Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.8305	0.8143	0.8590	0.6829	0.5310
Q2 1st order poly. trend	0.8393	0.8214	0.8672	0.7743	0.8459
RMSE constant trend	0.0030	0.0030	0.0030	0.0030	0.0030
RMSE 1st order poly. trend	0.0018	0.0018	0.0018	0.0018	0.0018
MAE constant trend	0.0024	0.0024	0.0024	0.0024	0.0024
MAE 1st order poly. trend	0.0014	0.0014	0.0014	0.0014	0.0014
RMA constant trend	2.3340	2.3340	2.3340	2.3340	2.3340
RMA 1st order poly. trend	1.4694	1.4694	1.4694	1.4694	1.4694

Q2: cross validation Q2 (higher is better)
RMSE/MAE/RMA: external validation RMSE/MAE/RMA (lower is better)

Kriging meta−model estimation (standardized)

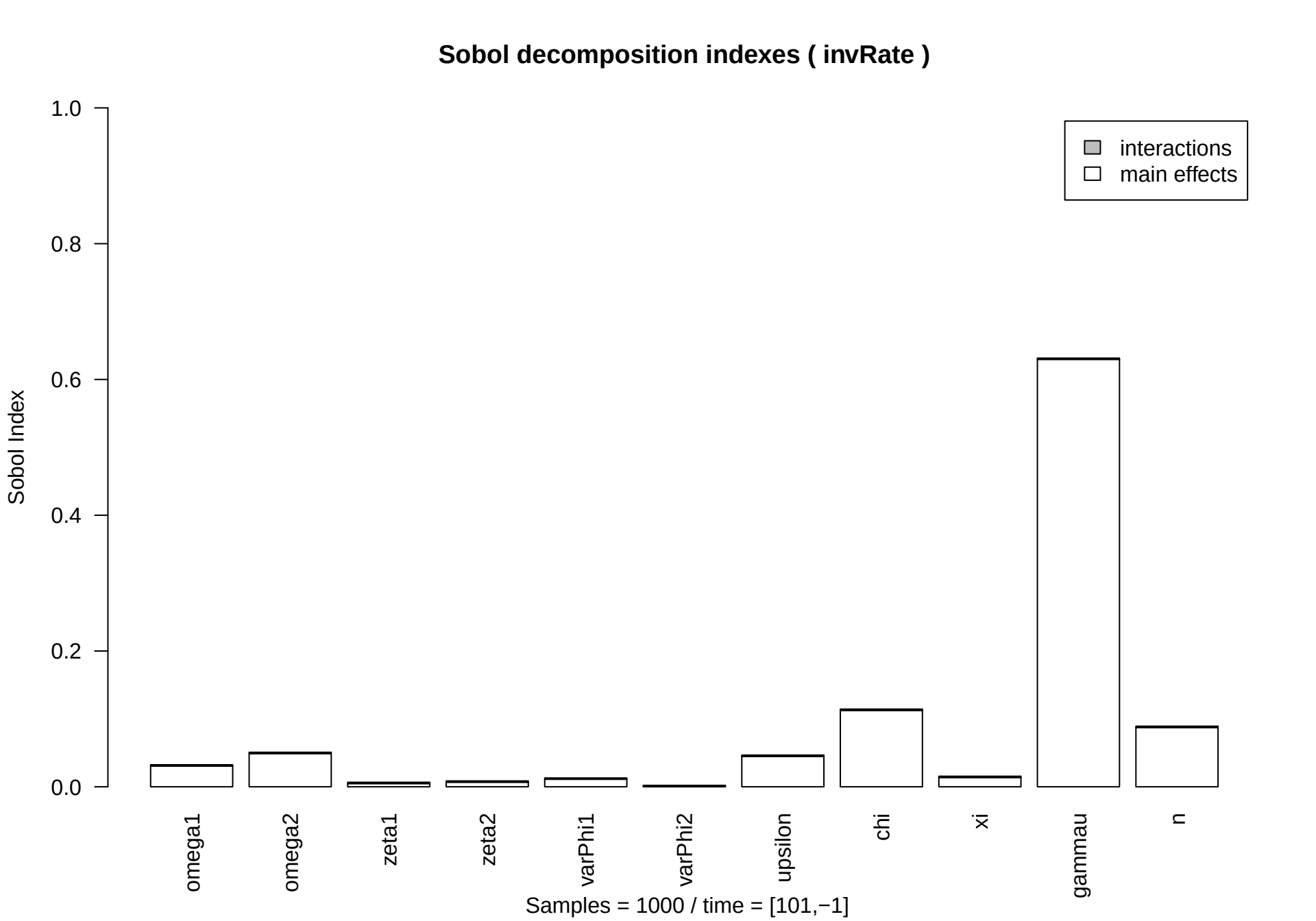
trend(intercept)	0.081	Trend specification	1st order poly.
trend(inclination)	0.002	Correlation function	Gaussian
theta(omega1)	1.881	Cross−sample Q2	0.867
theta(omega2)	1.567	External RMSE	0.002
theta(zeta1)	1.613	External MAE	0.001
theta(zeta2)	1.606	External RMA	1.469
theta(varPhi1)	0.946	DoE samples	65
theta(varPhi2)	1.568	External samples	20
theta(upsilon)	1.442		
theta(chi)	1.635		
theta(xi)	0.343		
theta(gammau)	0.690		
theta(n)	0.802		

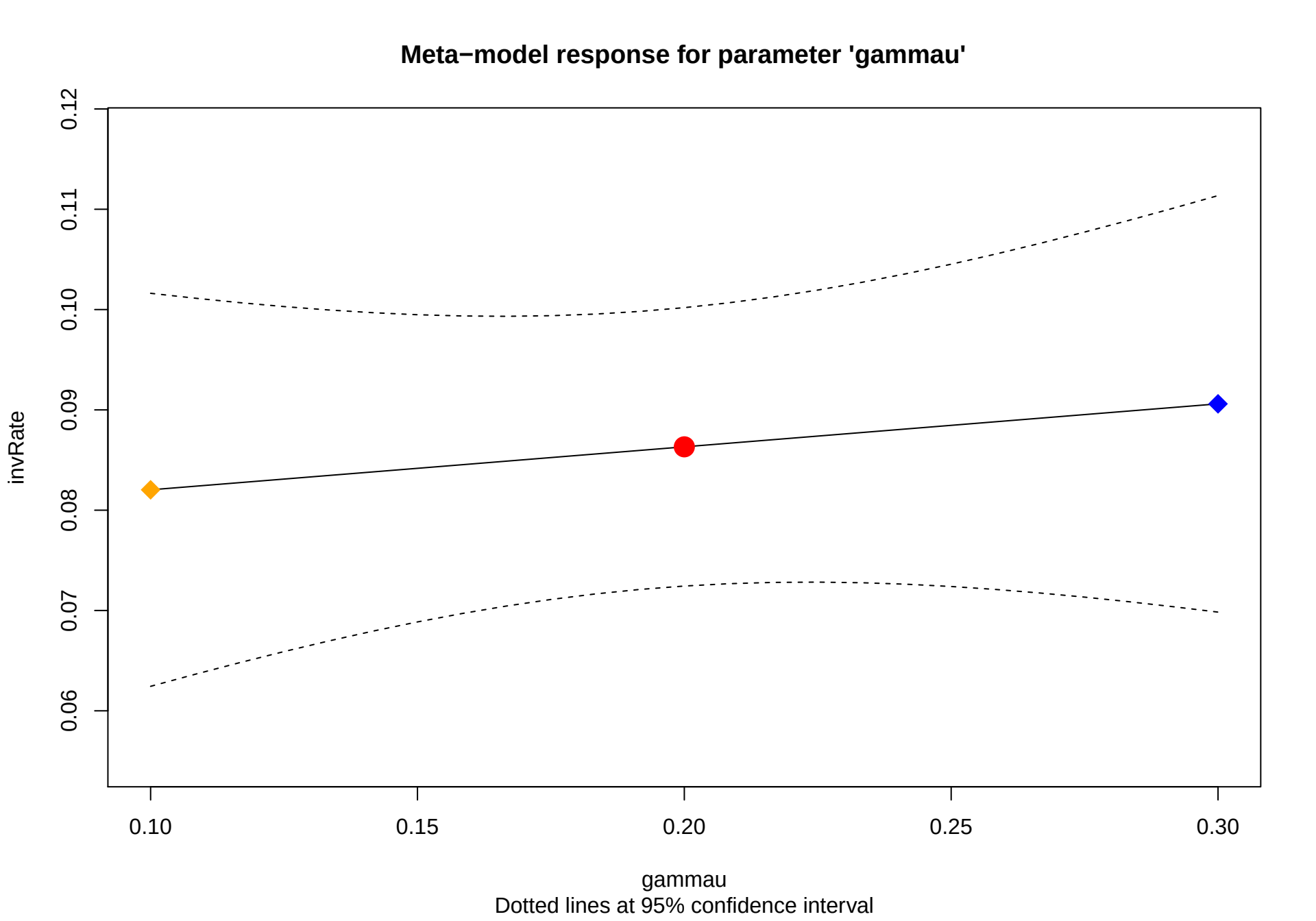
Variables rescaled to [0,1] / Average 95% CI = +/− 0.02
Predicted output at defaults: invRate = 0.09, 95% CI = [0.07,0.1], time = [101,−1]

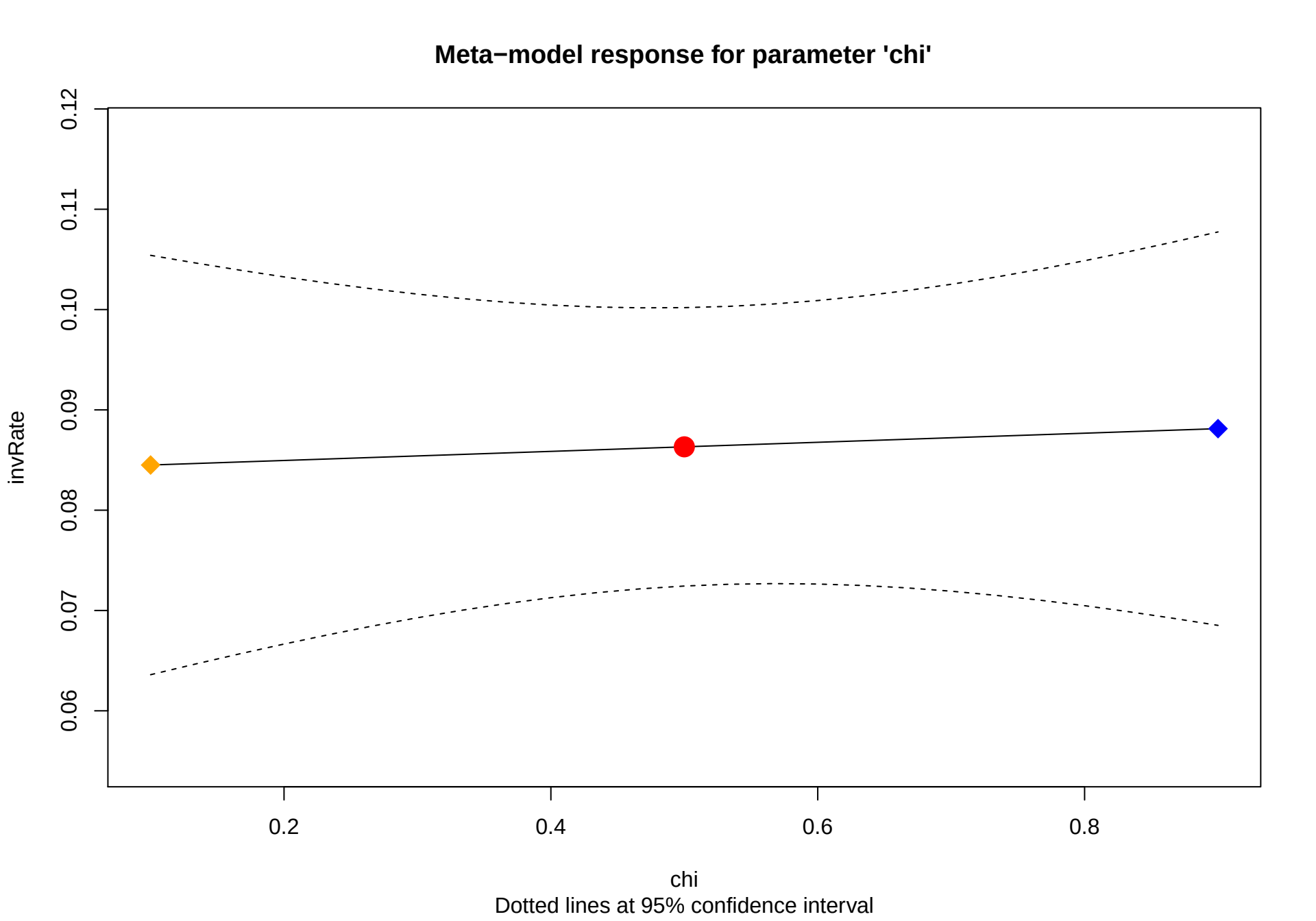
Sobol decomposition indexes (invRate)

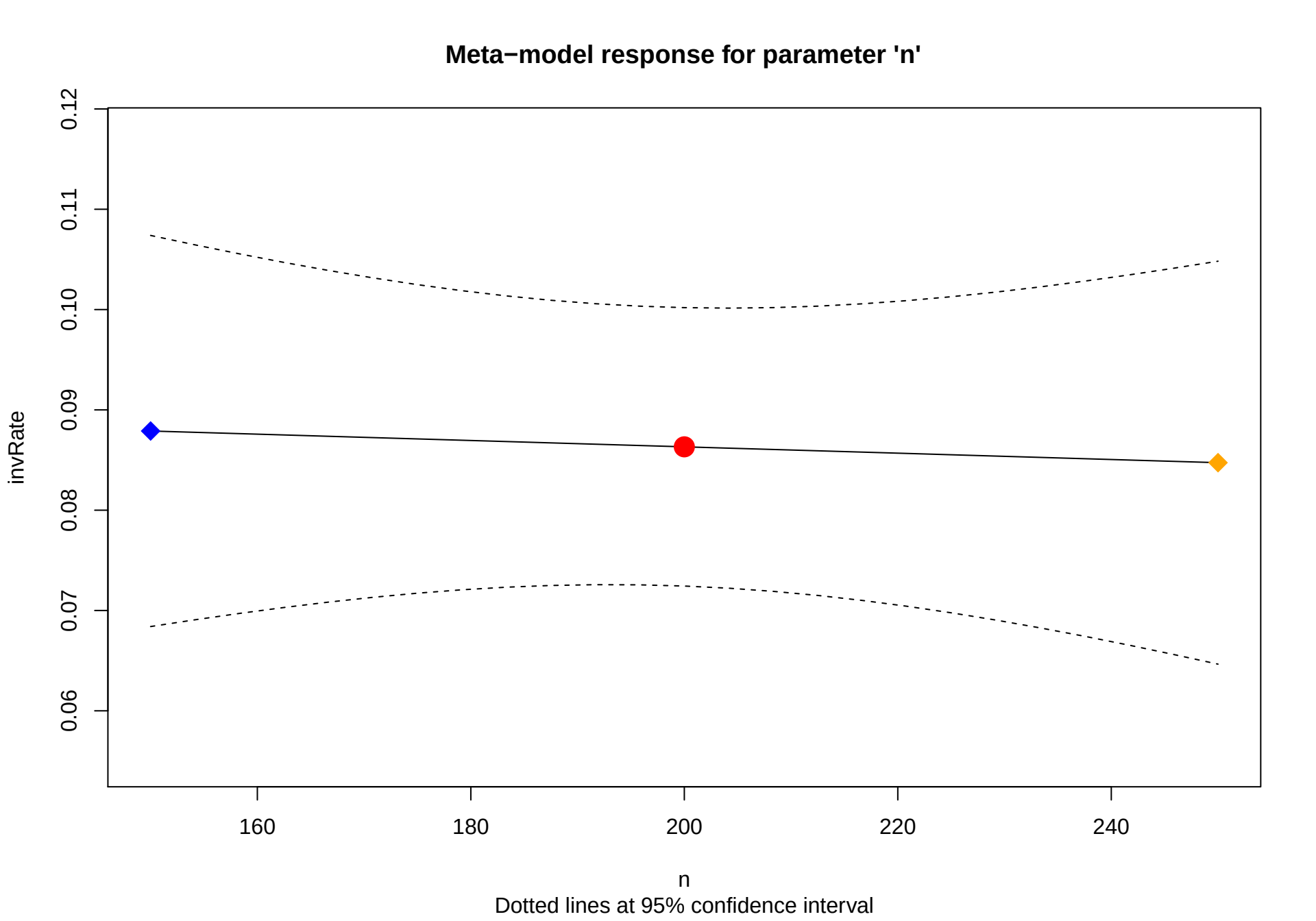
	Direct effects	Interactions
omega1	0.031	0.002
omega2	0.049	0.002
zeta1	0.005	0.002
zeta2	0.007	0.002
varPhi1	0.011	0.002
varPhi2	0.000	0.002
upsilon	0.045	0.002
chi	0.112	0.002
xi	0.014	0.002
gammau	0.630	0.002
n	0.087	0.002

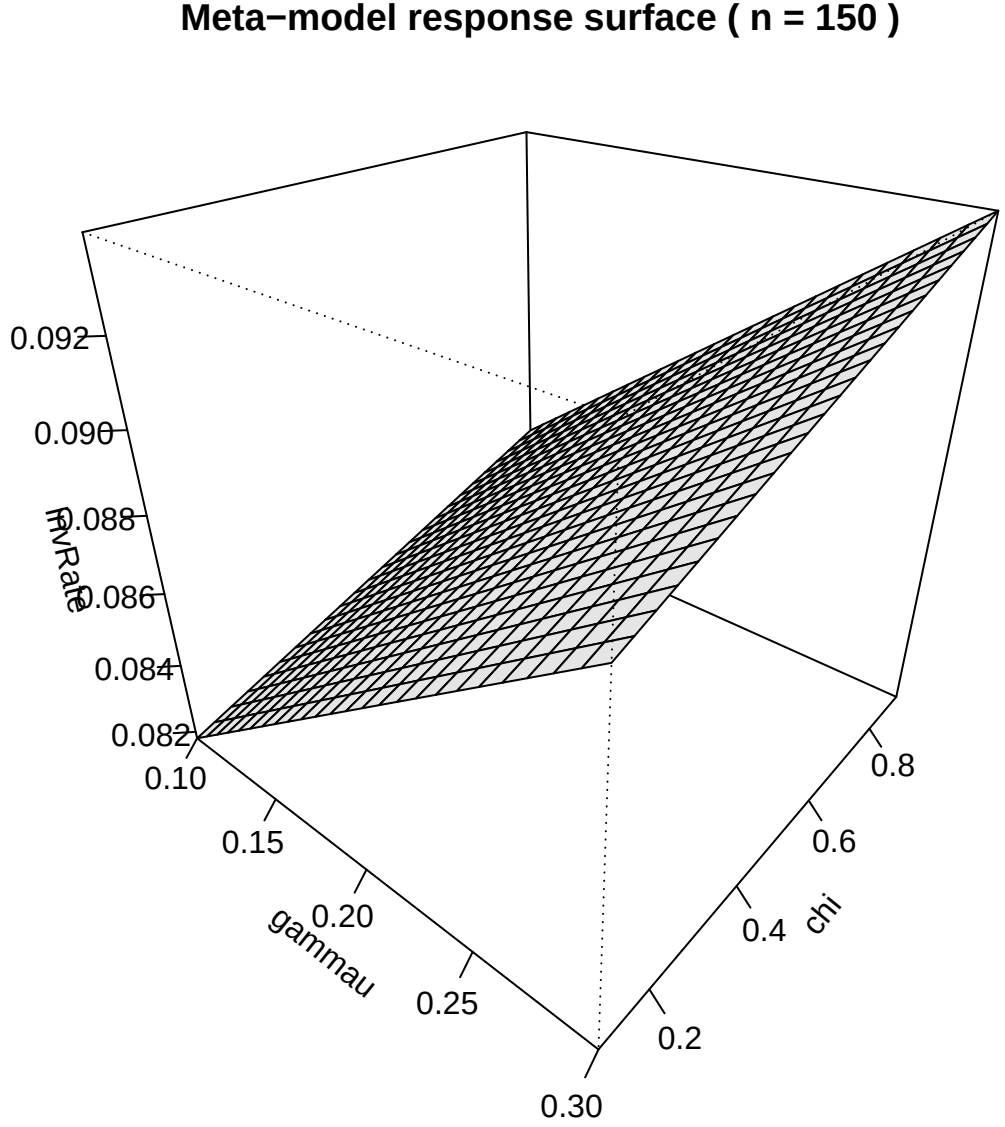
Samples = 1000 / time = [101,−1]

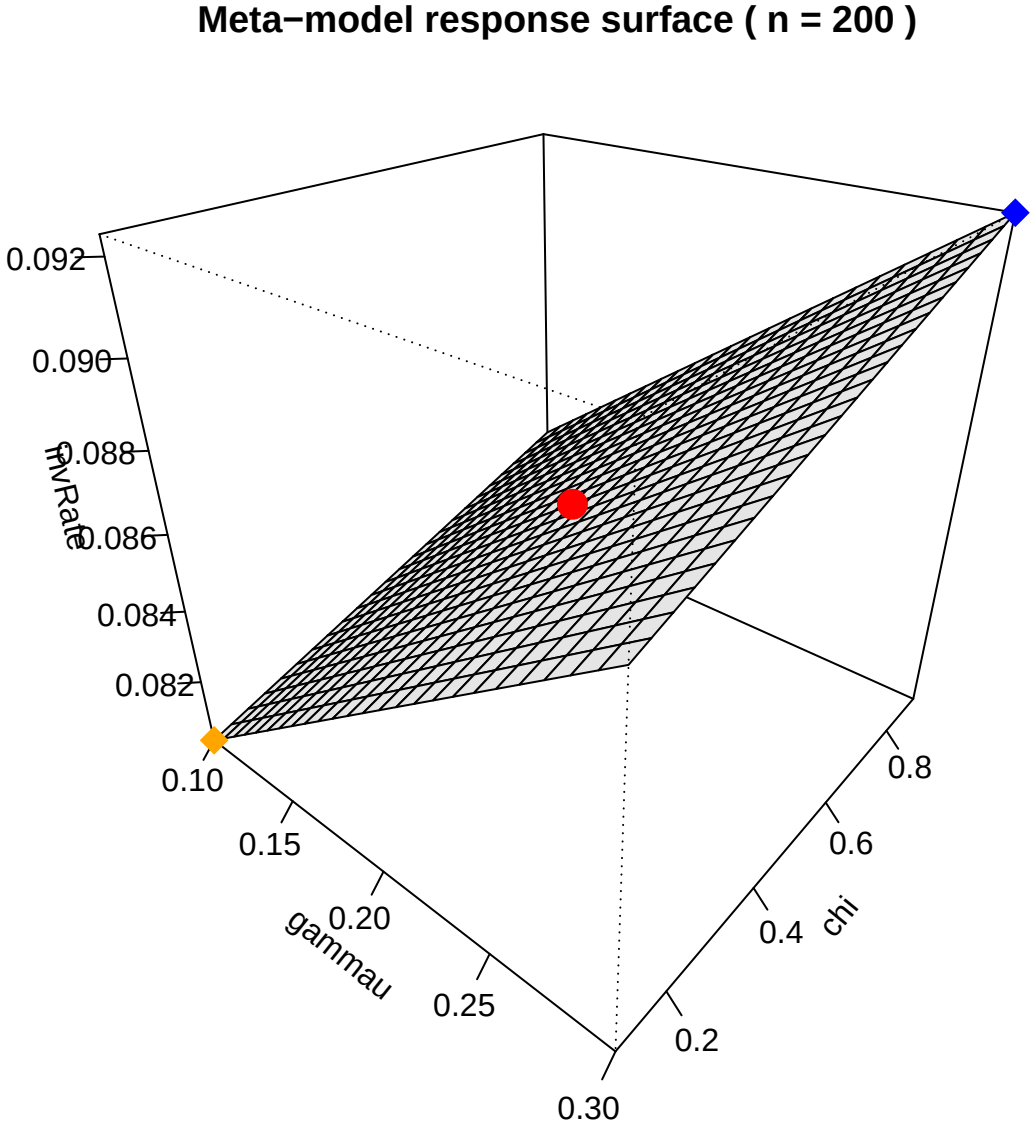

Sobol decomposition indexes (invRate)
1.0
0.8
0.6
0.4
0.2
0.0
Sobol Index
interactions
main effects
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
gammau
n
Samples = 1000 / time = [101,−1]


Meta−model response for parameter 'gammau'
invRate
0.06
0.07
0.08
0.09
0.10
0.11
0.12
0.10
0.15
0.20
0.25
0.30
gammau
Dotted lines at 95% confidence interval

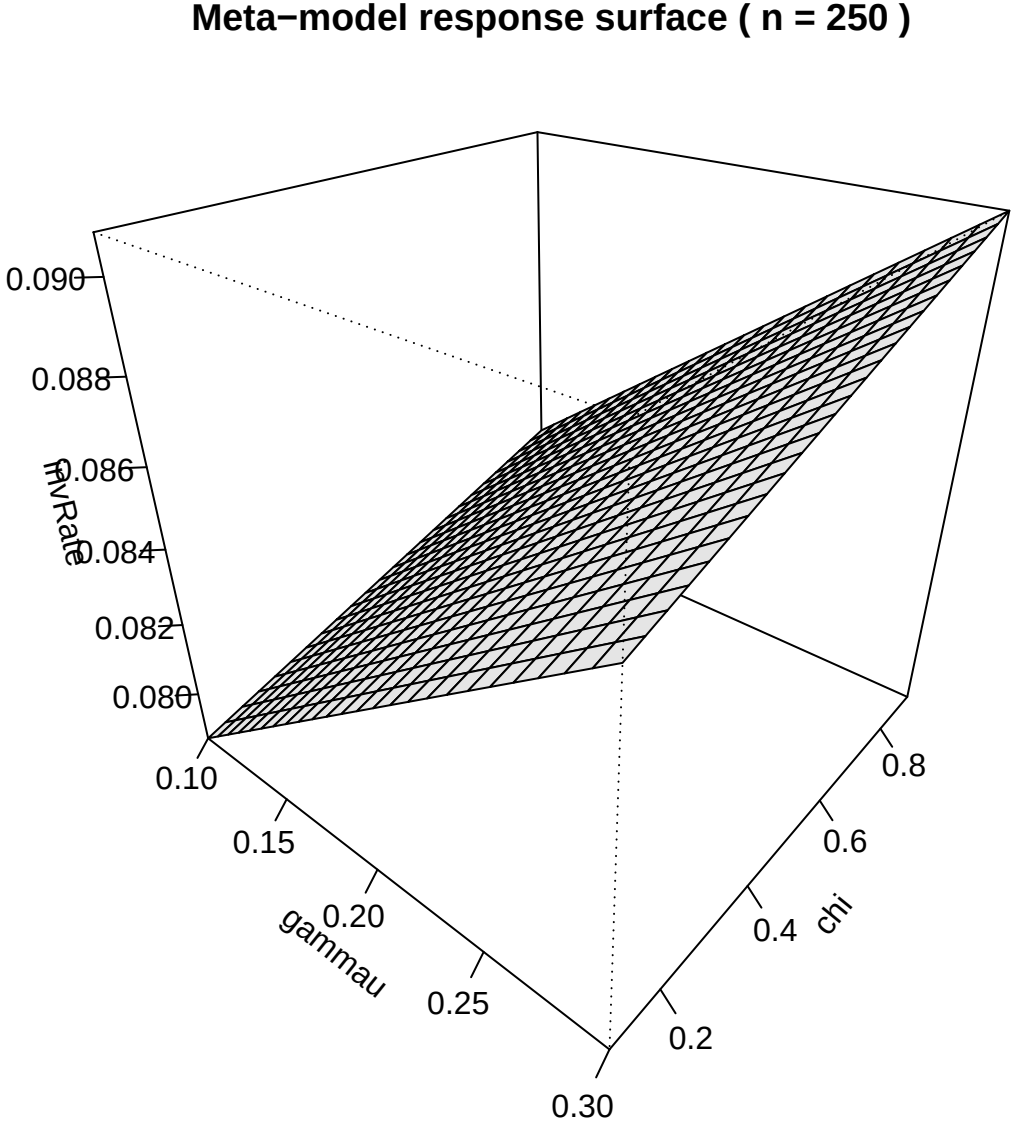

Meta−model response for parameter 'chi'
invRate
0.06
0.07
0.08
0.09
0.10
0.11
0.12
0.2
0.4
0.6
0.8
chi
Dotted lines at 95% confidence interval

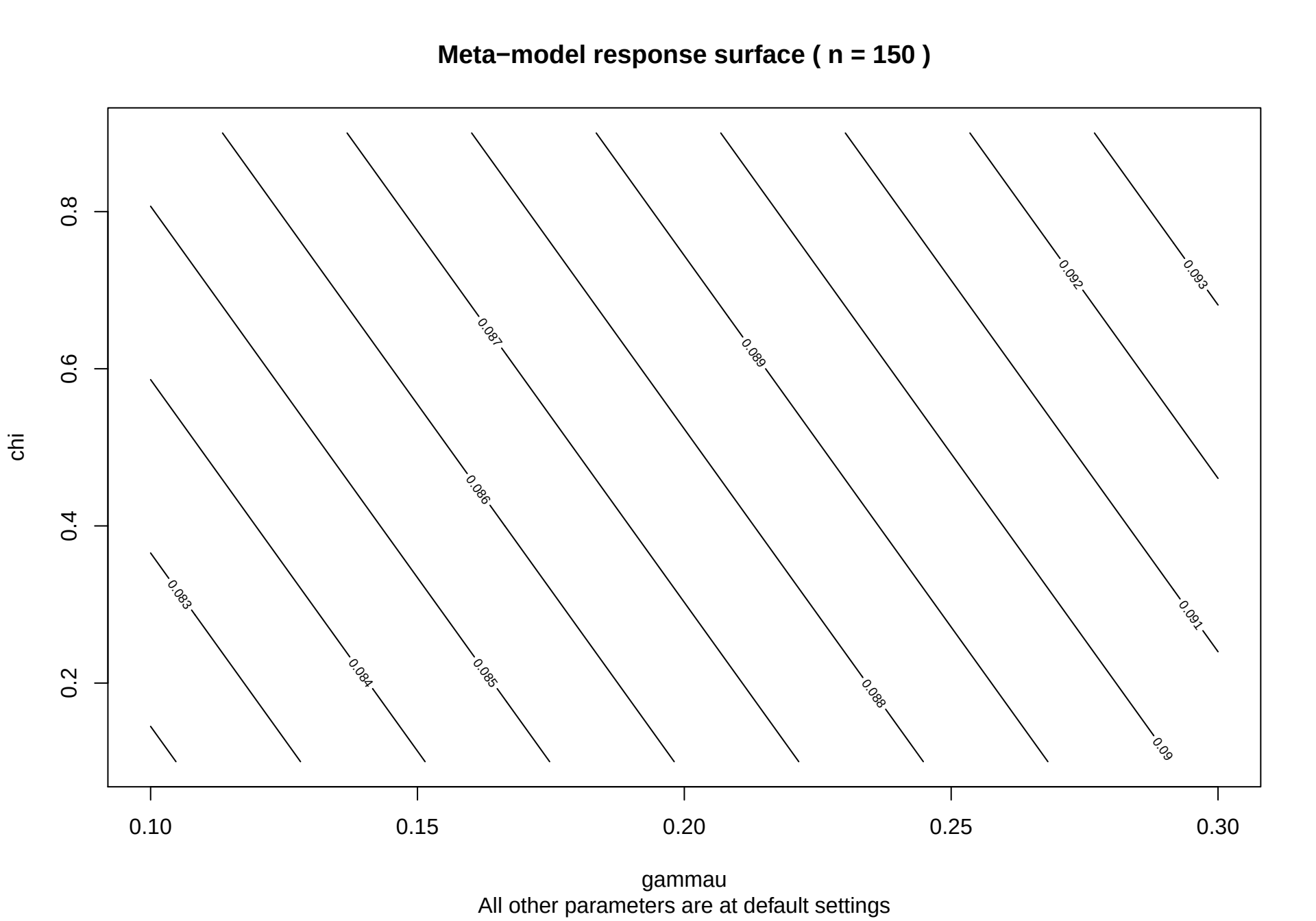

Meta−model response for parameter 'n'
invRate
0.06
0.07
0.08
0.09
0.10
0.11
0.12
160
180
200
220
240
n
Dotted lines at 95% confidence interval

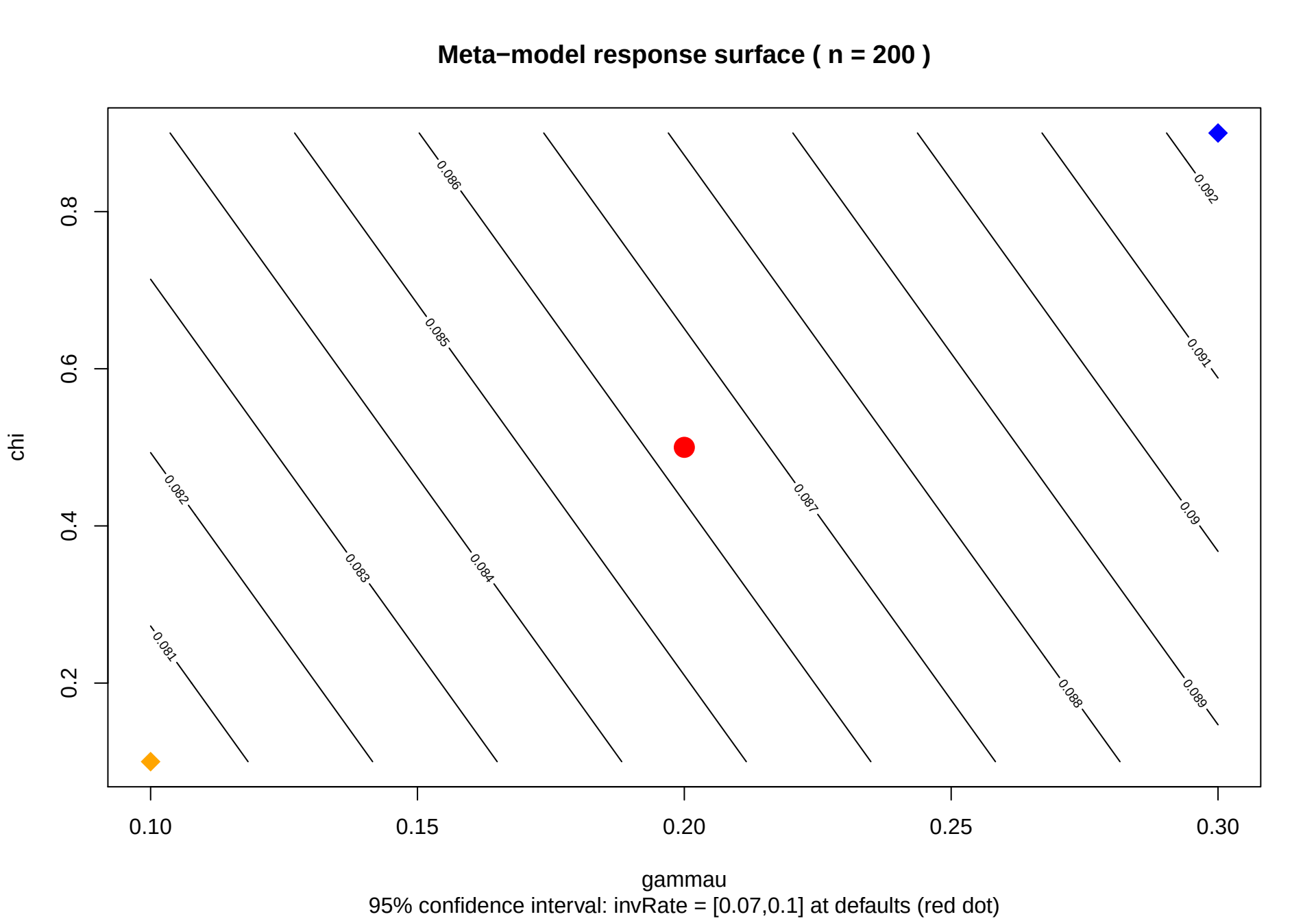

Meta−model response surface (n = 150)
0.092
0.090
0.088
0.086
0.084
0.082
RVRate
0.10
0.15
0.20
0.25
0.30
gammau
0.2
0.4
0.6
0.8
chi
All other parameters are at default settings

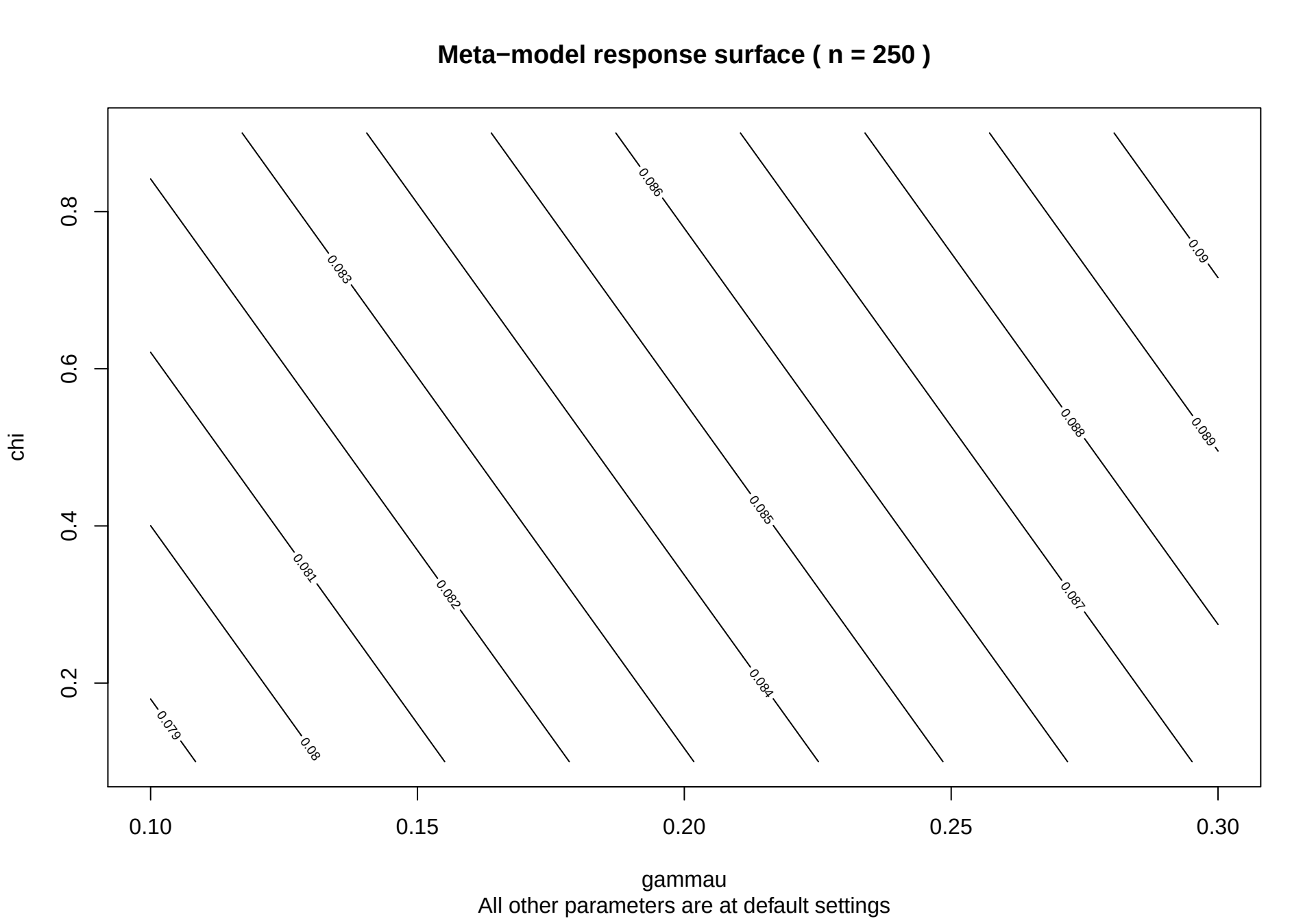


95% confidence interval: invRate = [0.07,0.1] at defaults (red dot)


Meta−model response surface (n = 250)
0.090
0.088
0.086
0.084
0.082
0.080
mvRate
0.10
0.15
0.20
0.25
0.30
gammau
0.2
0.4
0.6
0.8
chi
All other parameters are at default settings


Meta−model response surface (n = 150)
chi
0.2
0.4
0.6
0.8
0.10
0.15
0.20
0.25
0.30
gammau
All other parameters are at default settings
0.083
0.084
0.085
0.086
0.087
0.088
0.089
0.09
0.091
0.092
0.093


Meta−model response surface (n = 200)
chi
gammau
95% confidence interval: invRate = [0.07,0.1] at defaults (red dot)
0.2
0.4
0.6
0.8
0.10
0.15
0.20
0.25
0.30
0.081
0.082
0.083
0.084
0.085
0.086
0.087
0.088
0.089
0.09
0.091
0.092


Meta−model response surface (n = 250)
chi
0.2
0.4
0.6
0.8
0.10
0.15
0.20
0.25
0.30
gammau
All other parameters are at default settings
0.079
0.08
0.081
0.082
0.083
0.084
0.085
0.086
0.087
0.088
0.089
0.09