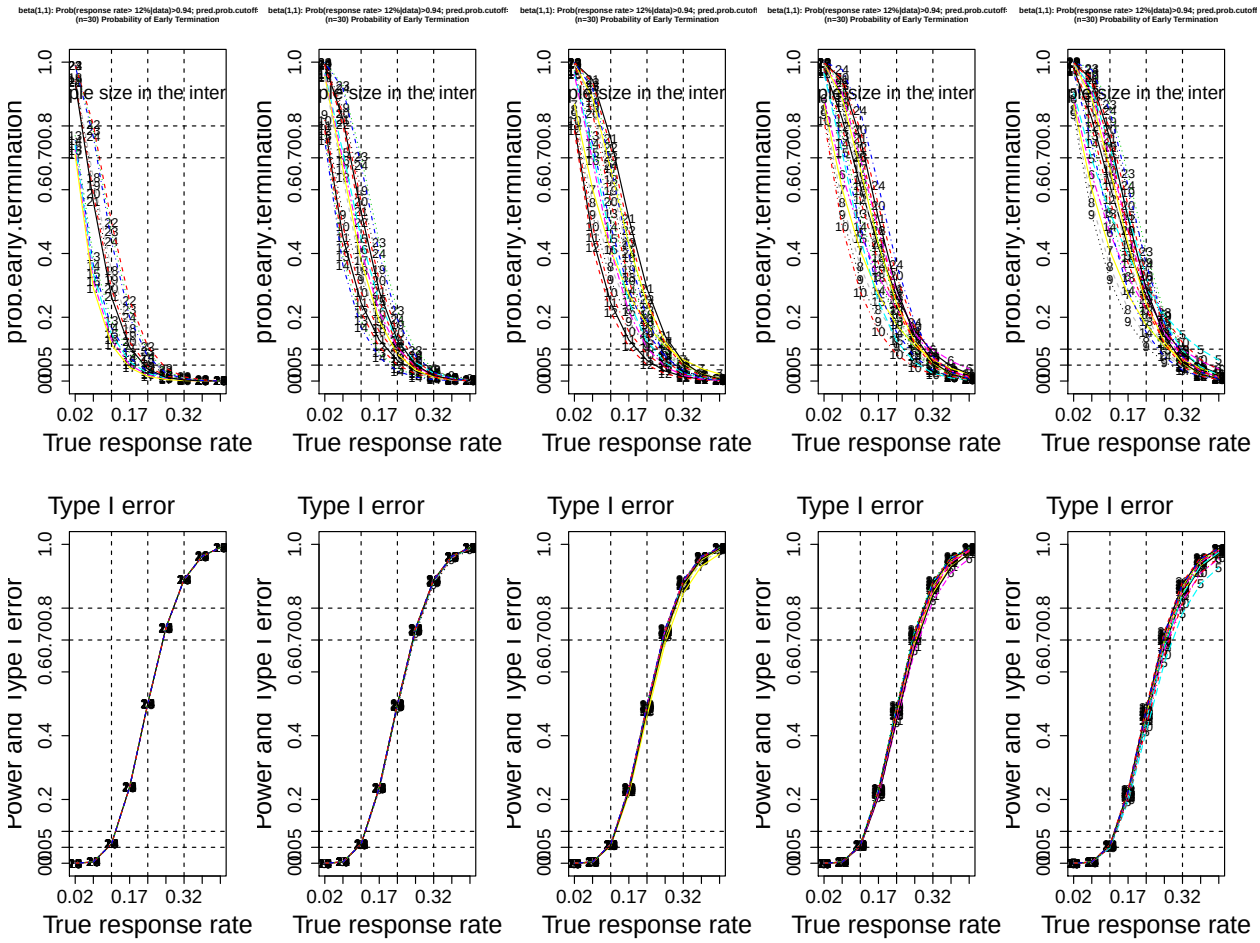

beta(1,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=29) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

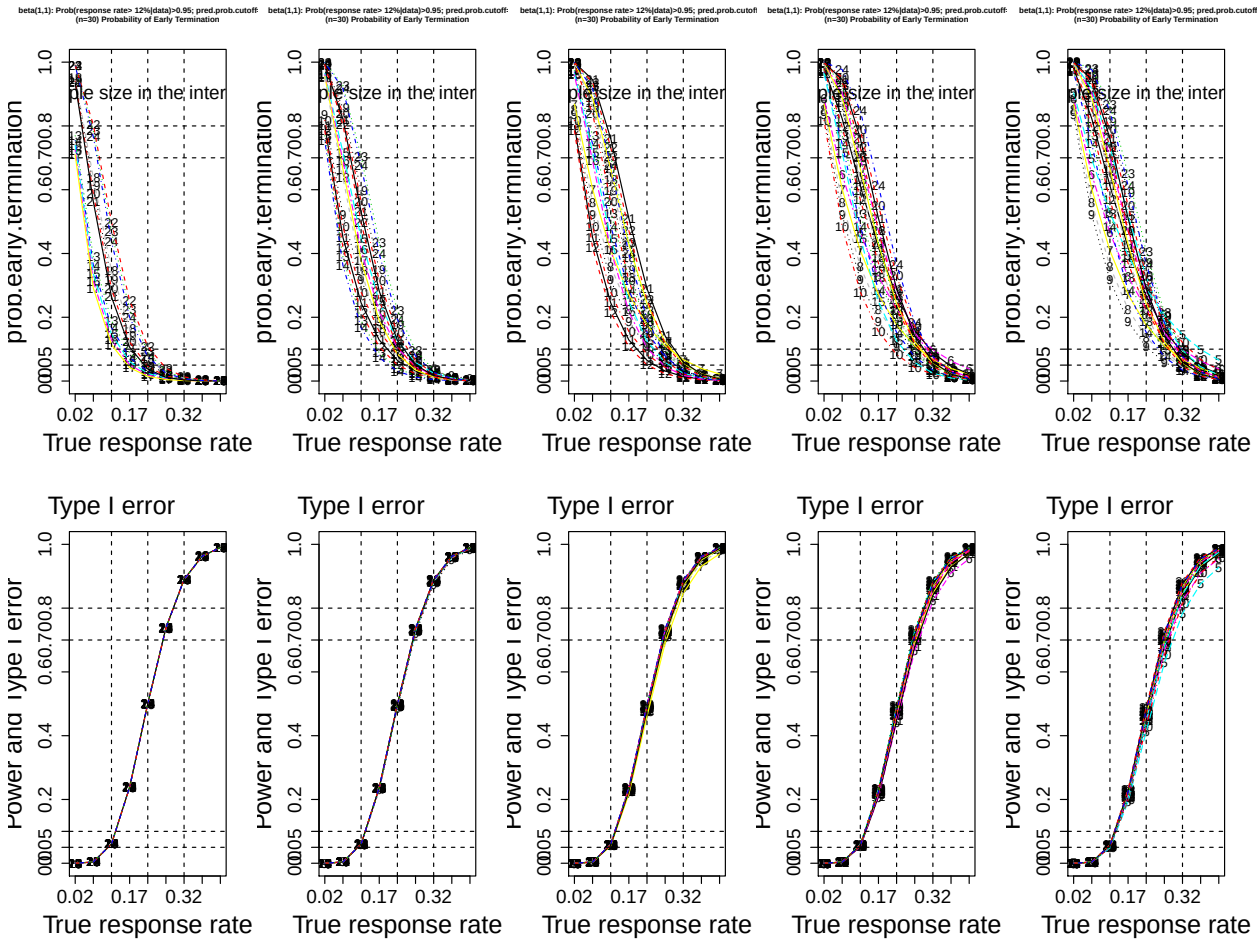

beta(1,1): Prob(response rate> 12%|data)>0.9; pred.prob.cutoff=
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32

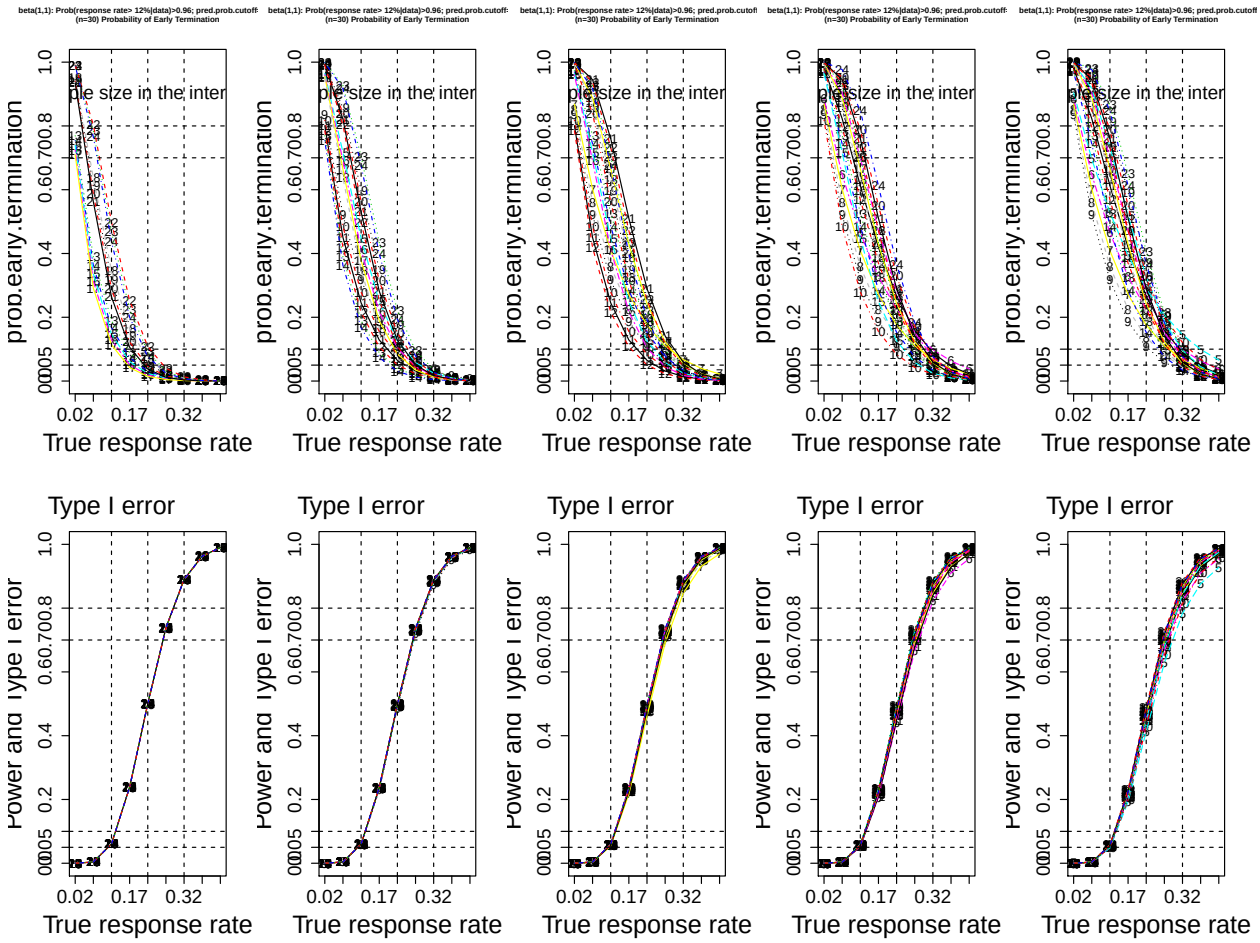

beta(1,1): Prob(response rate> 12%|data)>0.91; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.7
0.8
1.0

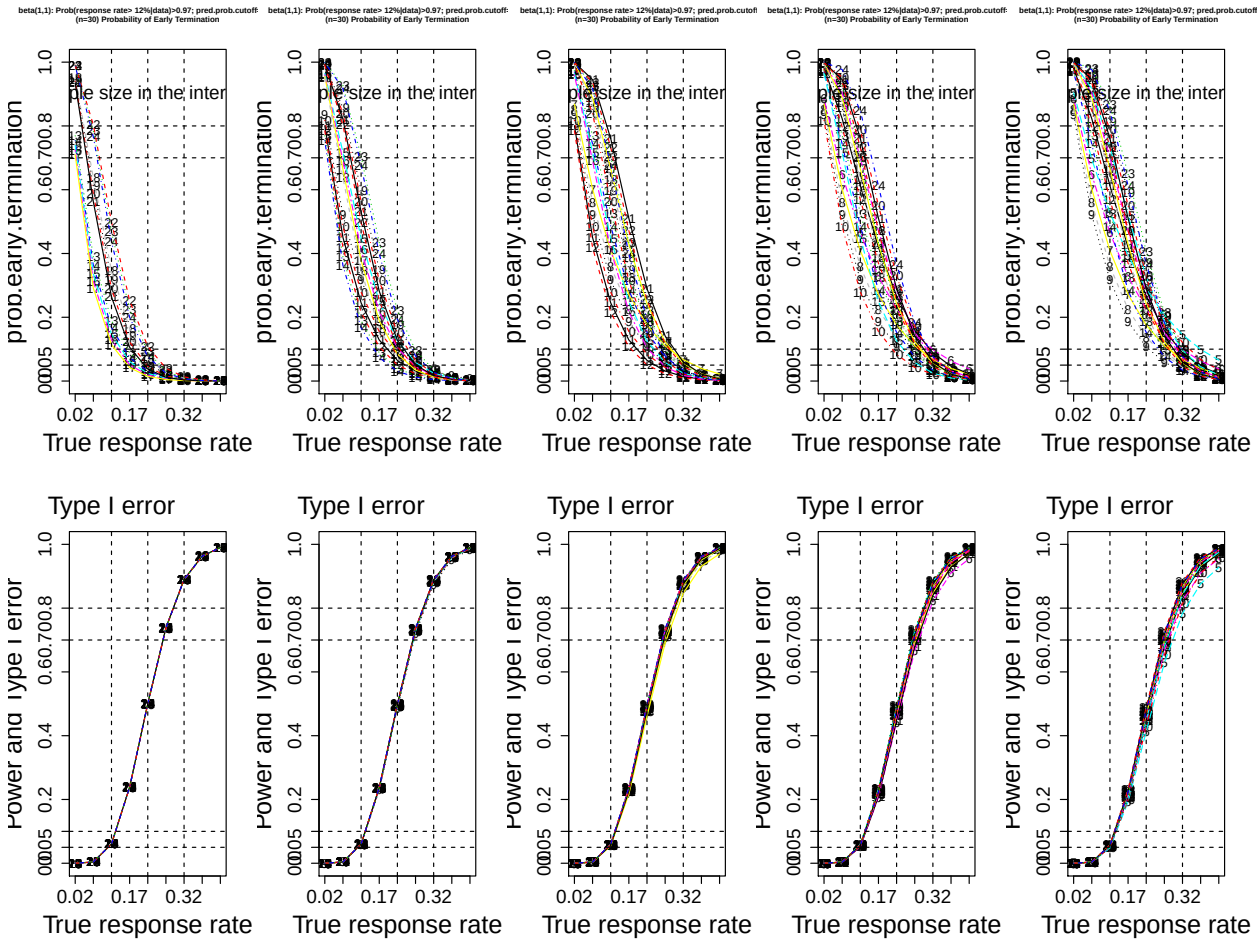

beta(1,1): Prob(response rate> 12%|data)>0.92; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

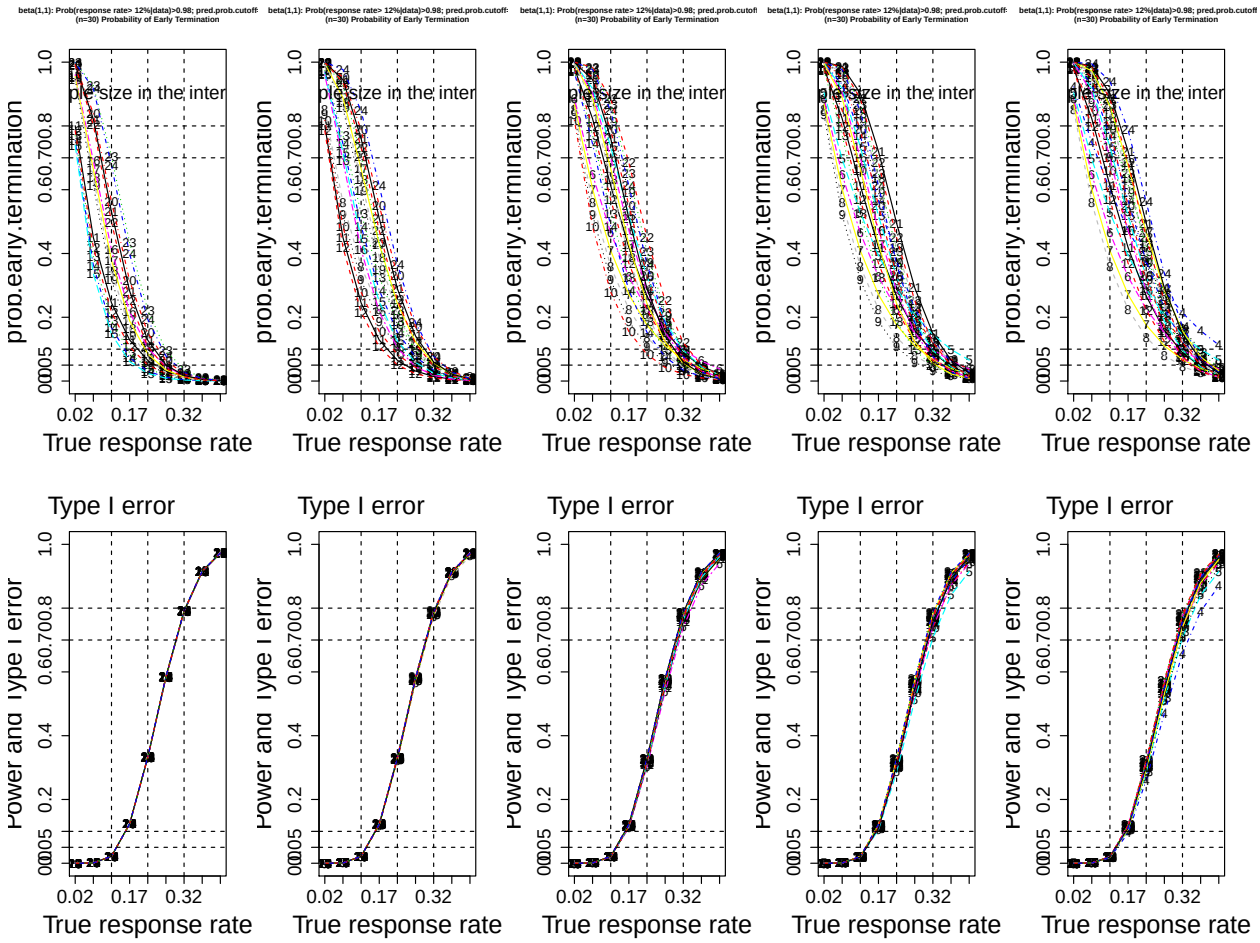

beta(1,1): Prob(response rate> 12%|data)>0.93; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

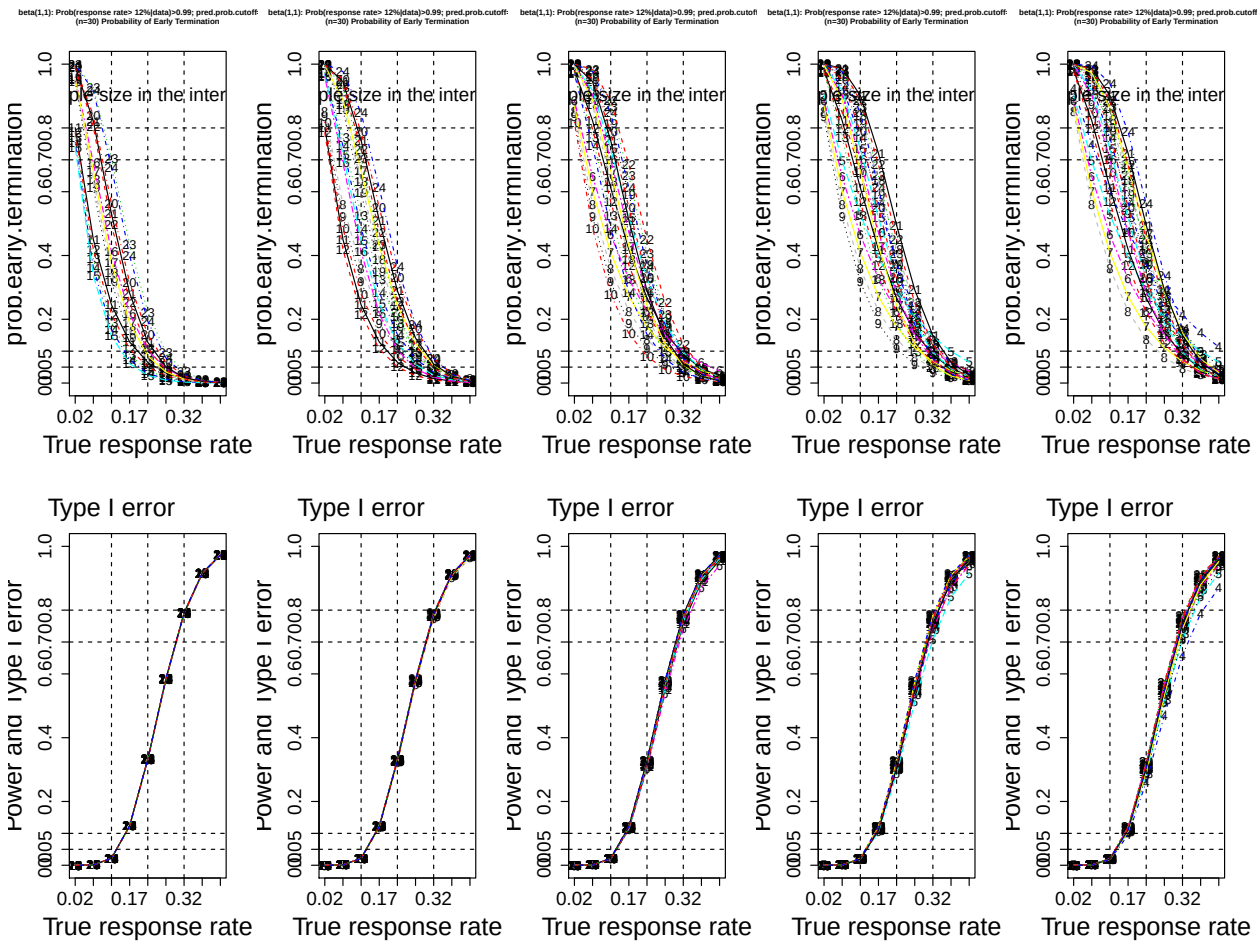

beta(1,1): Prob(response rate> 12%|data)>0.94; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

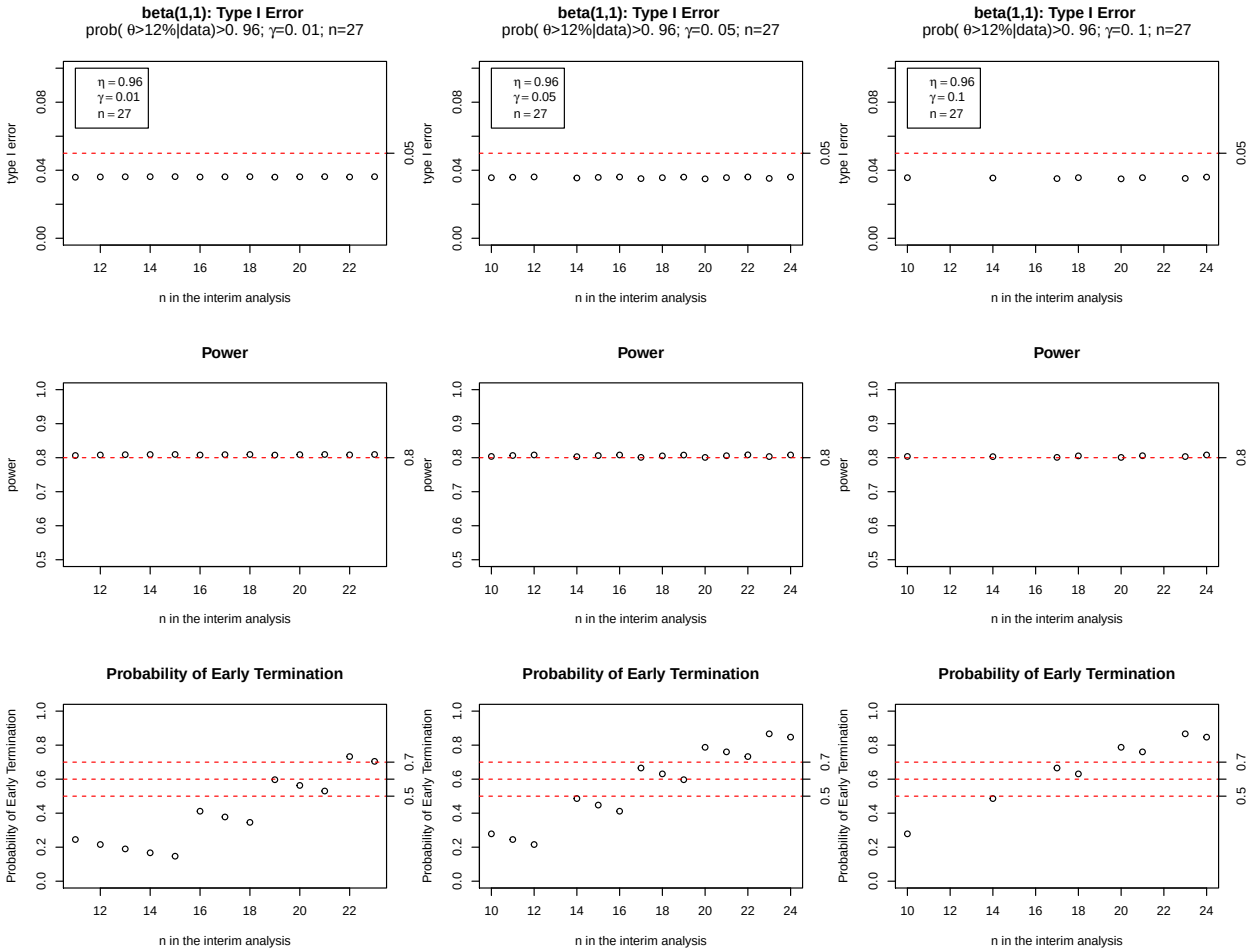

beta(1,1): Prob(response rate> 12%|data)>0.95; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

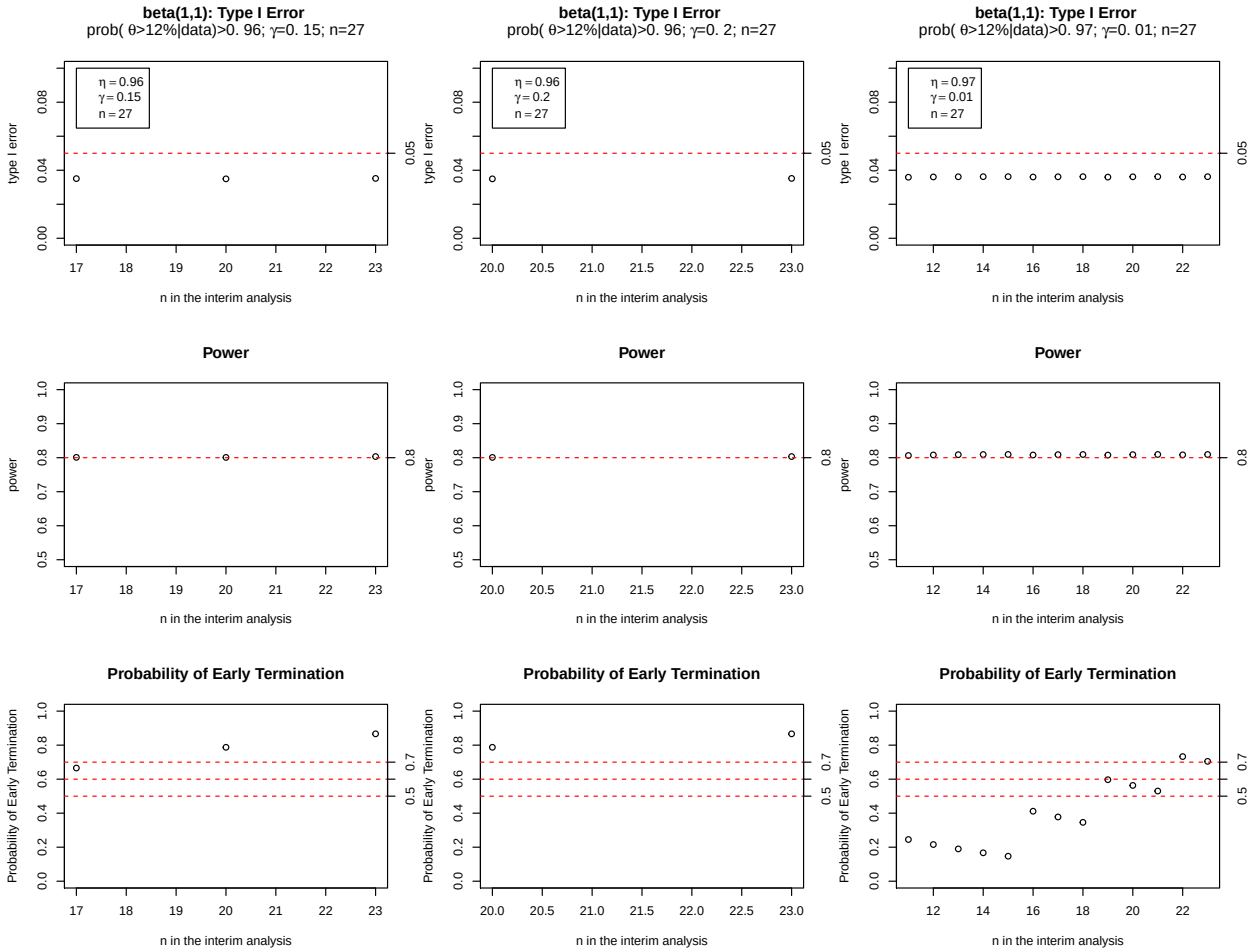

beta(1,1): Prob(response rate> 12%|data)>0.96; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

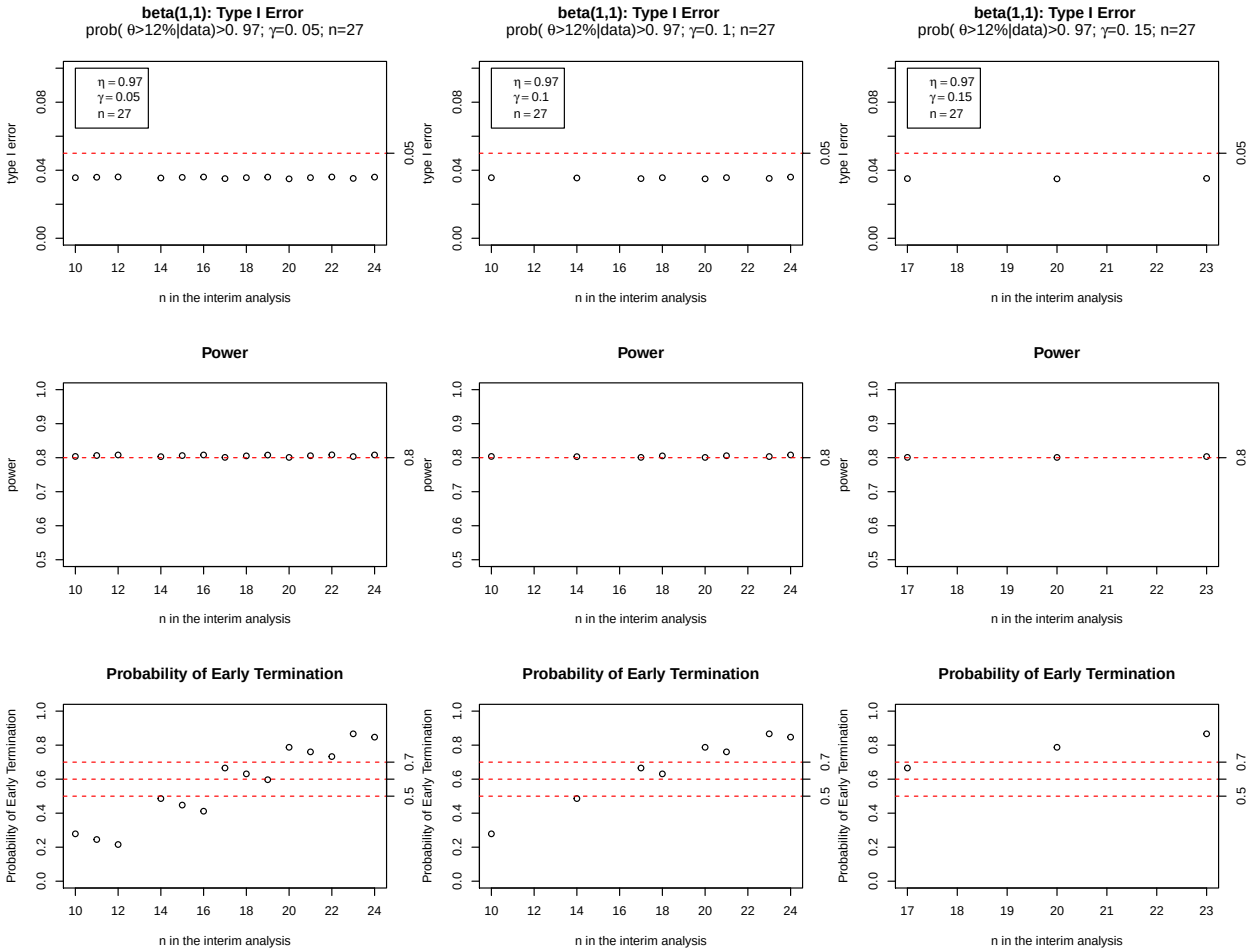

beta(1,1): Prob(response rate> 12%|data)>0.97; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

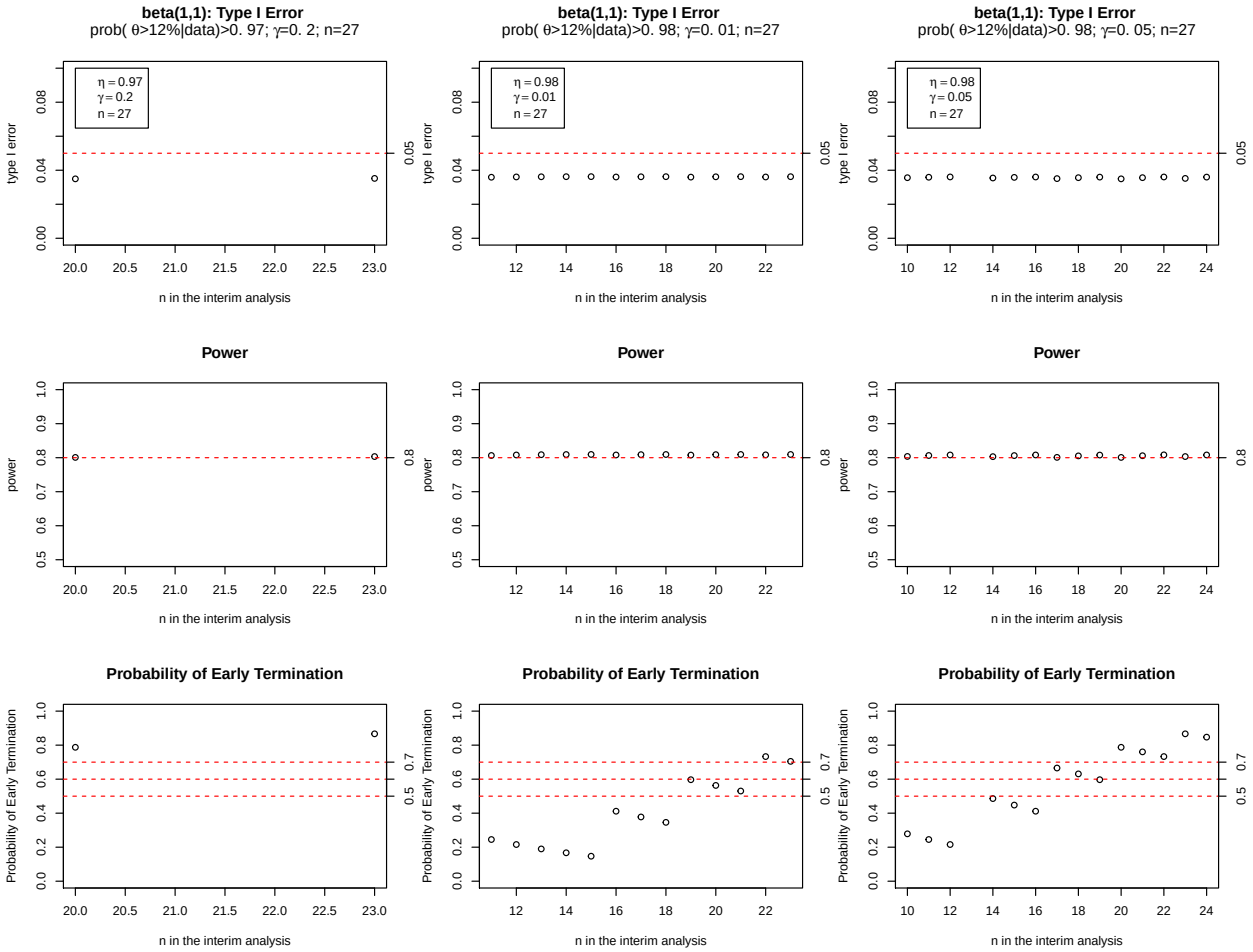

beta(1,1): Prob(response rate> 12%|data)>0.98; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Type I error
Power and Type I error
True response rate
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

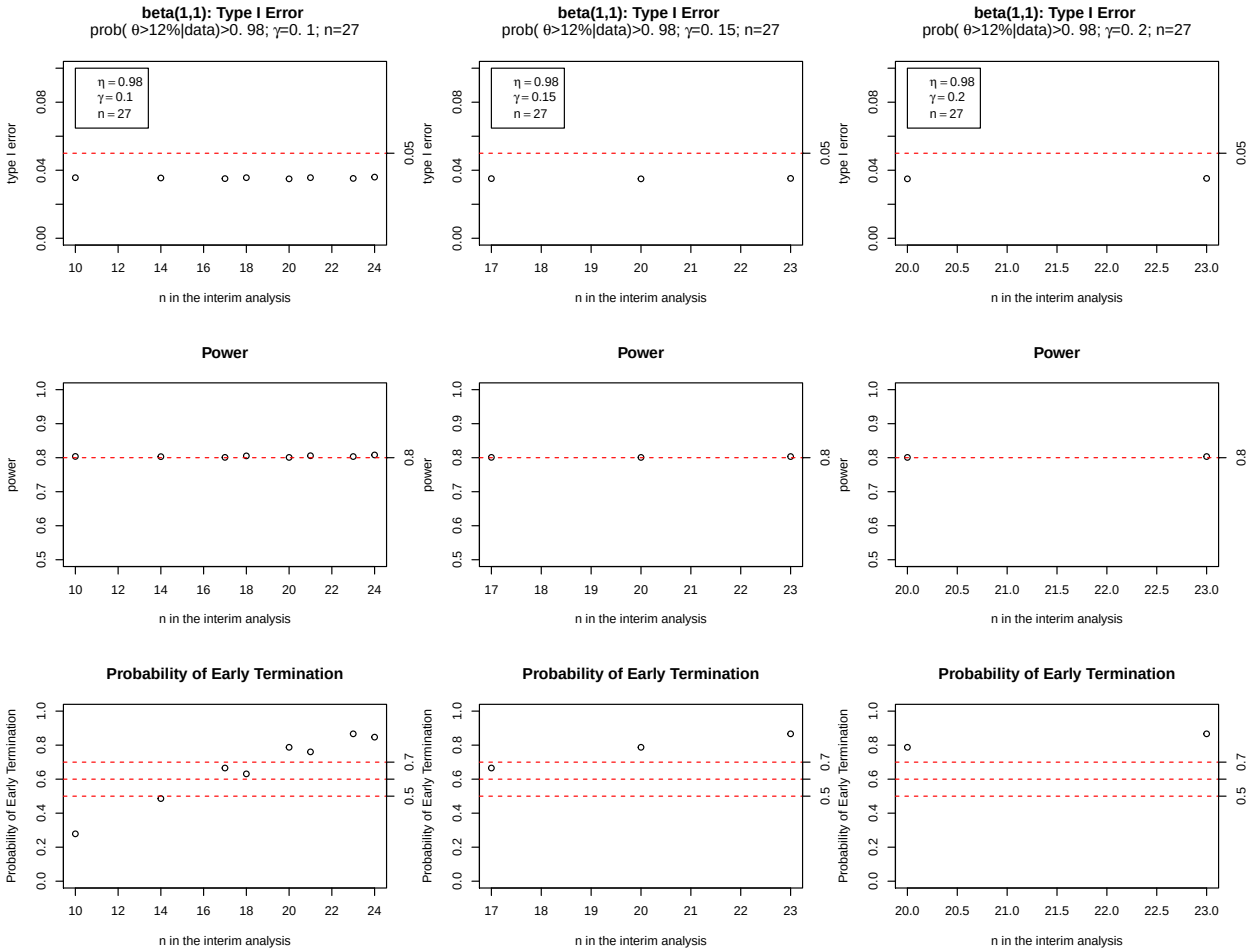

beta(1,1): Prob(response rate> 12%|data)>0.99; pred.prob.cutoff
(n=30) Probability of Early Termination
prob.early.termination
Power and Type I error
True response rate
Type I error
0.02
0.17
0.32
0.0
0.2
0.4
0.6
0.8
1.0

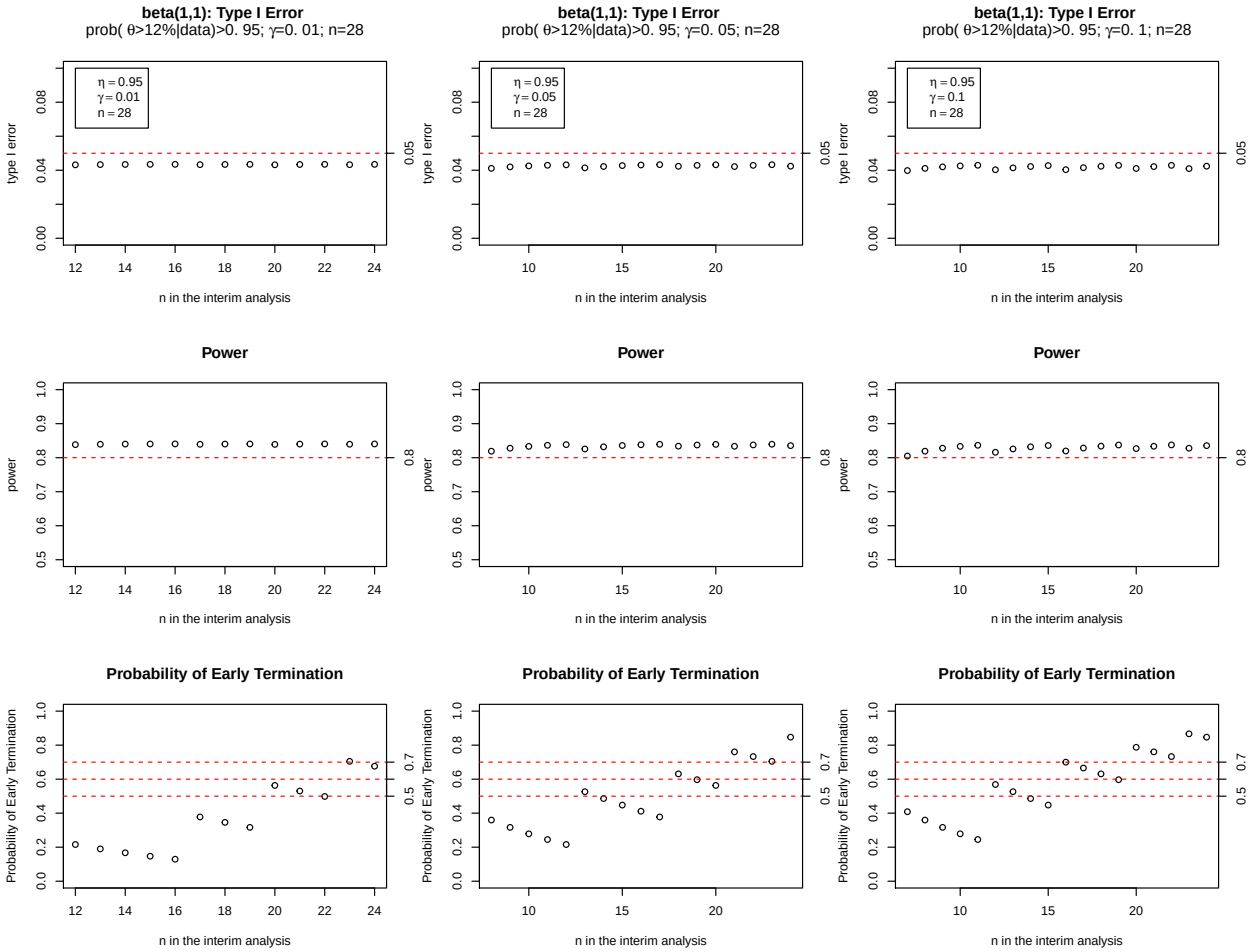

beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 01; n=27
η = 0.96
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 05; n=27
η = 0.96
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 1; n=27
η = 0.96
γ = 0.1
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

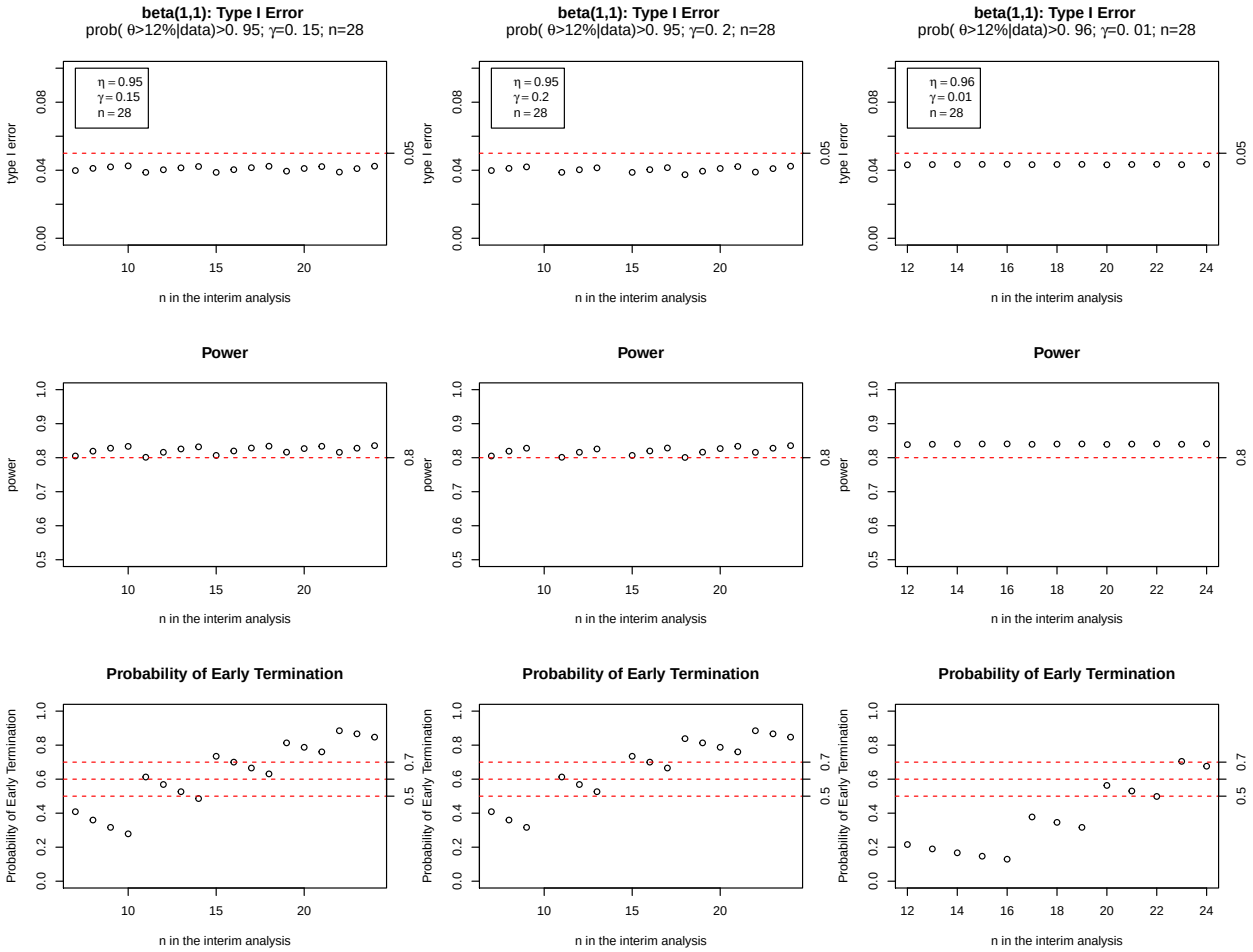

beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 15; n=27
η = 0.96
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=27
η = 0.96
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 01; n=27
η = 0.97
γ = 0.01
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

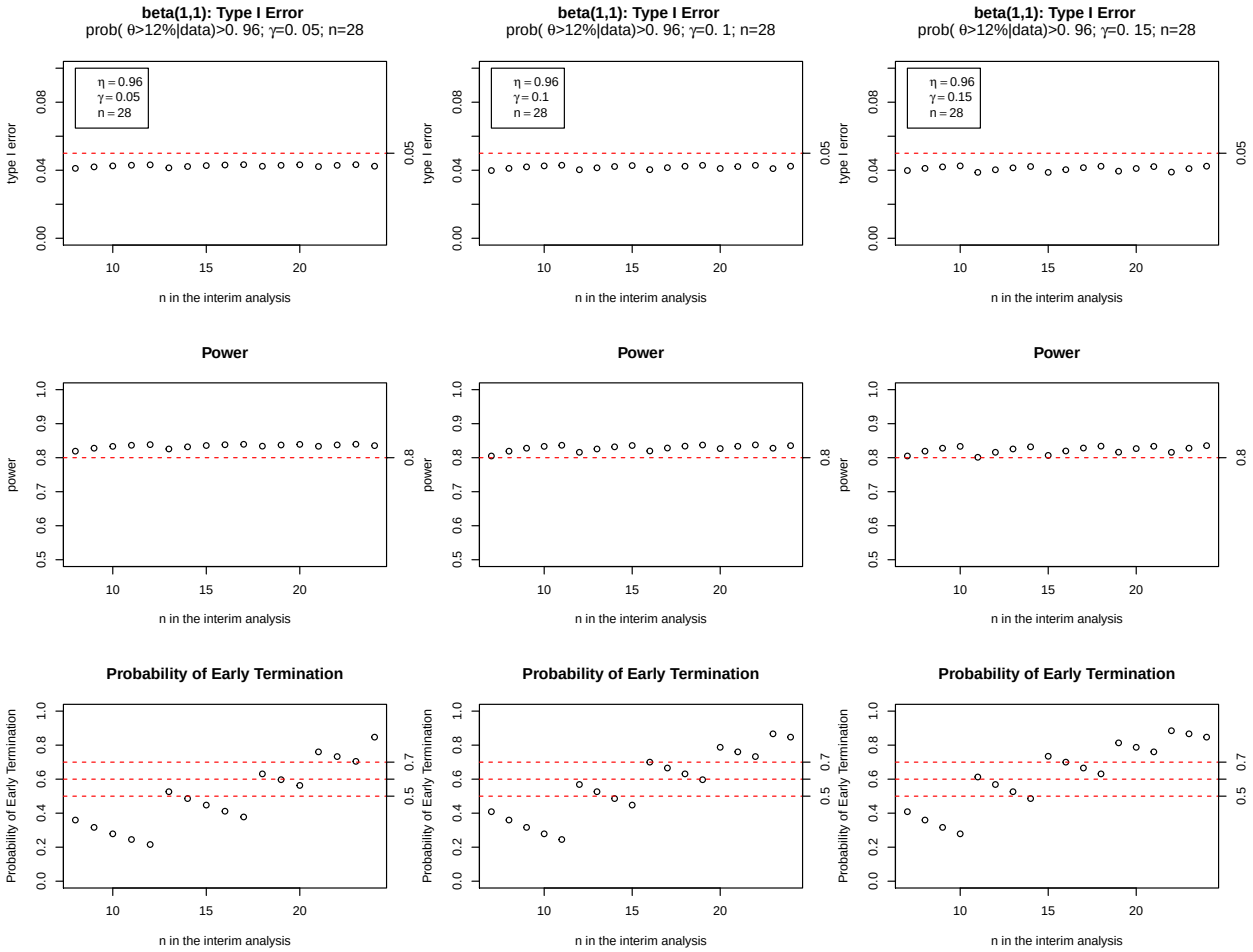

beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 05; n=27
η = 0.97
γ = 0.05
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 1; n=27
η = 0.97
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 15; n=27
η = 0.97
γ = 0.15
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

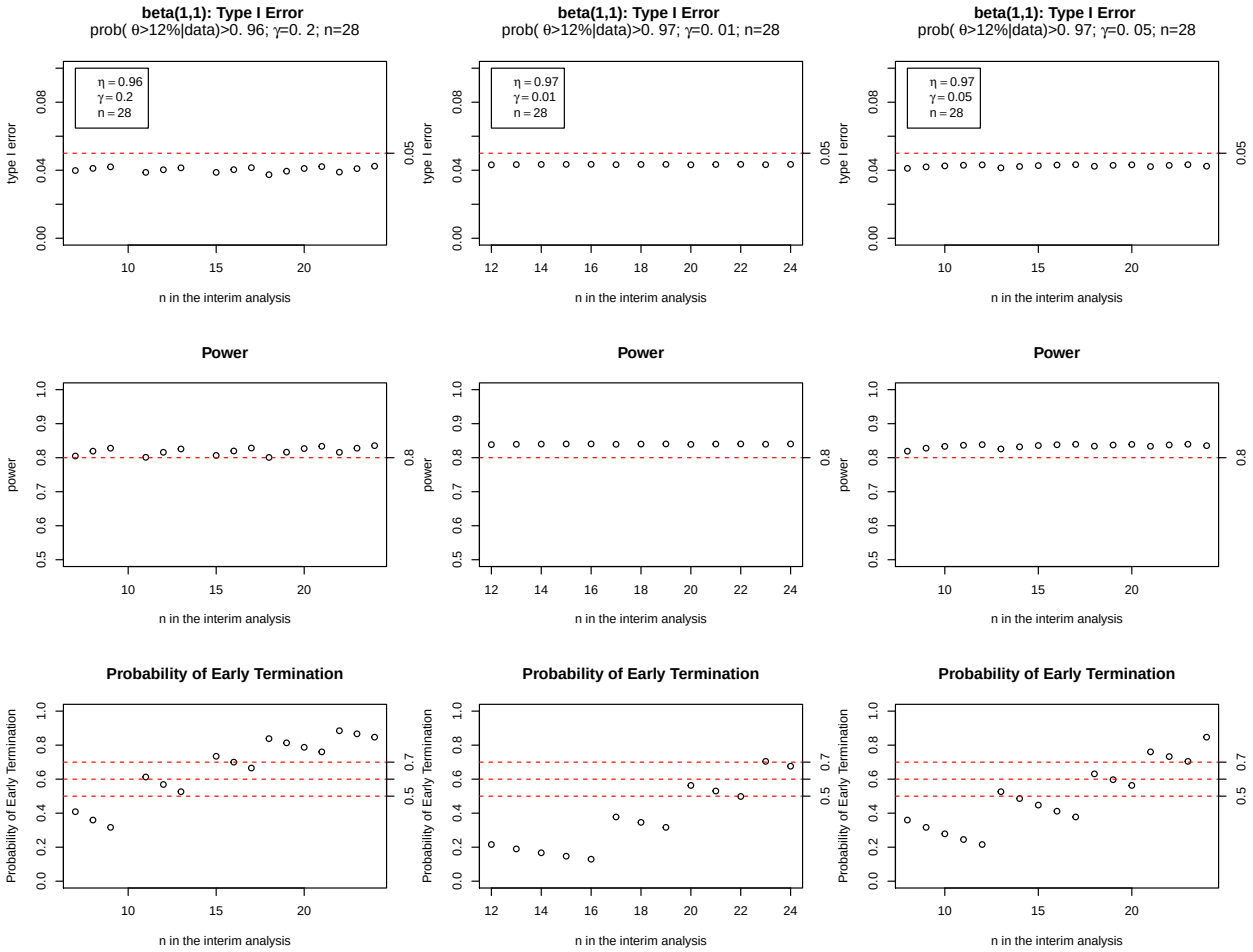

beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 2; n=27
η = 0.97
γ = 0.2
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 01; n=27
η = 0.98
γ = 0.01
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 05; n=27
η = 0.98
γ = 0.05
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

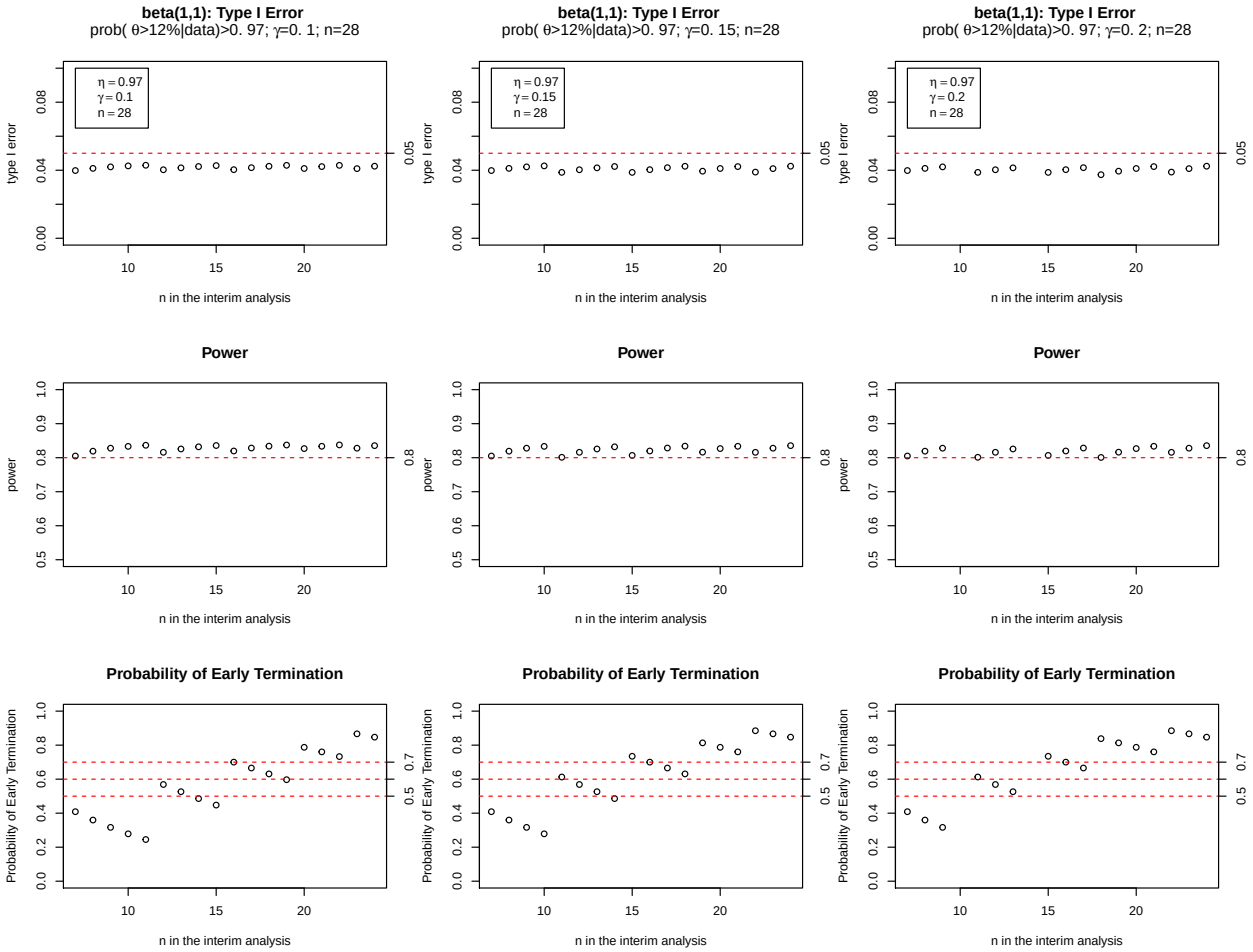

beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 1; n=27
η = 0.98
γ = 0.1
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 15; n=27
η = 0.98
γ = 0.15
n = 27
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 2; n=27
η = 0.98
γ = 0.2
n = 27
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

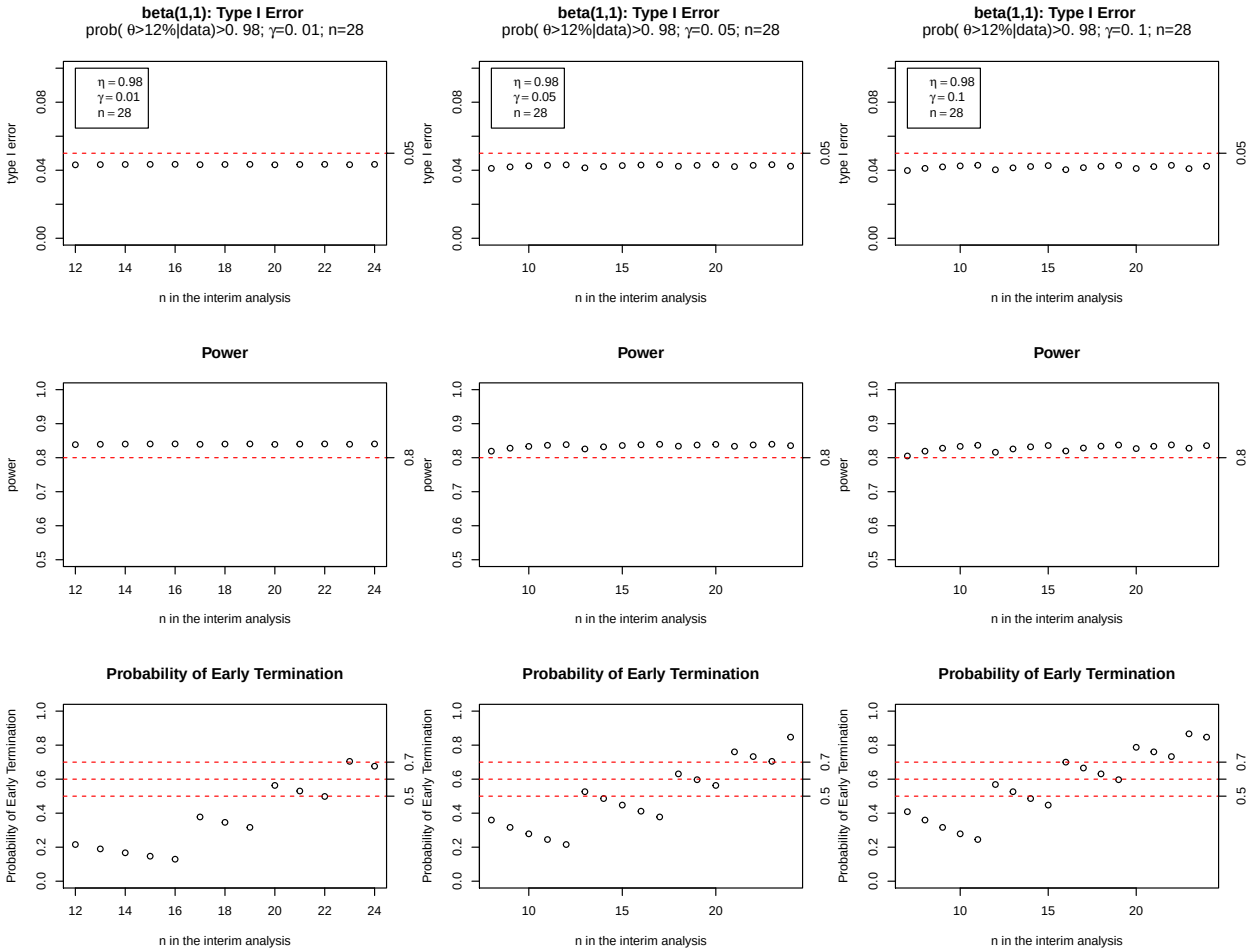

beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 01; n=28
η = 0.95
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=28
η = 0.95
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=28
η = 0.95
γ = 0.1
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

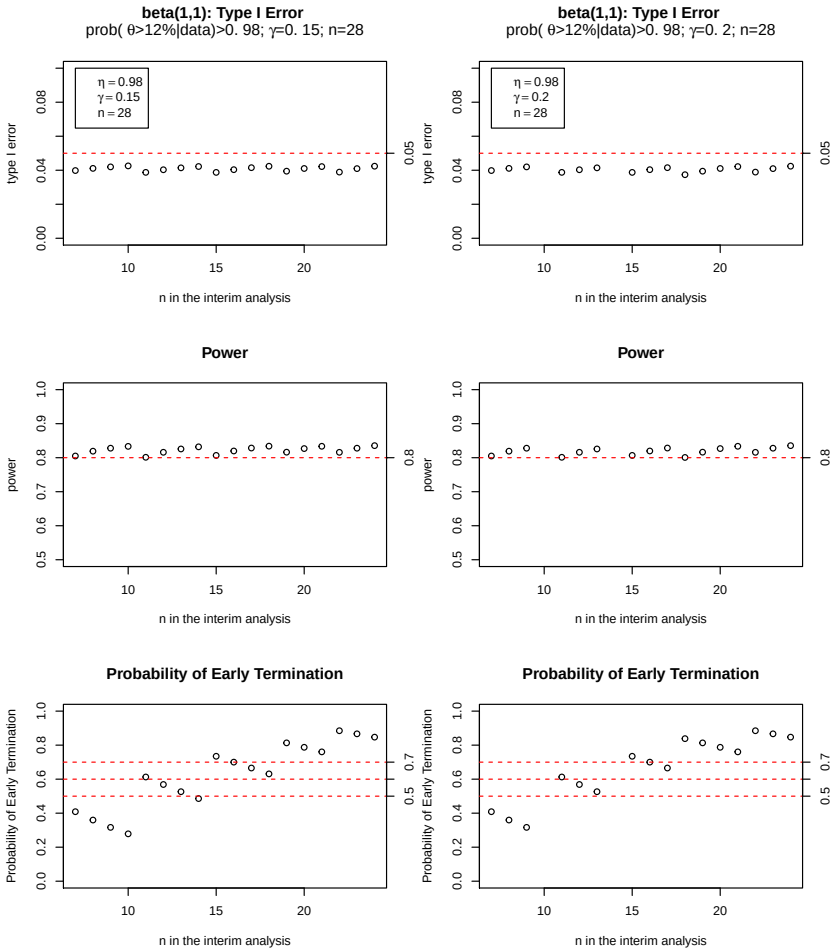

beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=28
η = 0.95
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=28
η = 0.95
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 01; n=28
η = 0.96
γ = 0.01
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

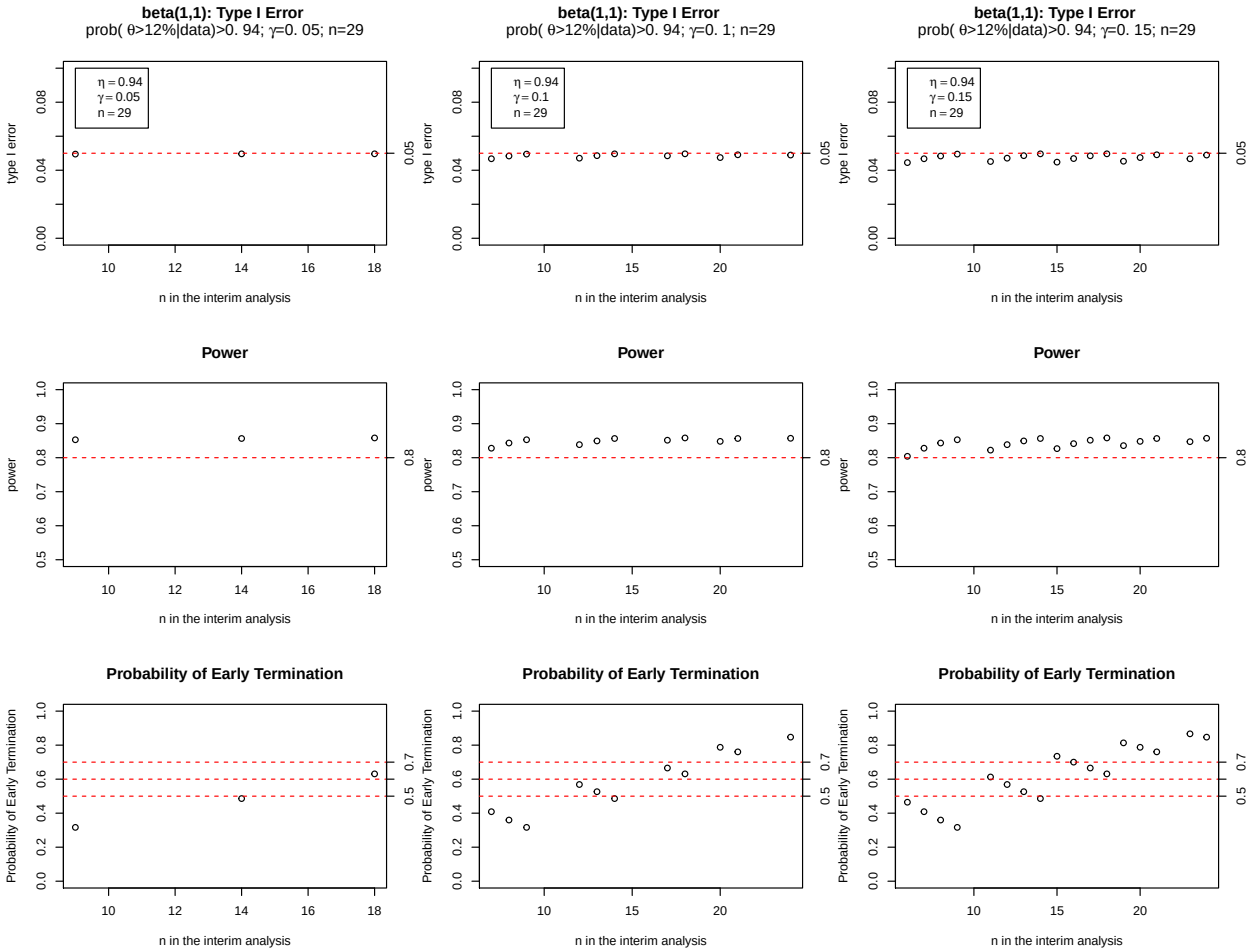

beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 05; n=28
η = 0.96
γ = 0.05
n = 28
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 1; n=28
η = 0.96
γ = 0.1
n = 28
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 15; n=28
η = 0.96
γ = 0.15
n = 28
type I error
Power
power
Probability of Early Termination
n in the interim analysis

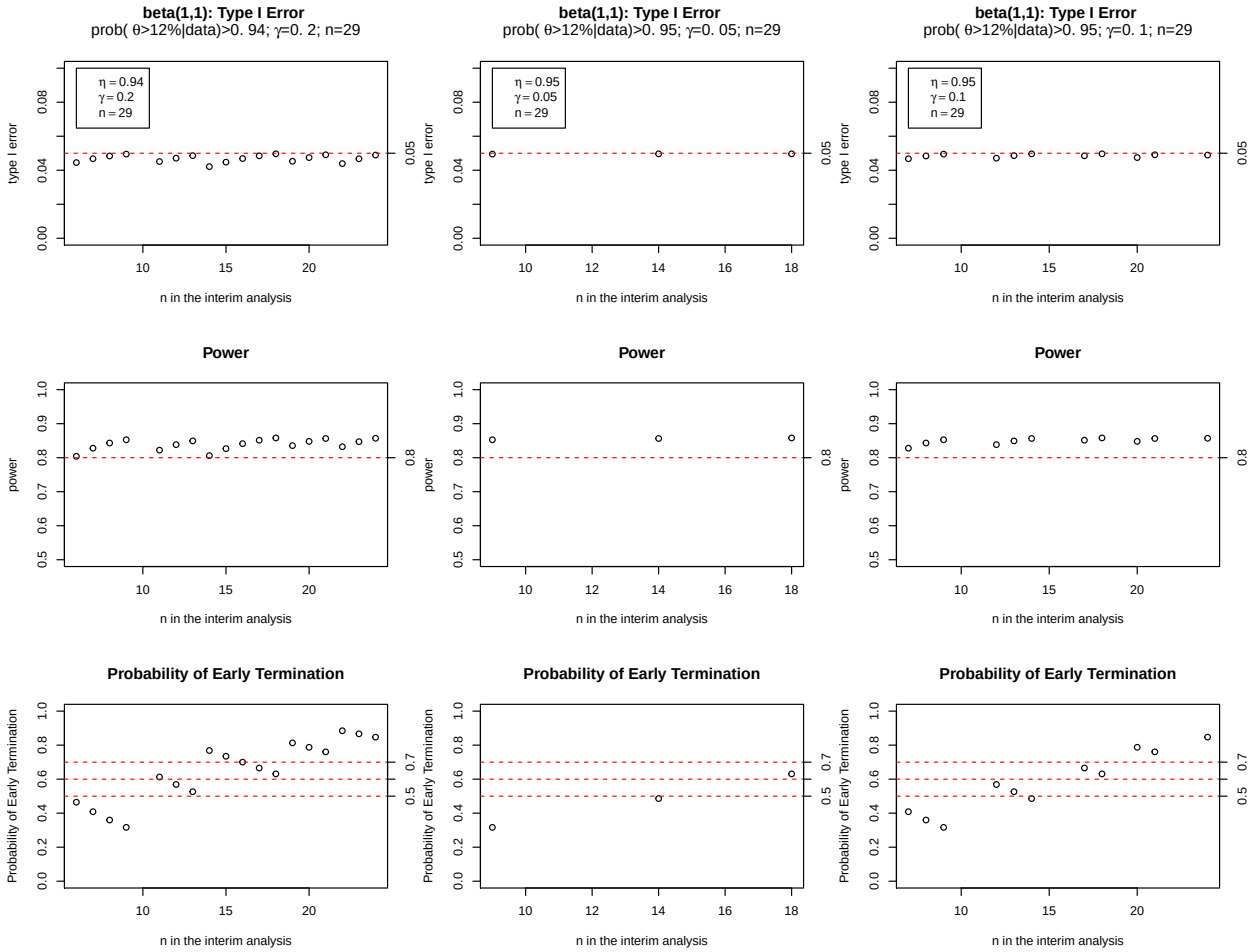

beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=28
η = 0.96
γ = 0.2
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 01; n=28
η = 0.97
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 05; n=28
η = 0.97
γ = 0.05
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

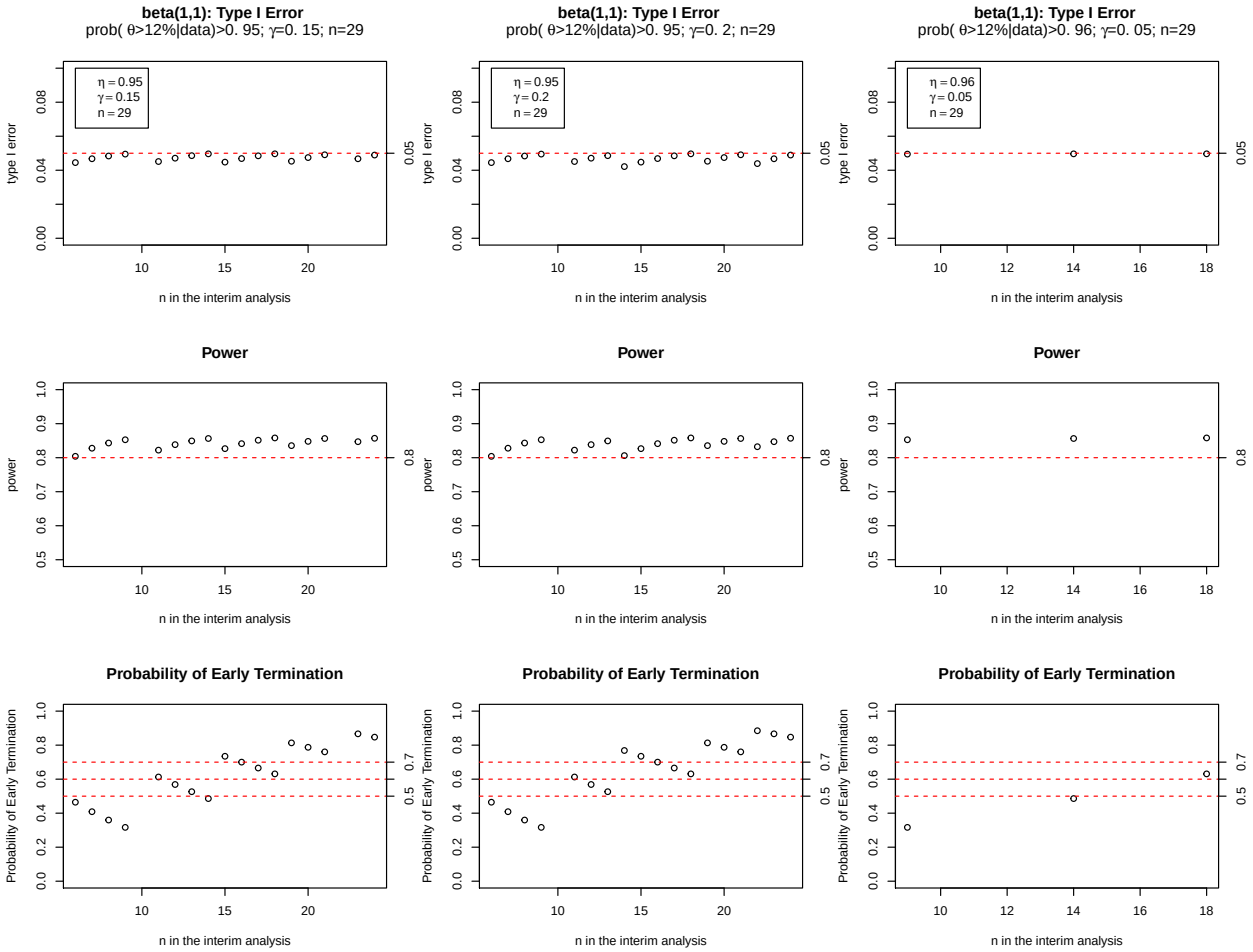

beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 1; n=28
η = 0.97
γ = 0.1
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 15; n=28
η = 0.97
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 2; n=28
η = 0.97
γ = 0.2
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

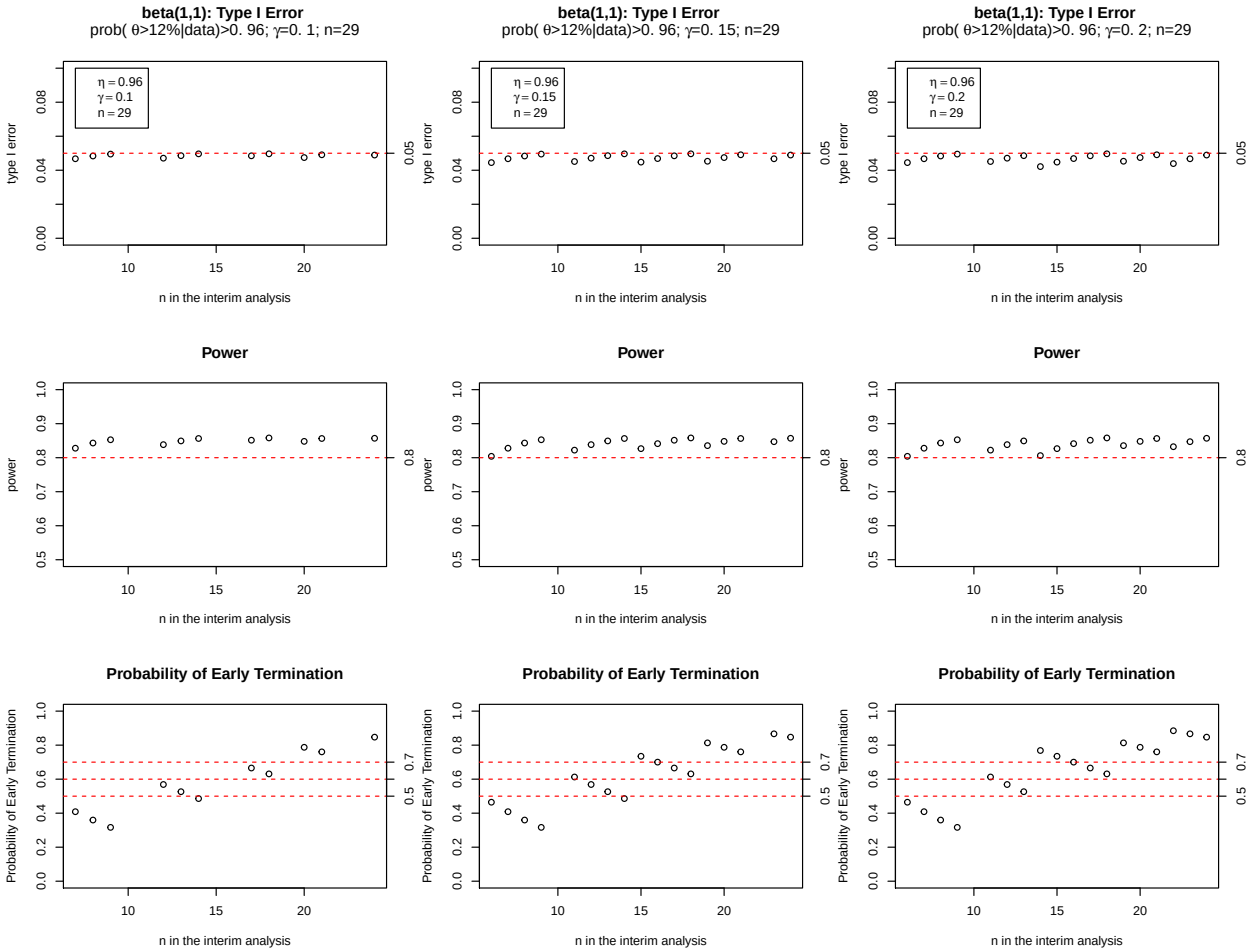

beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 01; n=28
η = 0.98
γ = 0.01
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 05; n=28
η = 0.98
γ = 0.05
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 1; n=28
η = 0.98
γ = 0.1
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

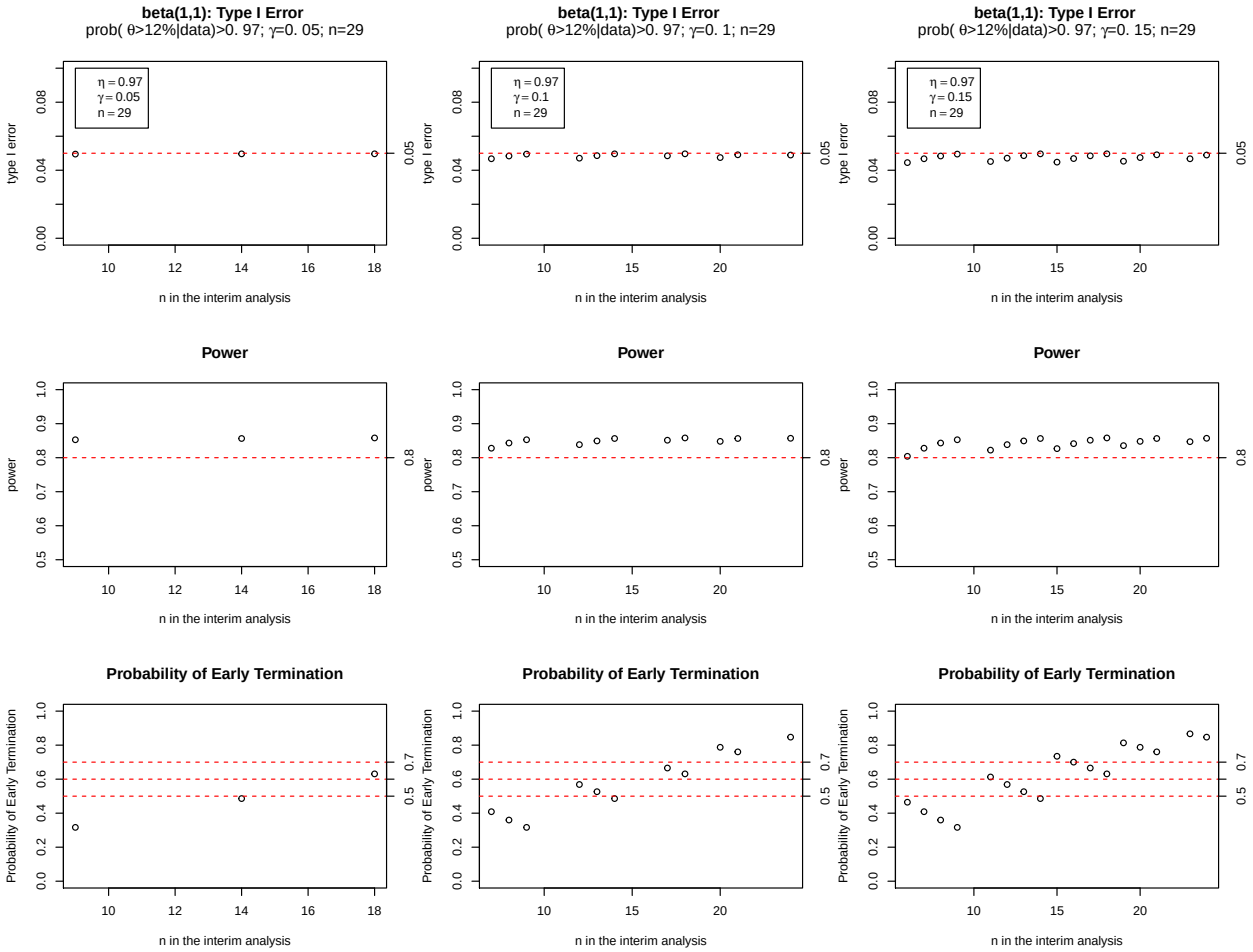

beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 15; n=28
η = 0.98
γ = 0.15
n = 28
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 98; γ=0. 2; n=28
η = 0.98
γ = 0.2
n = 28
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

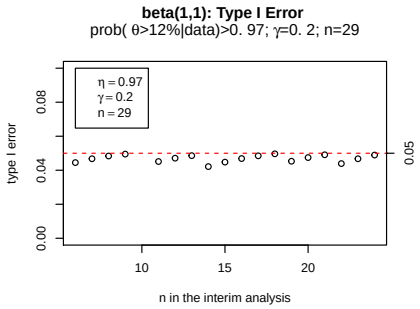

beta(1,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 05; n=29
η = 0.94
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 1; n=29
η = 0.94
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 15; n=29
η = 0.94
γ = 0.15
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

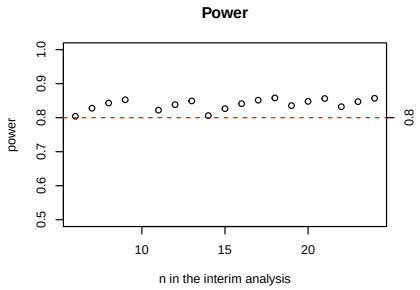

beta(1,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=29
η = 0.94
γ = 0.2
n = 29
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 05; n=29
η = 0.95
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 1; n=29
η = 0.95
γ = 0.1
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

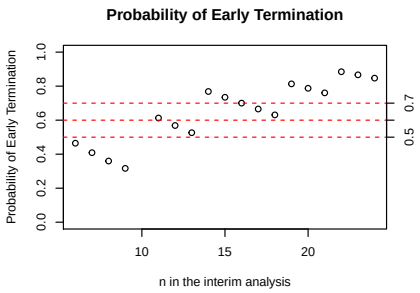

beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 15; n=29
η = 0.95
γ = 0.15
n = 29
beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=29
η = 0.95
γ = 0.2
n = 29
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 05; n=29
η = 0.96
γ = 0.05
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

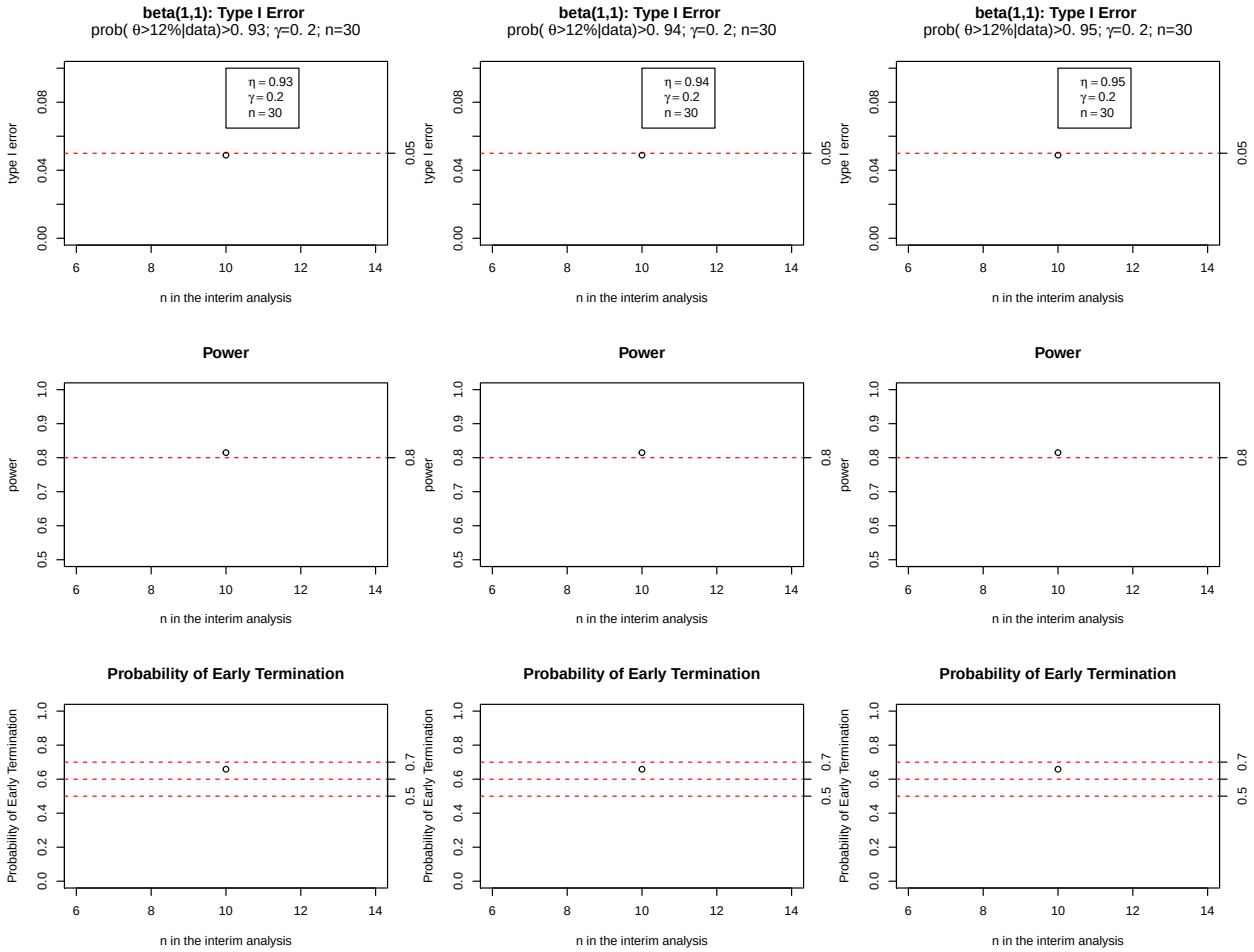

beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 1; n=29
η = 0.96
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 15; n=29
η = 0.96
γ = 0.15
n = 29
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=29
η = 0.96
γ = 0.2
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis

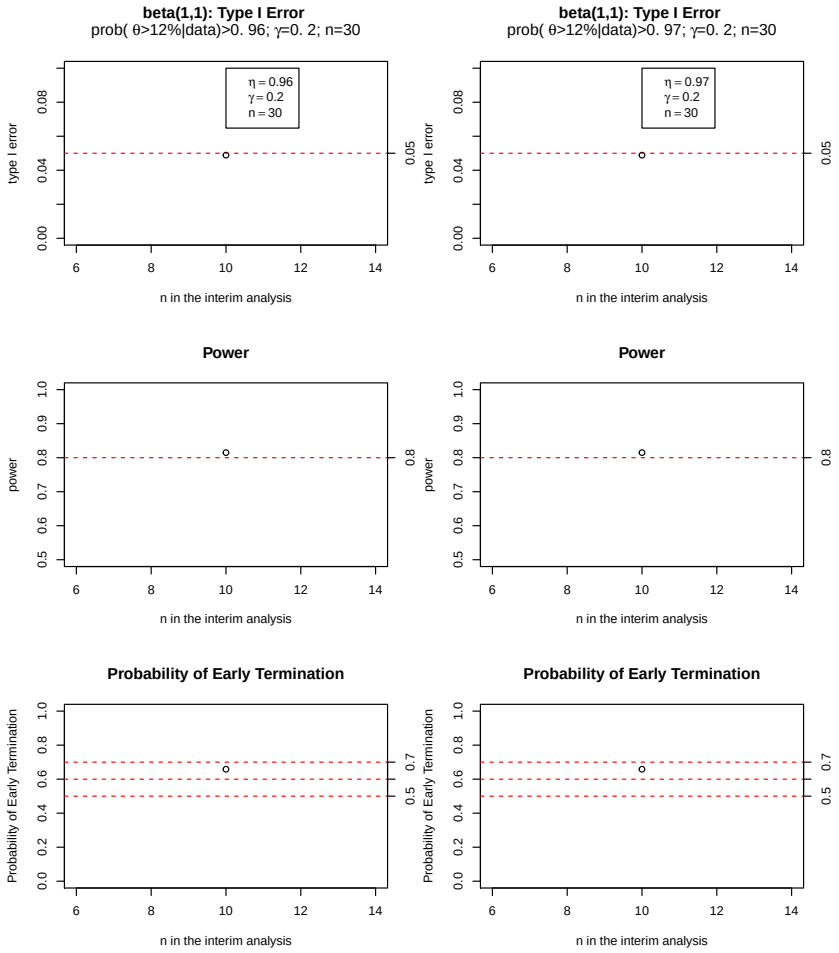

beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 05; n=29
η = 0.97
γ = 0.05
n = 29
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 1; n=29
η = 0.97
γ = 0.1
n = 29
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 15; n=29
η = 0.97
γ = 0.15
n = 29
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis


beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 2; n=29
η = 0.97
γ = 0.2
n = 29
type I error
0.00
0.04
0.08
0.05
10
15
20
n in the interim analysis


Power
power
0.5
0.6
0.7
0.8
0.9
1.0
0.8
10
15
20
n in the interim analysis


Probability of Early Termination
Probability of Early Termination
0.0
0.2
0.4
0.6
0.8
1.0
0.7
0.5
10
15
20
n in the interim analysis


beta(1,1): Type I Error
prob(θ>12%|data)>0. 93; γ=0. 2; n=30
η = 0.93
γ = 0.2
n = 30
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 94; γ=0. 2; n=30
η = 0.94
γ = 0.2
n = 30
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 95; γ=0. 2; n=30
η = 0.95
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis


beta(1,1): Type I Error
prob(θ>12%|data)>0. 96; γ=0. 2; n=30
η = 0.96
γ = 0.2
n = 30
type I error
n in the interim analysis
beta(1,1): Type I Error
prob(θ>12%|data)>0. 97; γ=0. 2; n=30
η = 0.97
γ = 0.2
n = 30
type I error
n in the interim analysis
Power
power
n in the interim analysis
Power
power
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis
Probability of Early Termination
Probability of Early Termination
n in the interim analysis