Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.8641	0.8261	0.8401	0.6539	0.8660
Q2 1st order poly. trend	0.8665	0.8352	0.8832	0.7145	0.8364
RMSE constant trend	0.0154	0.0154	0.0154	0.0154	0.0154
RMSE 1st order poly. trend	0.0089	0.0089	0.0089	0.0089	0.0089
MAE constant trend	0.0114	0.0114	0.0114	0.0114	0.0114
MAE 1st order poly. trend	0.0073	0.0073	0.0073	0.0073	0.0073
RMA constant trend	2.3753	2.3753	2.3753	2.3753	2.3753
RMA 1st order poly. trend	1.1289	1.1289	1.1289	1.1289	1.1289

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

Kriging meta−model estimation (standardized)

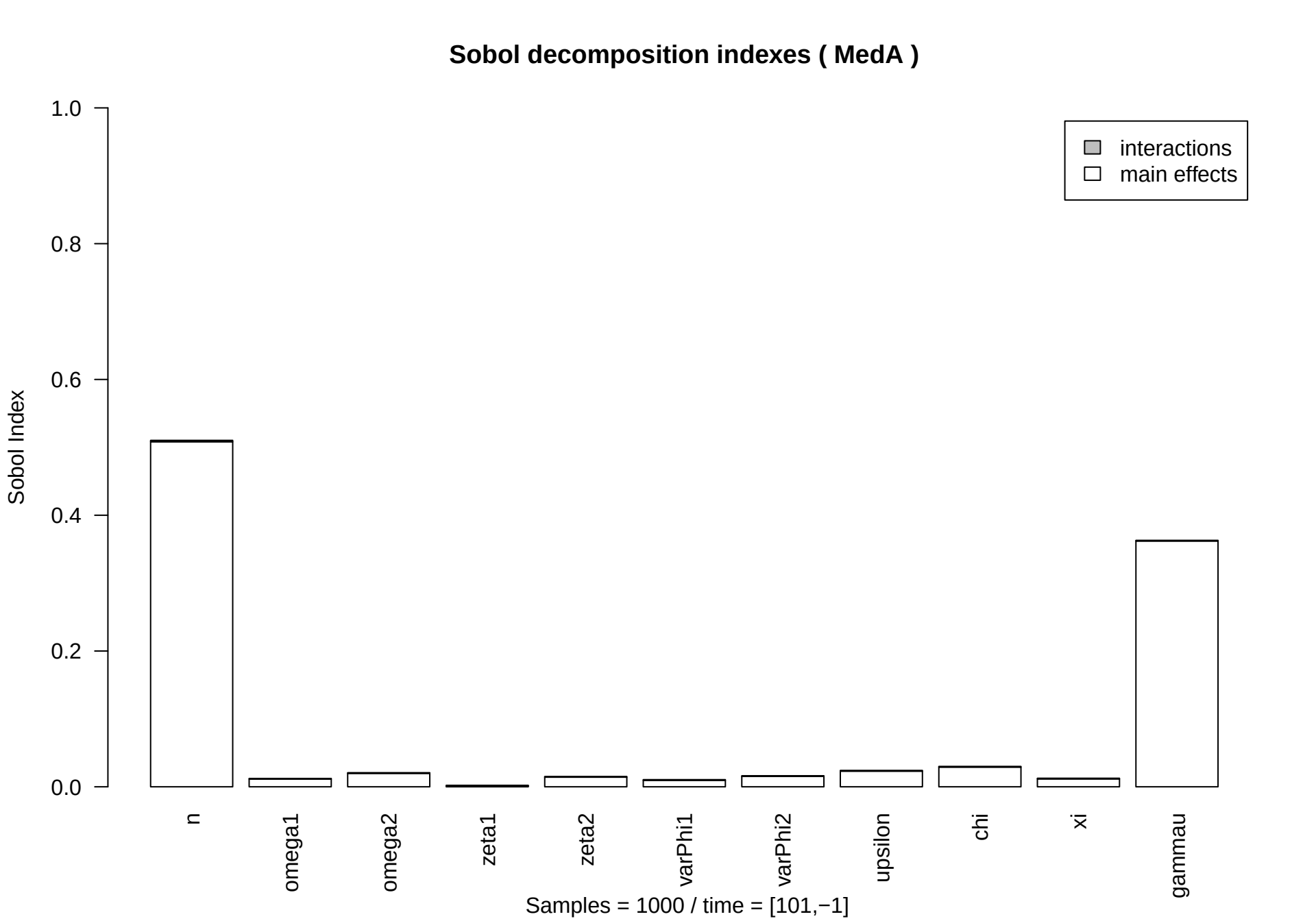
trend(intercept)	0.802	Trend specification	1st order poly.
trend(inclination)	−0.034	Correlation function	Gaussian
theta(n)	1.043	Cross−sample Q2	0.883
theta(omega1)	1.405	External RMSE	0.009
theta(omega2)	0.443	External MAE	0.007
theta(zeta1)	1.121	External RMA	1.129
theta(zeta2)	1.417	DoE samples	65
theta(varPhi1)	1.255	External samples	10
theta(varPhi2)	1.379		
theta(upsilon)	0.090		
theta(chi)	1.365		
theta(xi)	1.647		
theta(gammau)	1.226		

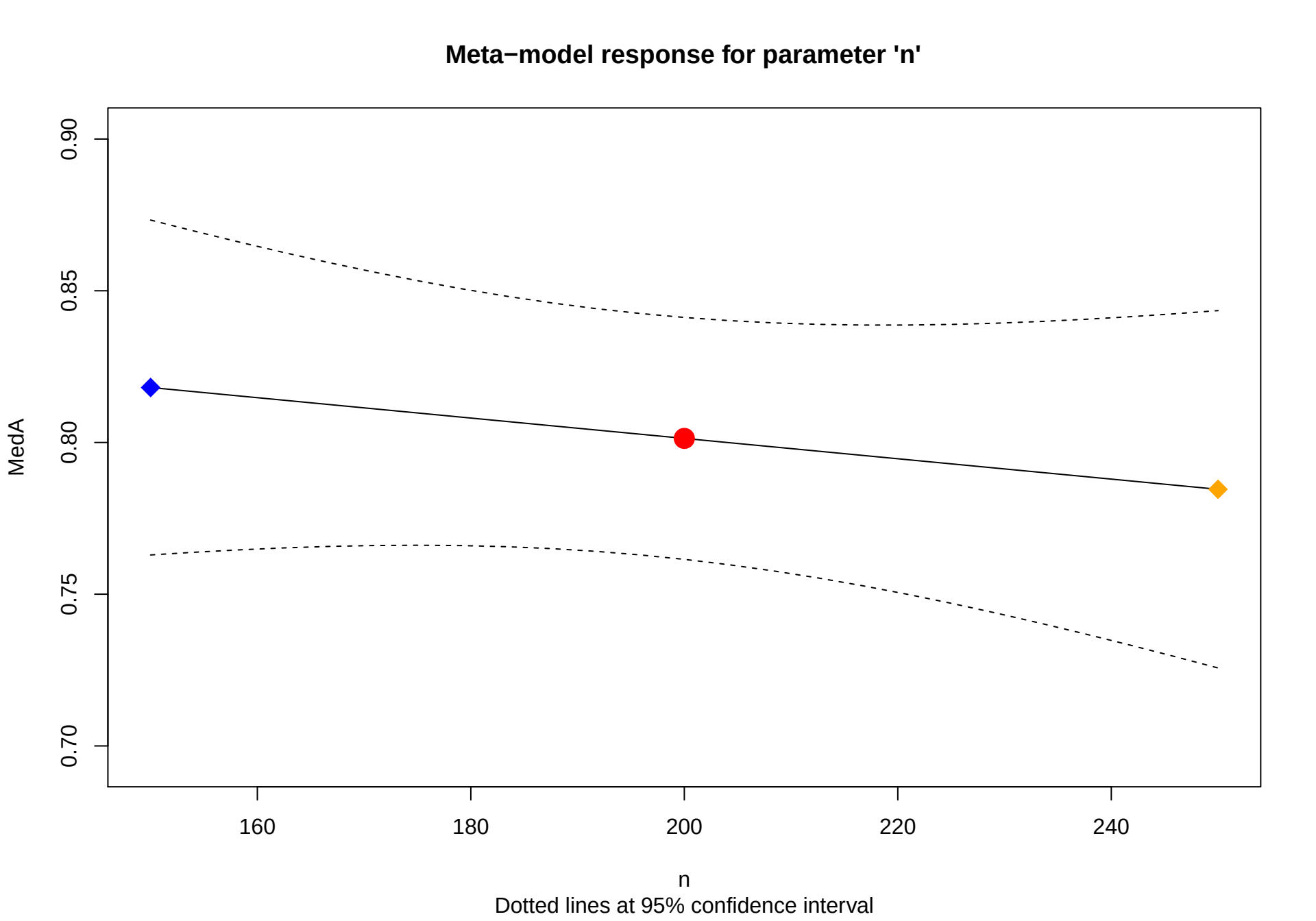
Variables rescaled to [0,1] / Average 95% CI = +/− 0.05
Predicted output at defaults: MedA = 0.8, 95% CI = [0.76,0.84], time = [101,−1]

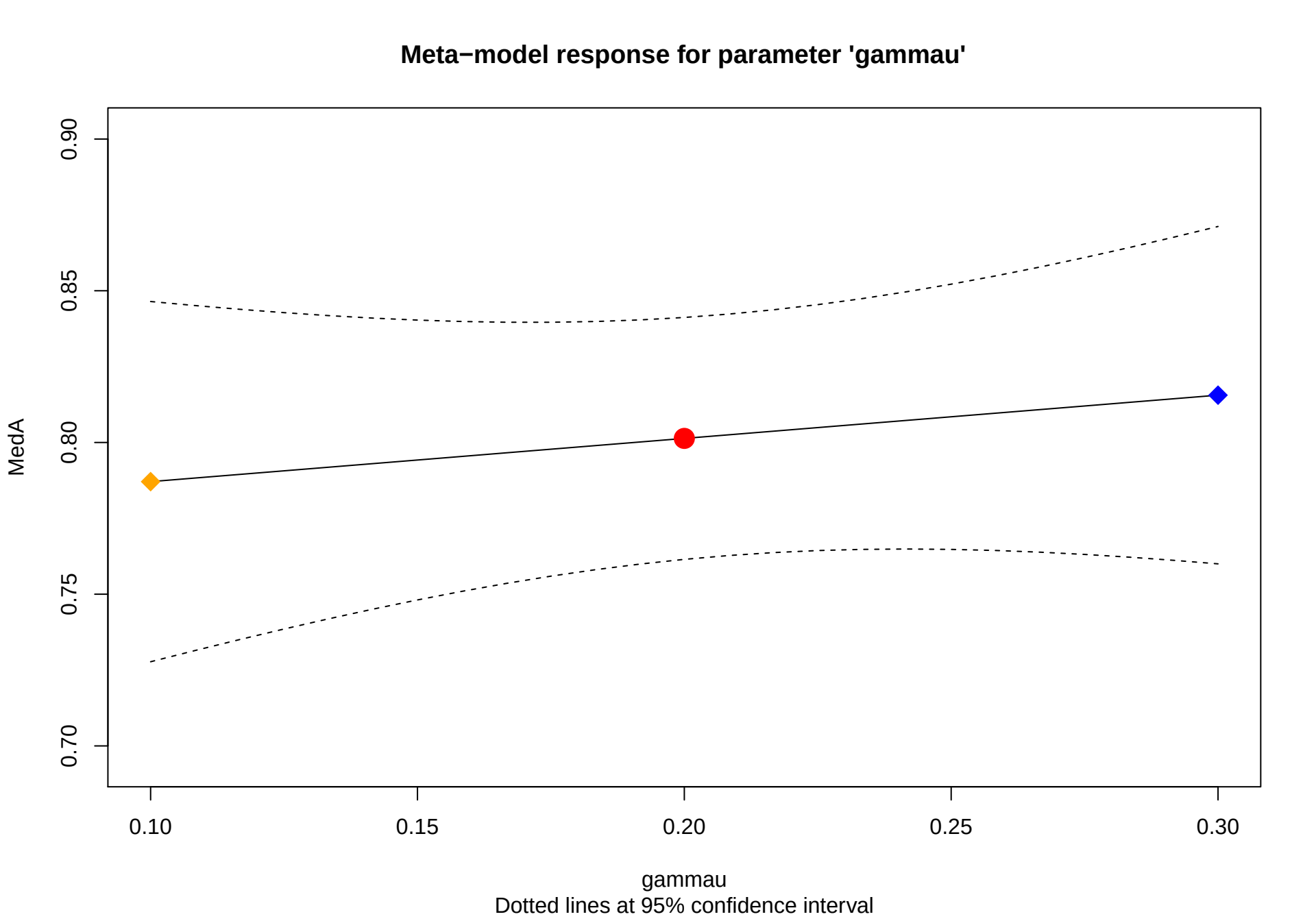
Sobol decomposition indexes (MedA)

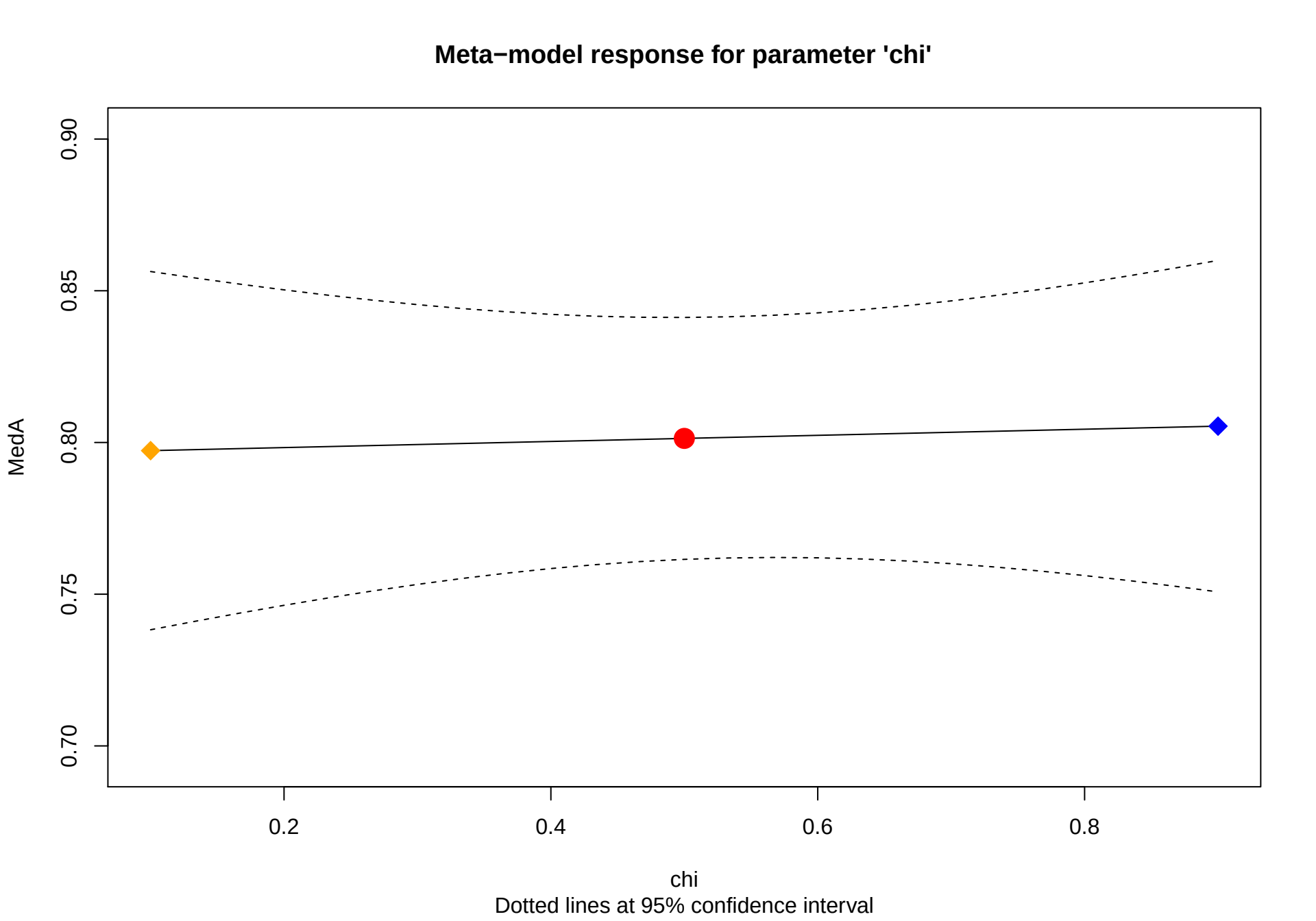
	Direct effects	Interactions
n	0.508	0.002
omega1	0.011	0.001
omega2	0.020	0.001
zeta1	0.001	0.001
zeta2	0.014	0.001
varPhi1	0.010	0.001
varPhi2	0.015	0.001
upsilon	0.023	0.001
chi	0.029	0.001
xi	0.012	0.001
gammau	0.362	0.001

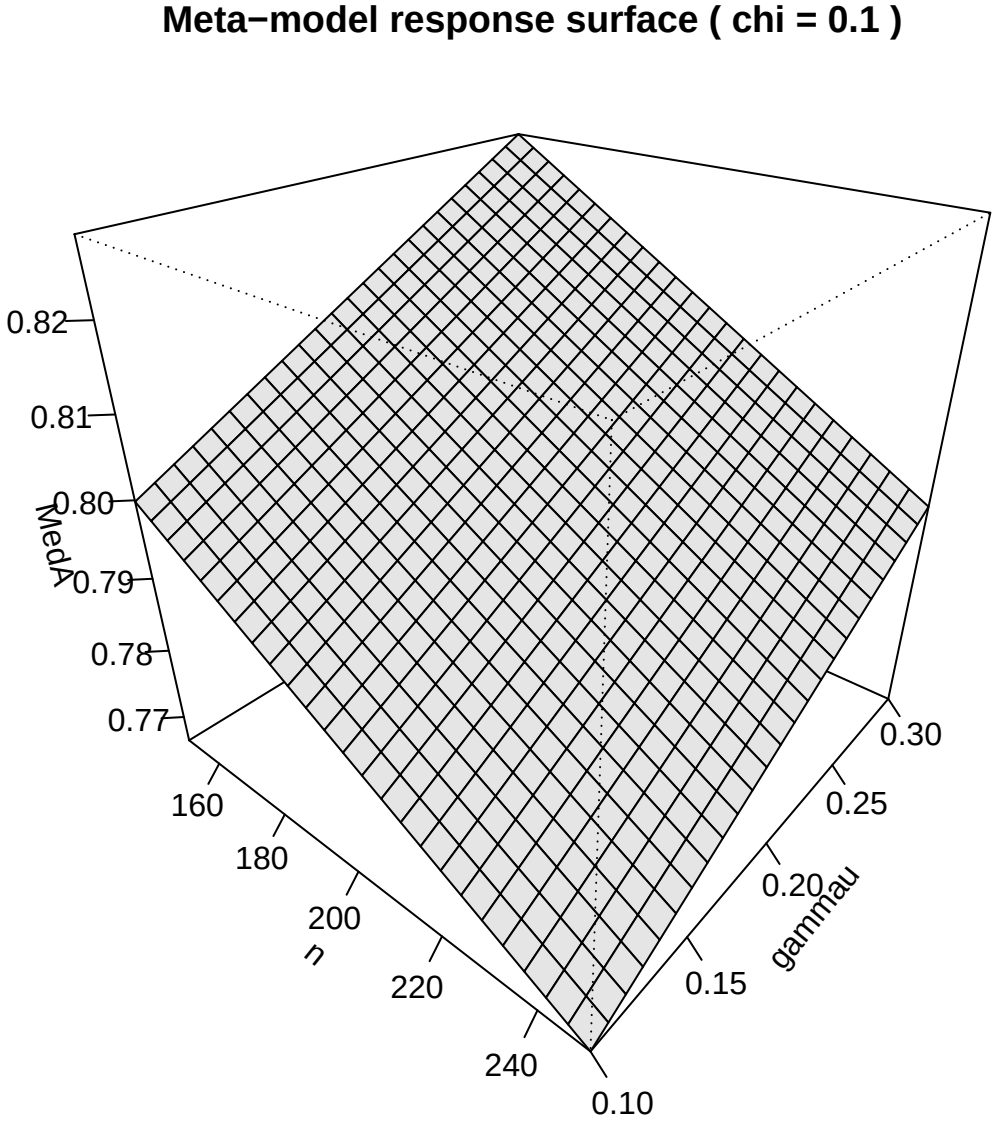
Samples = 1000 / time = [101,−1]

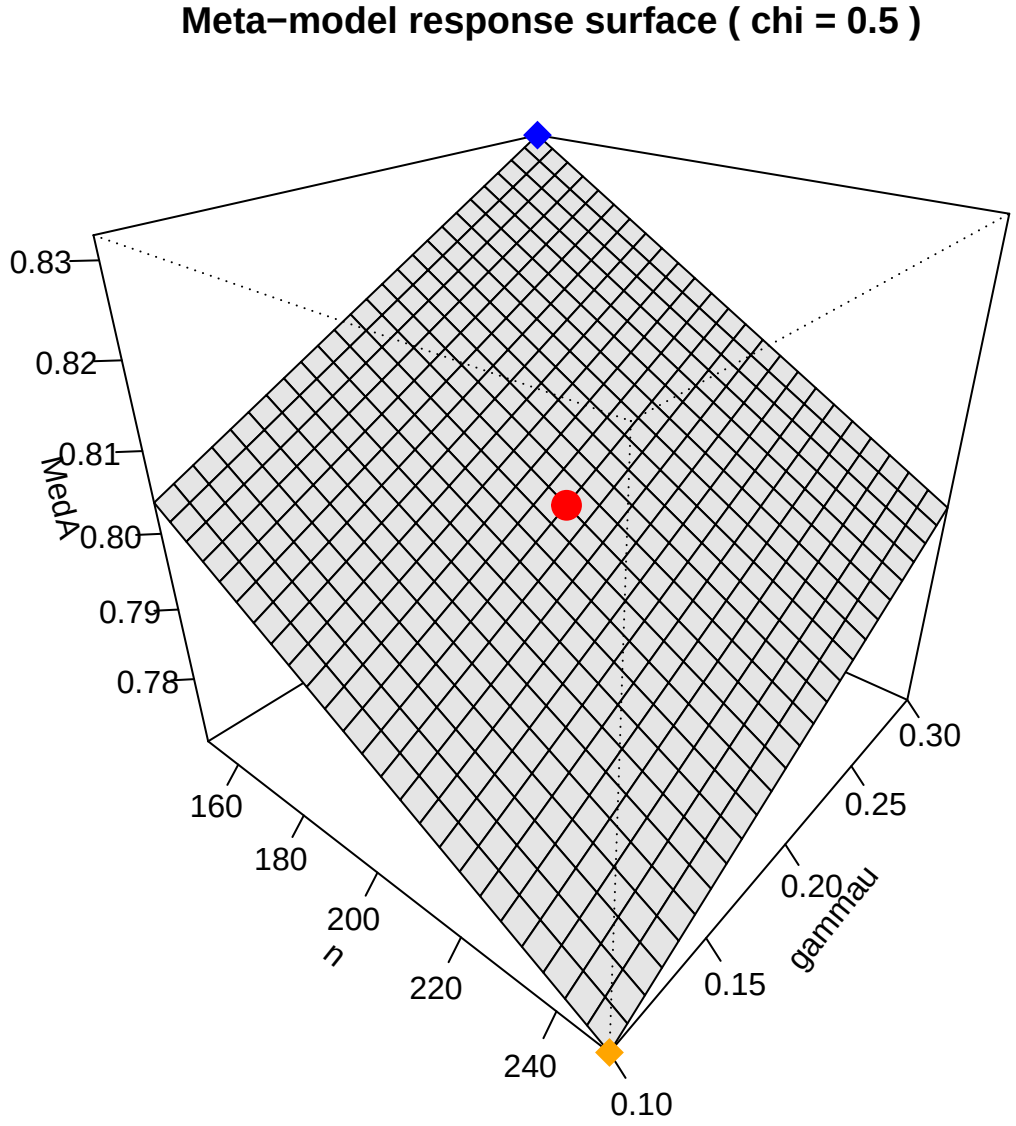

Sobol decomposition indexes (MedA)
interactions
main effects
Sobol Index
1.0
0.8
0.6
0.4
0.2
0.0
n
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
gammau
Samples = 1000 / time = [101,−1]

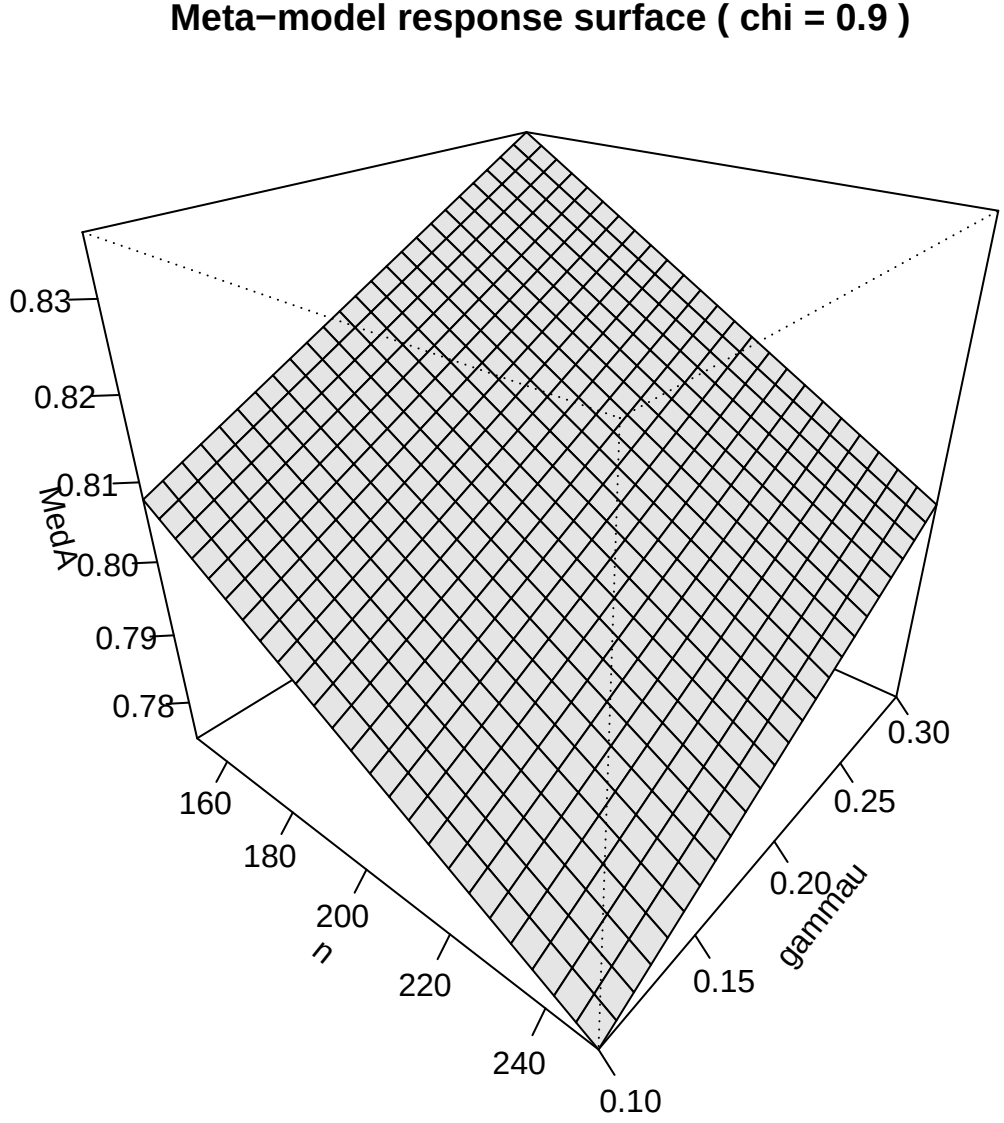

Meta−model response for parameter 'n'
MedA
0.90
0.85
0.80
0.75
0.70
160
180
200
220
240
n
Dotted lines at 95% confidence interval

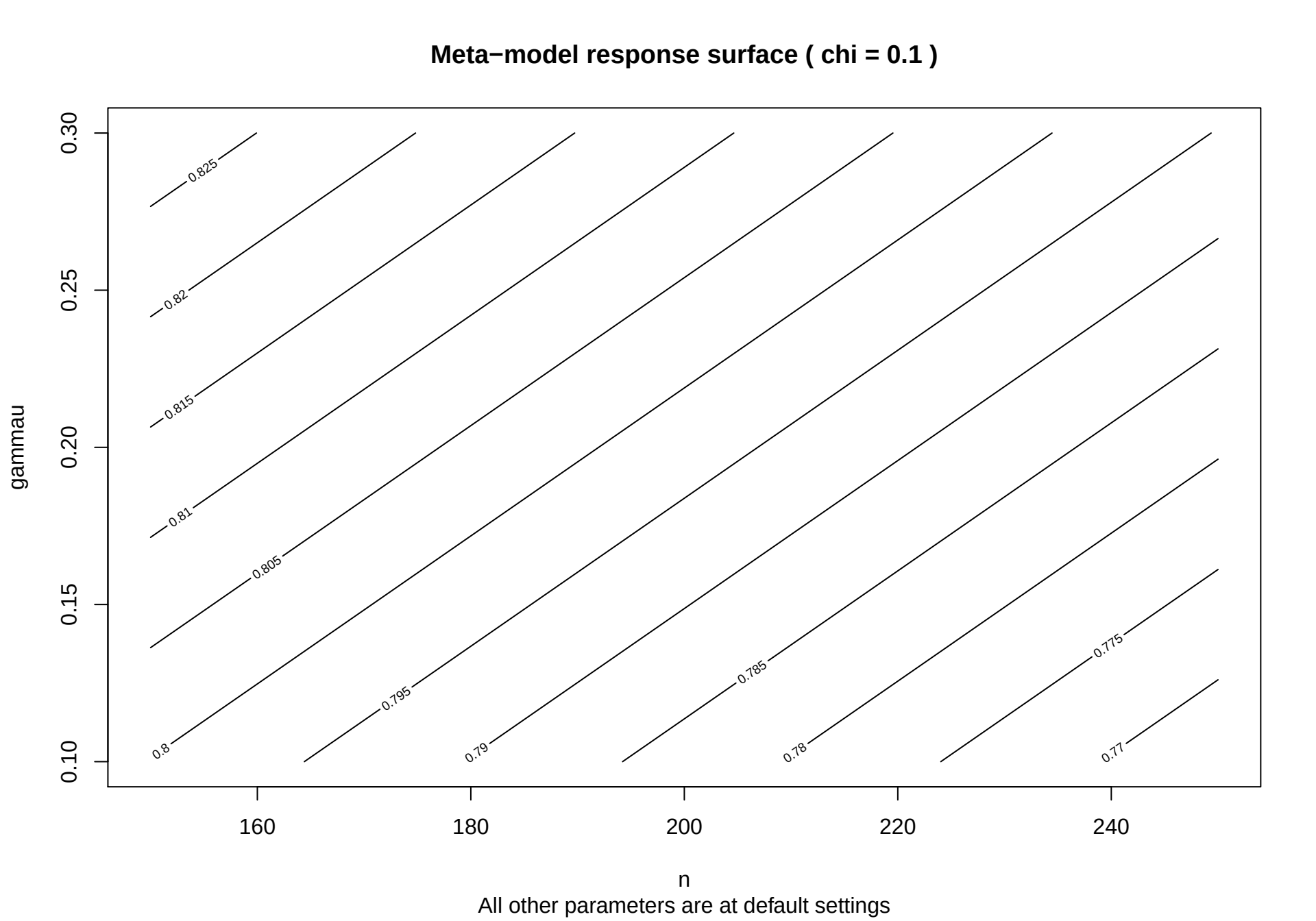

Meta−model response for parameter 'gammau'
MedA
0.90
0.85
0.80
0.75
0.70
0.10
0.15
0.20
0.25
0.30
gammau
Dotted lines at 95% confidence interval

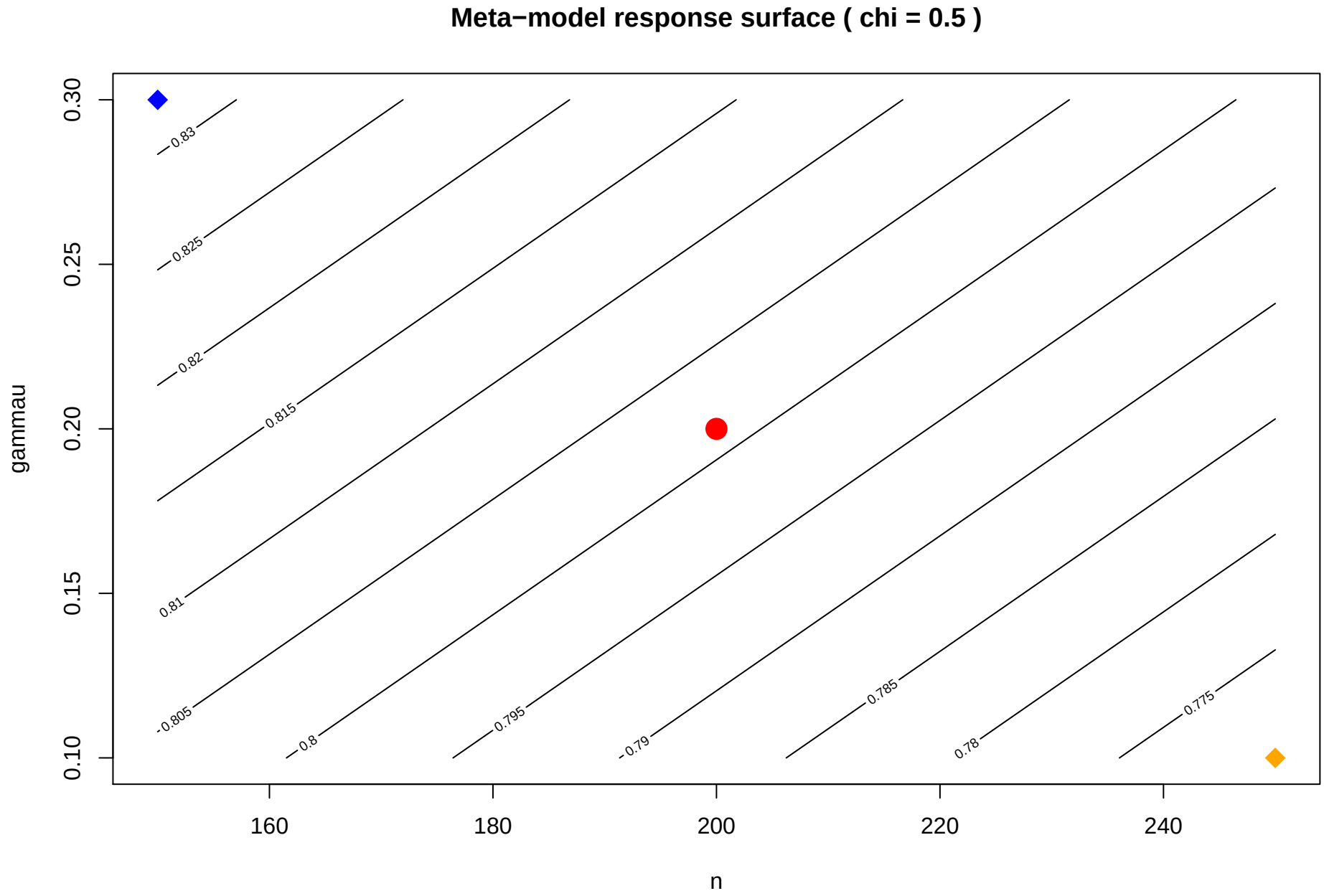

Meta−model response for parameter 'chi'
MedA
0.90
0.85
0.80
0.75
0.70
0.2
0.4
0.6
0.8
chi
Dotted lines at 95% confidence interval

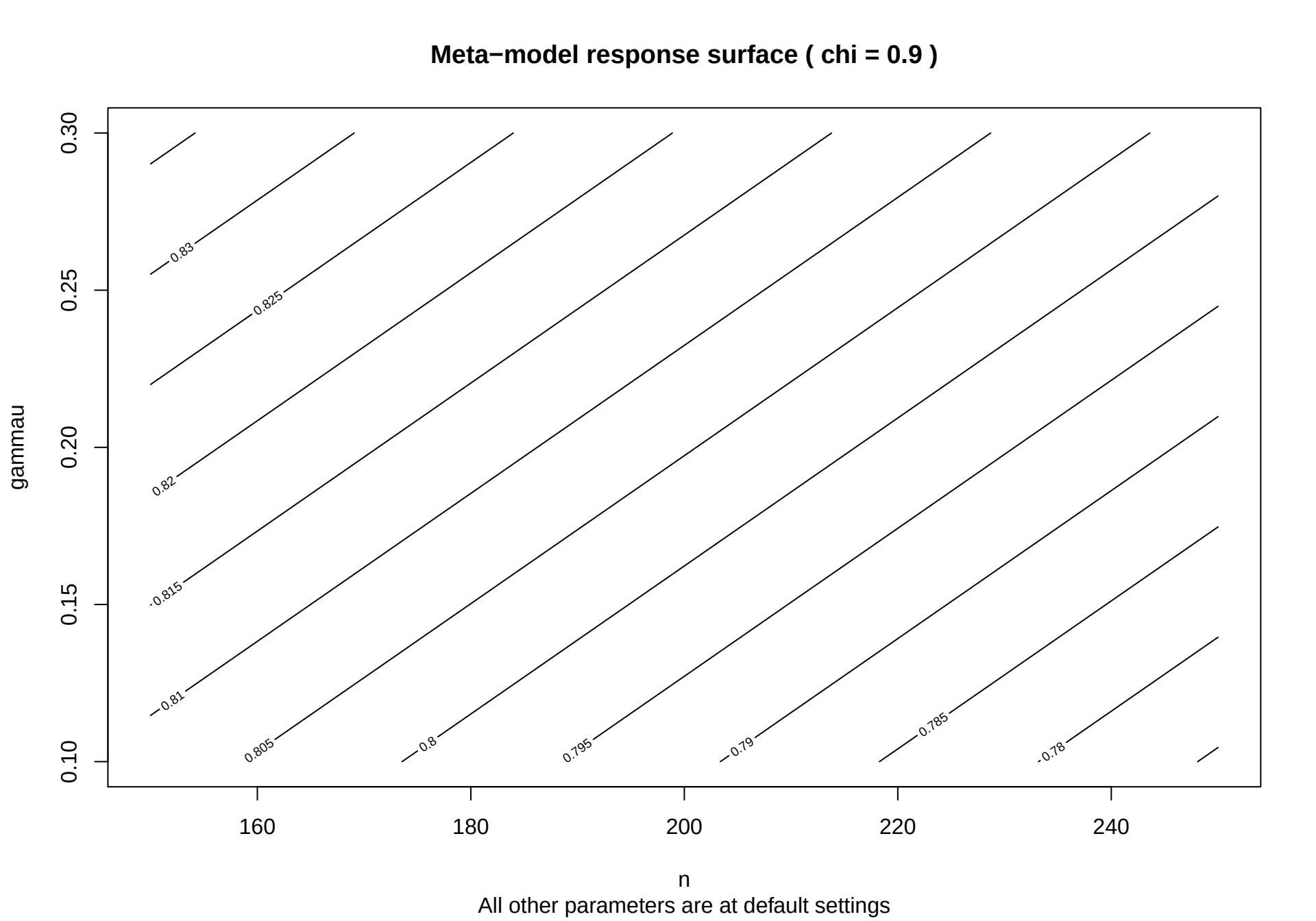

Meta−model response surface (chi = 0.1)
MedA
0.82
0.81
0.80
0.79
0.78
0.77
n
160
180
200
220
240
gammau
0.10
0.15
0.20
0.25
0.30
All other parameters are at default settings


Meta−model response surface (chi = 0.5)
MedA
0.83
0.82
0.81
0.80
0.79
0.78
n
160
180
200
220
240
gammau
0.10
0.15
0.20
0.25
0.30
95% confidence interval: MedA = [0.76,0.84] at defaults (red dot)


Meta−model response surface (chi = 0.9)
MedA
0.83
0.82
0.81
0.80
0.79
0.78
n
160
180
200
220
240
gammau
0.10
0.15
0.20
0.25
0.30
All other parameters are at default settings


Meta−model response surface (chi = 0.1)
gammau
0.10
0.15
0.20
0.25
0.30
0.825
0.82
0.815
0.81
0.805
0.8
0.795
0.79
0.785
0.78
0.775
0.77
160
180
200
220
240
n
All other parameters are at default settings


Meta−model response surface (chi = 0.5)
gammau
0.10
0.15
0.20
0.25
0.30
0.83
0.825
0.82
0.815
0.81
0.805
0.8
0.795
0.79
0.785
0.78
0.775
160
180
200
220
240
n
95% confidence interval: MedA = [0.76,0.84] at defaults (red dot)


Meta−model response surface (chi = 0.9)
gammau
0.10
0.15
0.20
0.25
0.30
160
180
200
220
240
n
All other parameters are at default settings
0.83
0.825
0.82
0.815
0.81
0.805
0.8
0.795
0.79
0.785
0.78