Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.9194	0.8974	0.9355	0.6692	0.9193
Q2 1st order poly. trend	0.9031	0.7793	0.9206	0.8236	0.8971

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

Kriging meta−model estimation (standardized)

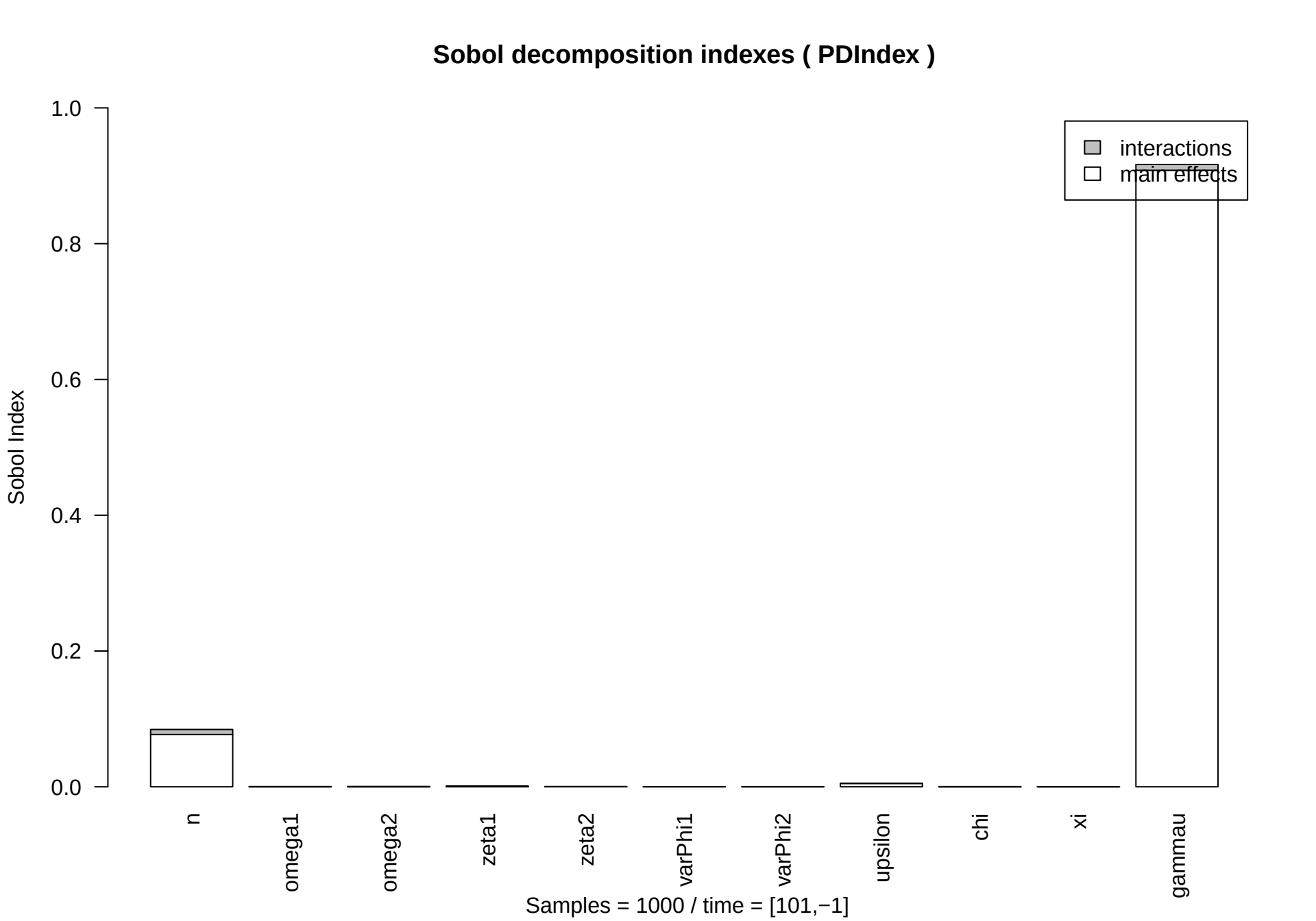
trend(intercept)	−0.359	Trend specification	constant
trend(inclination)	NA	Correlation function	Gaussian
theta(n)	1.868	Cross−sample Q2	0.936
theta(omega1)	1.503	External RMSE	NA
theta(omega2)	1.430	External MAE	NA
theta(zeta1)	1.294	External RMA	NA
theta(zeta2)	1.879	DoE samples	65
theta(varPhi1)	1.604	External samples	NA
theta(varPhi2)	1.700		
theta(upsilon)	1.262		
theta(chi)	1.464		
theta(xi)	1.890		
theta(gammau)	0.000		

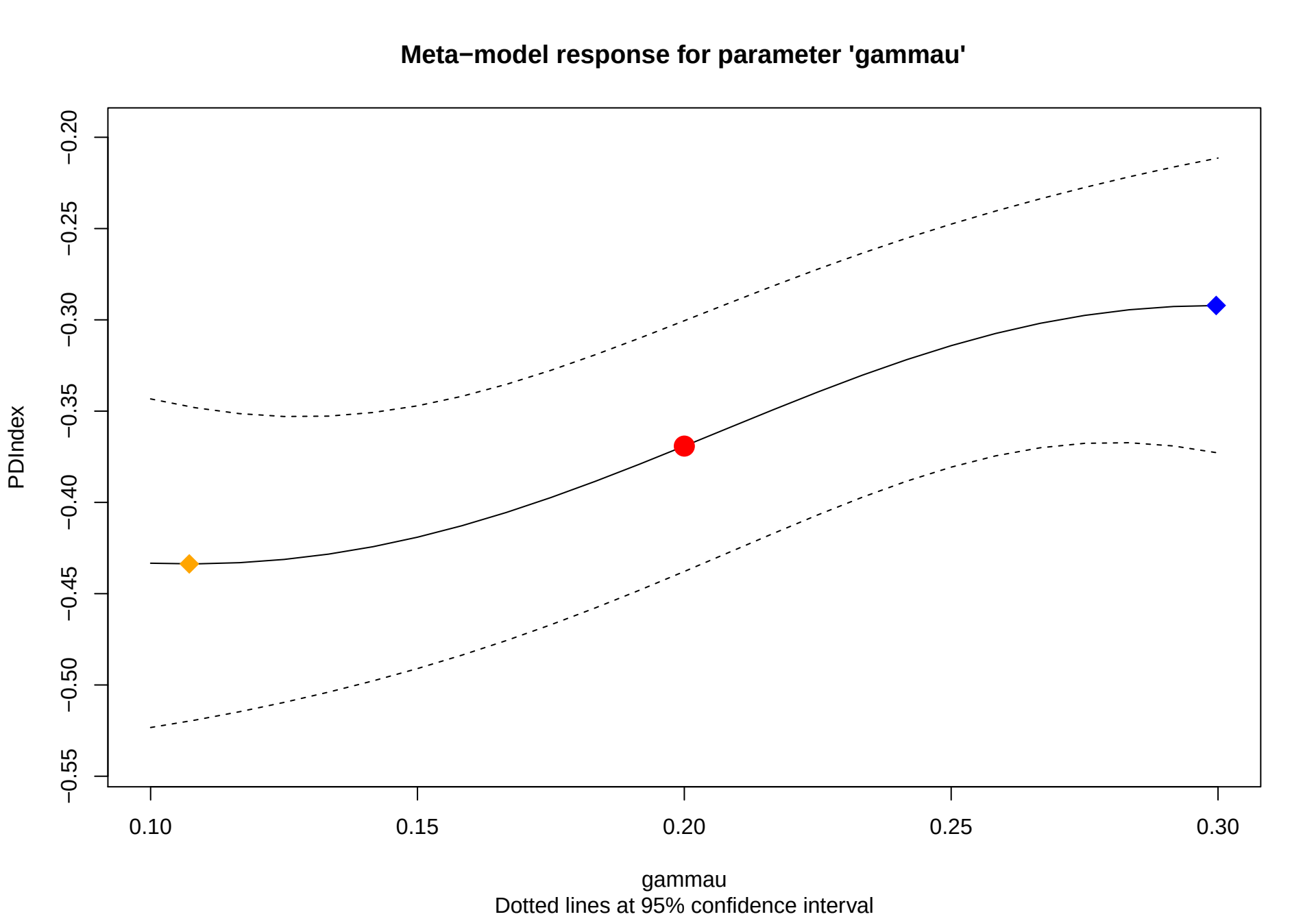
Variables rescaled to [0,1] / Average 95% CI = +/− 0.08
Predicted output at defaults: PDIndex = −0.37, 95% CI = [−0.44,−0.3], time = [101,−1]

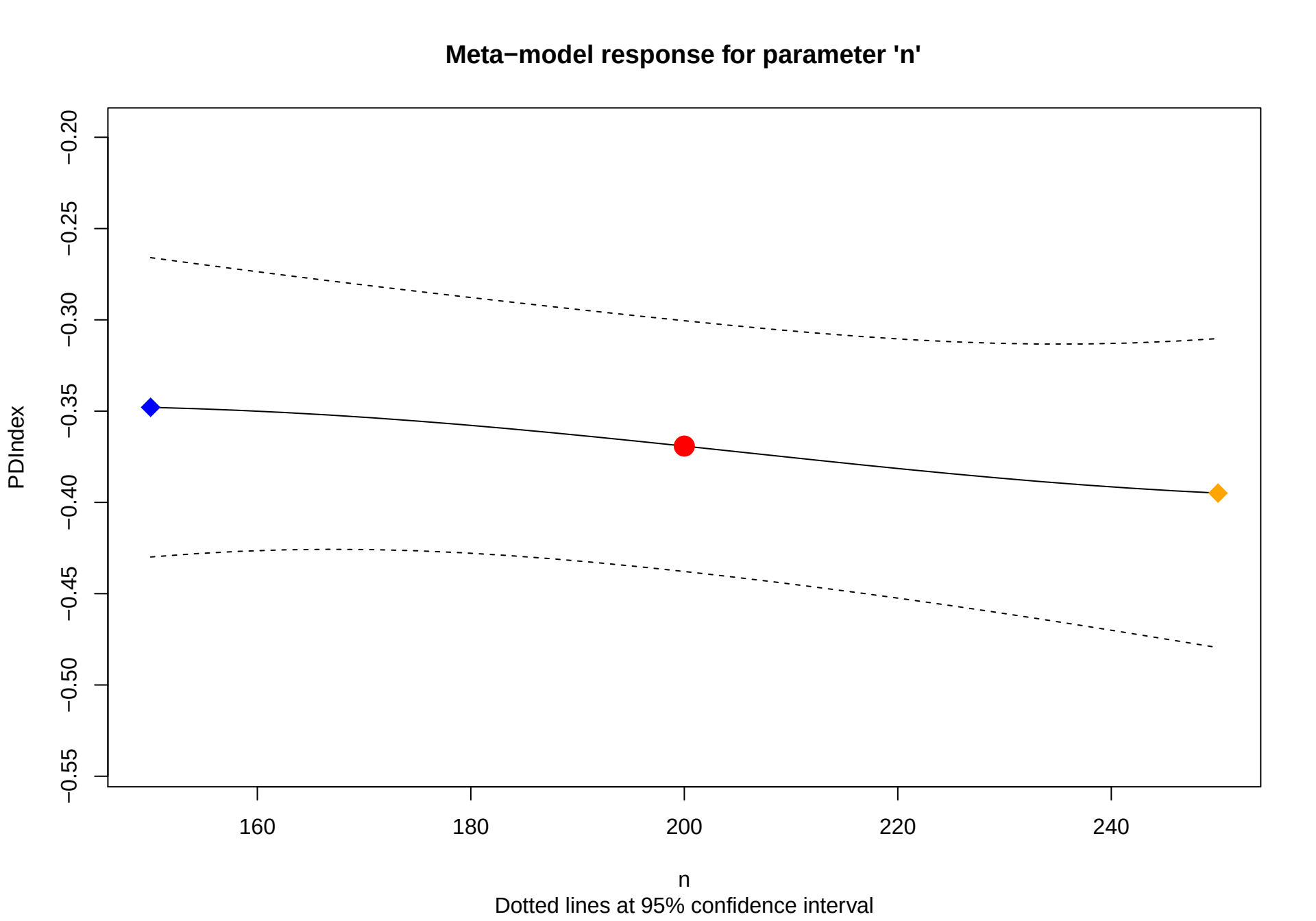
Sobol decomposition indexes (PDIndex)

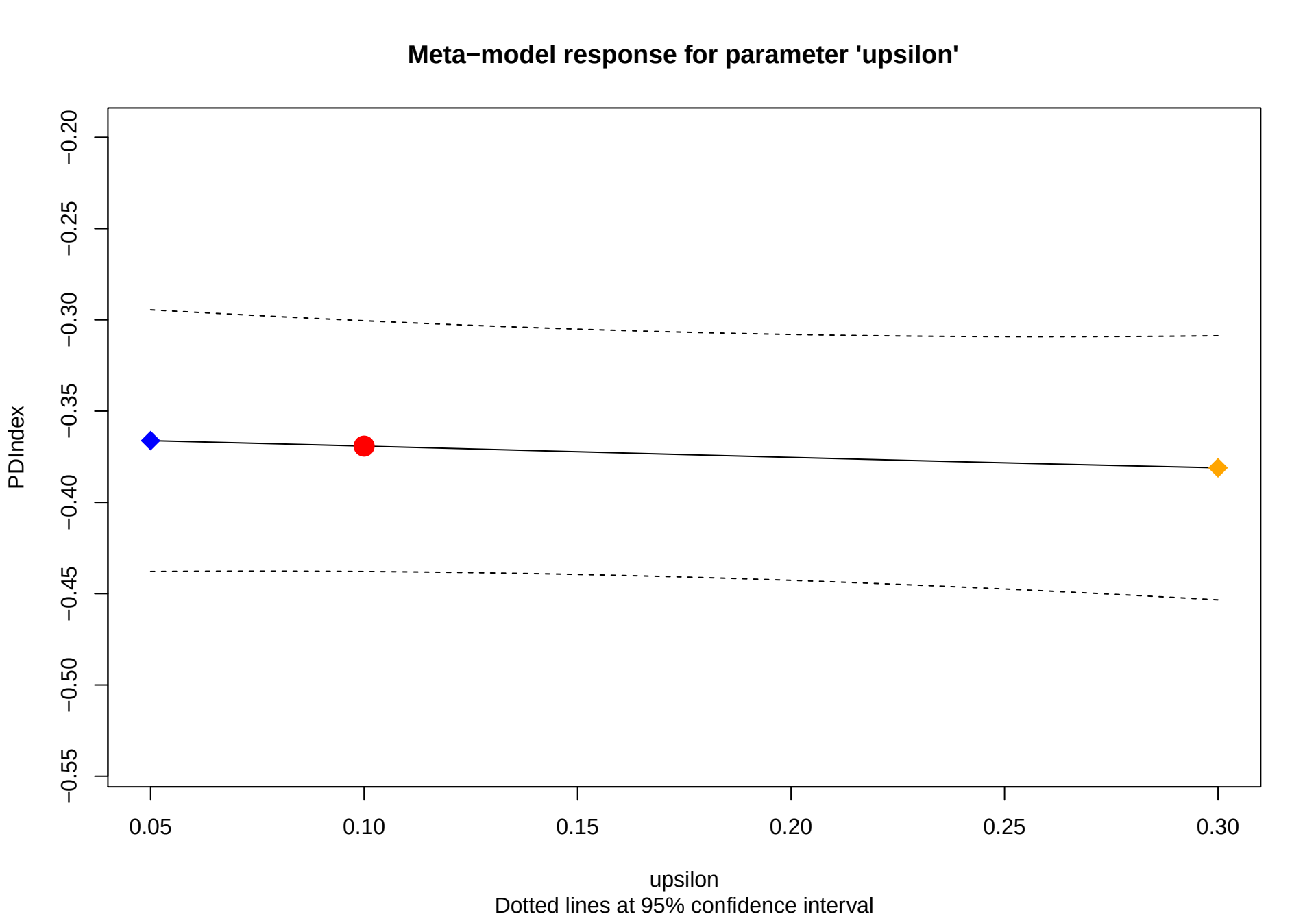
	Direct effects	Interactions
n	0.077	0.007
omega1	0.000	0.000
omega2	0.000	0.000
zeta1	0.001	0.000
zeta2	0.000	0.000
varPhi1	0.000	0.000
varPhi2	0.000	0.000
upsilon	0.005	0.000
chi	0.000	0.000
xi	0.000	0.000
gammau	0.908	0.009

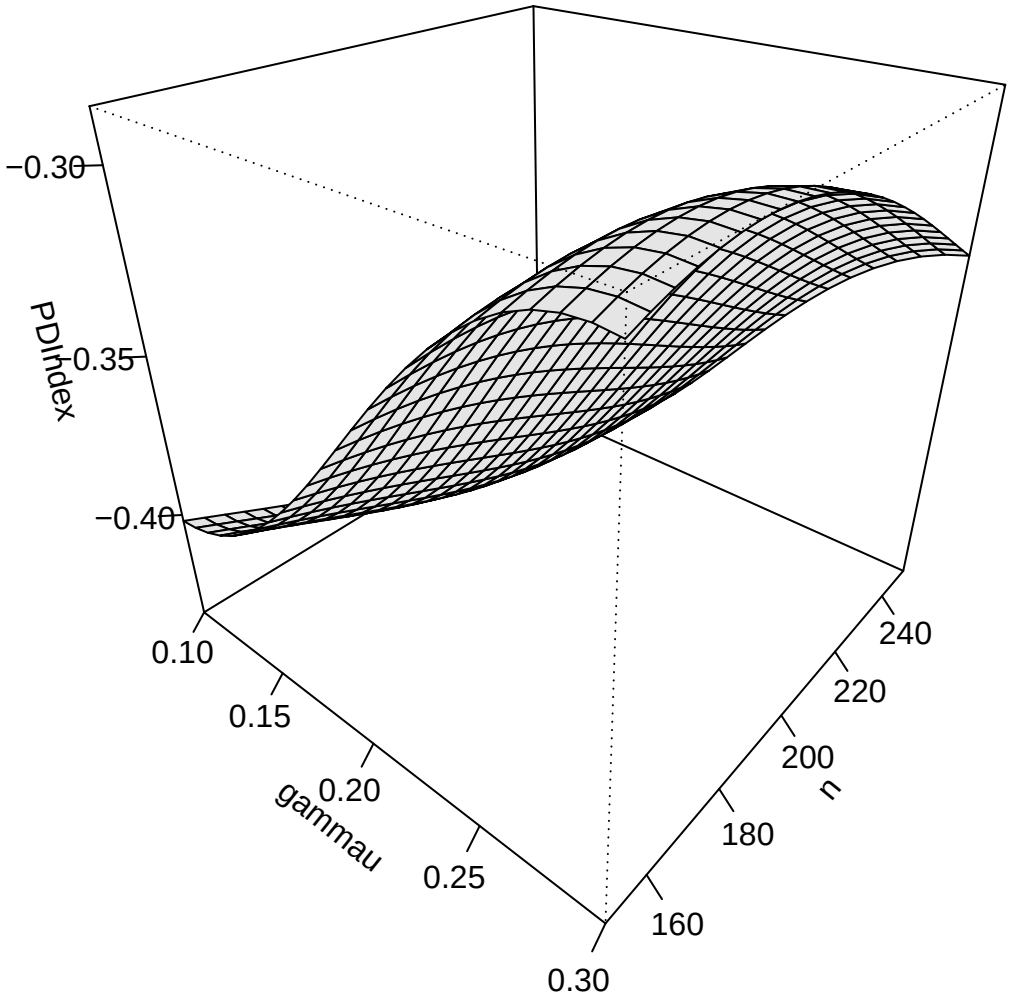
Samples = 1000 / time = [101,−1]

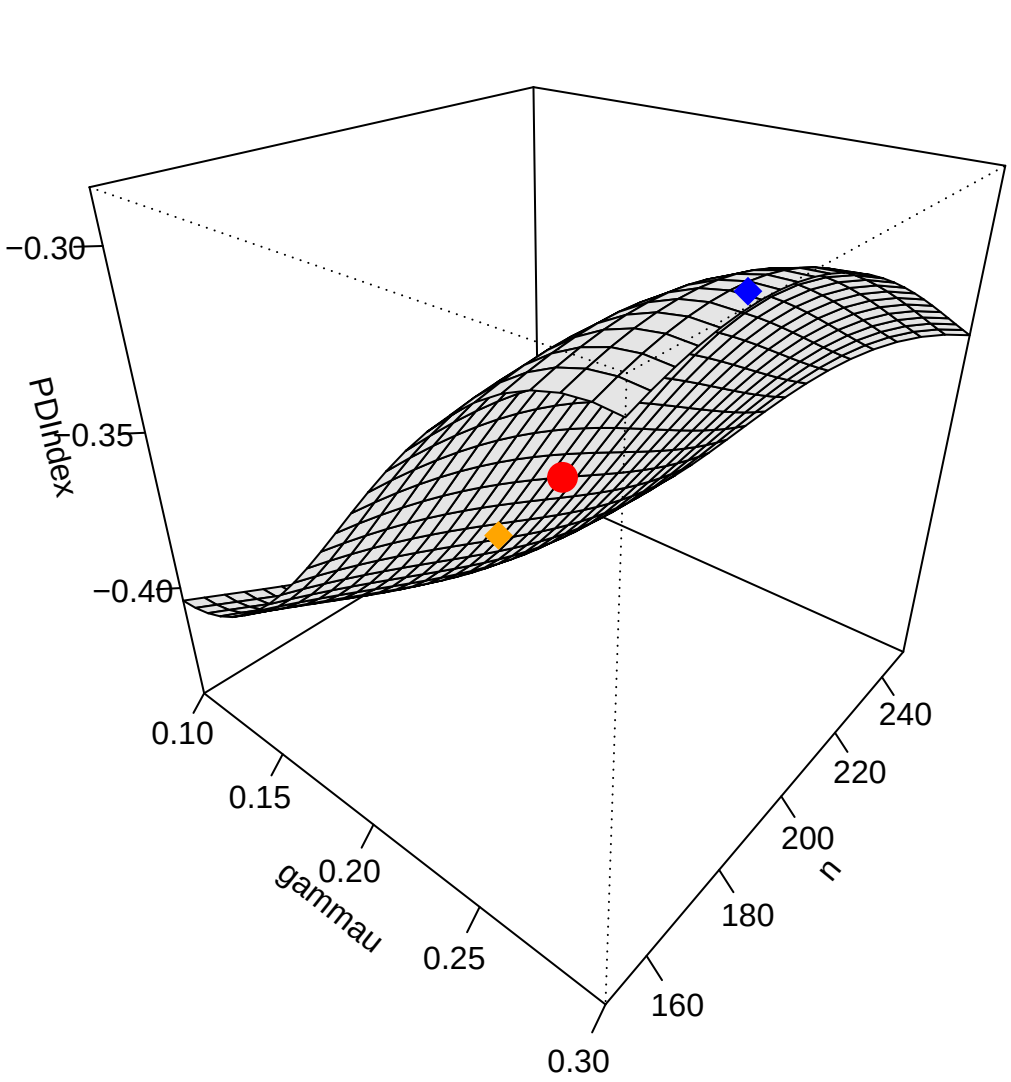

Sobol decomposition indexes (PDIndex)
1.0
0.8
0.6
0.4
0.2
0.0
Sobol Index
interactions
main effects
n
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
gammau
Samples = 1000 / time = [101,−1]


Meta−model response for parameter 'gammau'
PDIndex
−0.20
−0.25
−0.30
−0.35
−0.40
−0.45
−0.50
−0.55
0.10
0.15
0.20
0.25
0.30
gammau
Dotted lines at 95% confidence interval

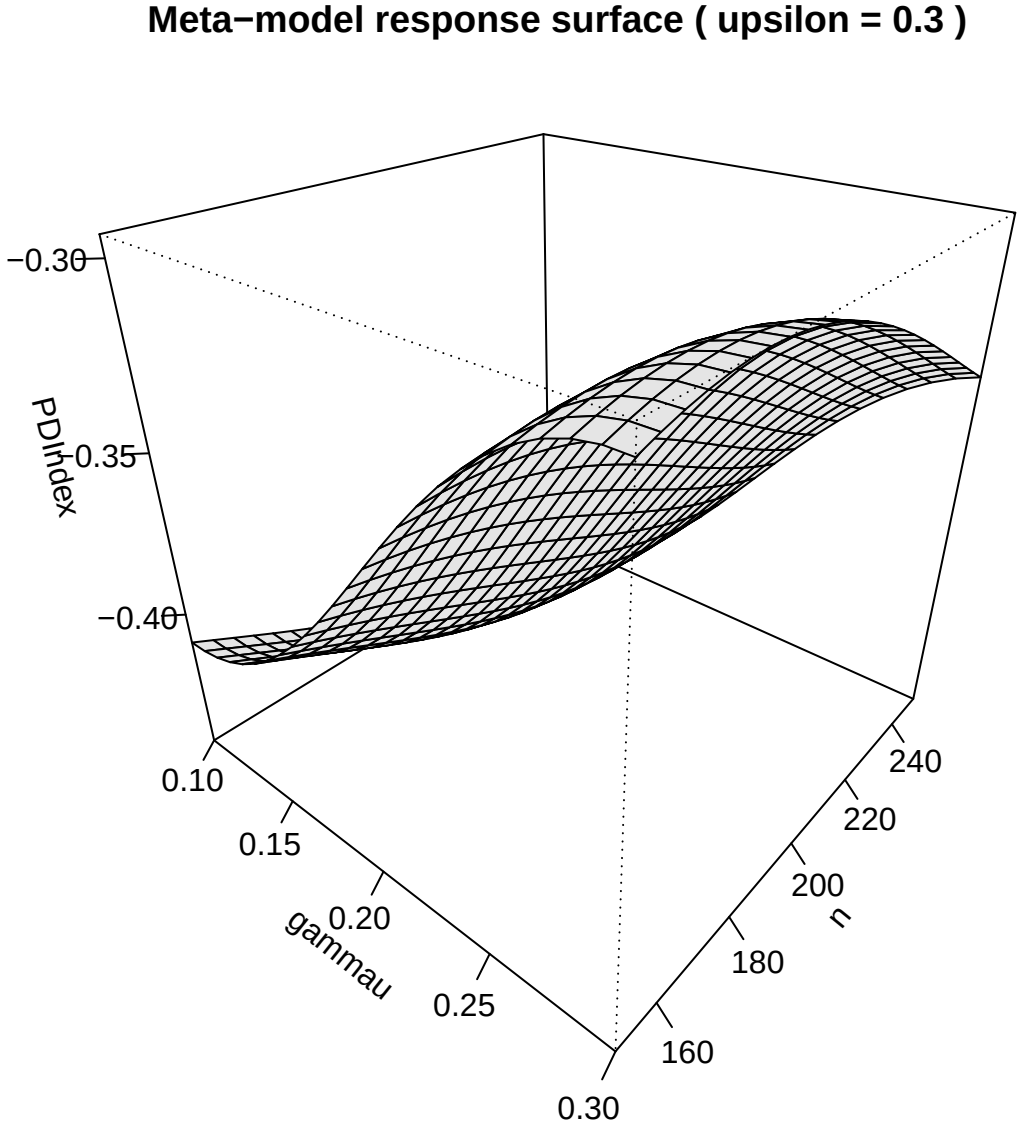

Meta−model response for parameter 'n'
PDIndex
−0.20
−0.25
−0.30
−0.35
−0.40
−0.45
−0.50
−0.55
160
180
200
220
240
n
Dotted lines at 95% confidence interval

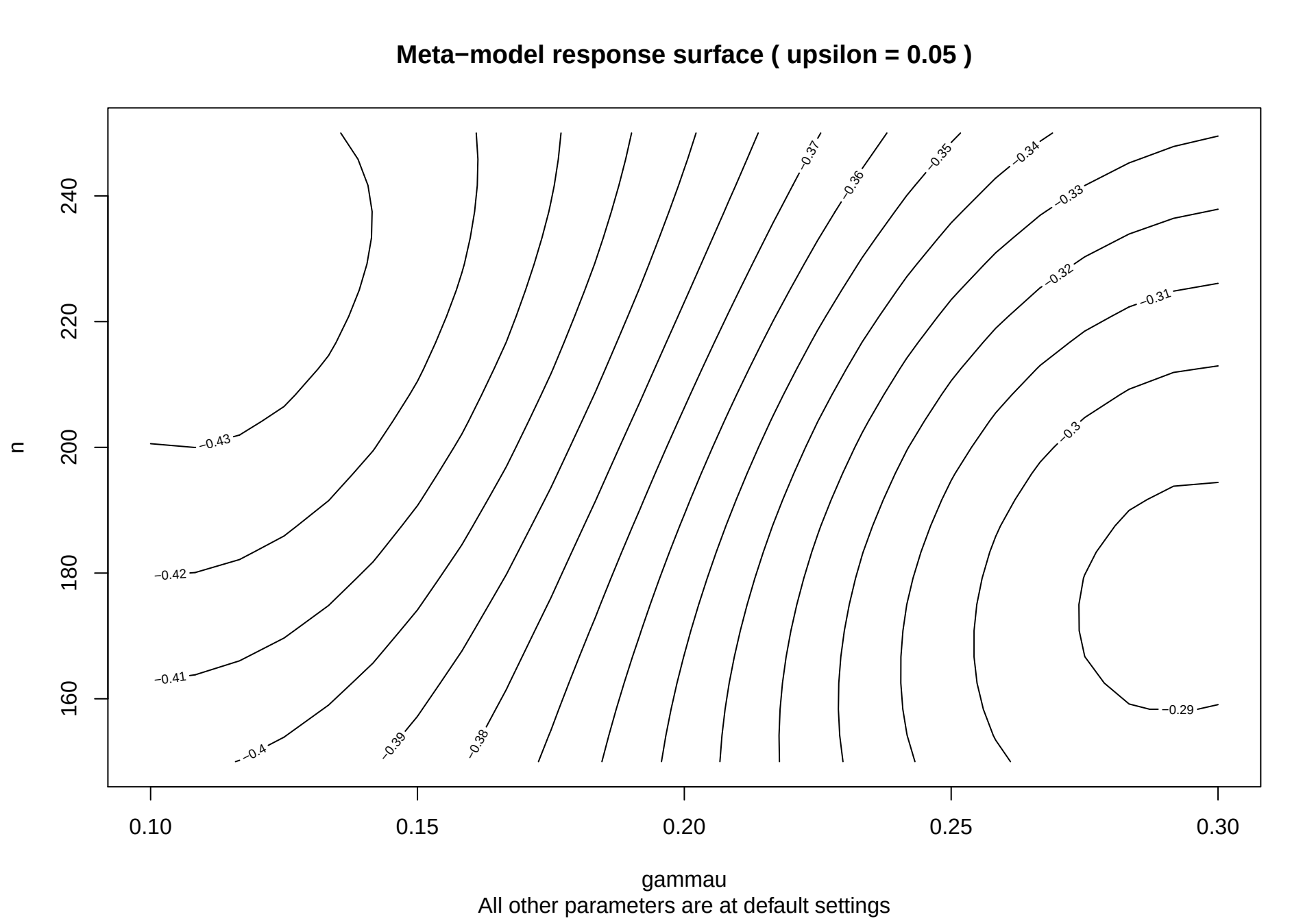

Meta−model response for parameter 'upsilon'
PDIndex
−0.20
−0.25
−0.30
−0.35
−0.40
−0.45
−0.50
−0.55
0.05
0.10
0.15
0.20
0.25
0.30
upsilon
Dotted lines at 95% confidence interval

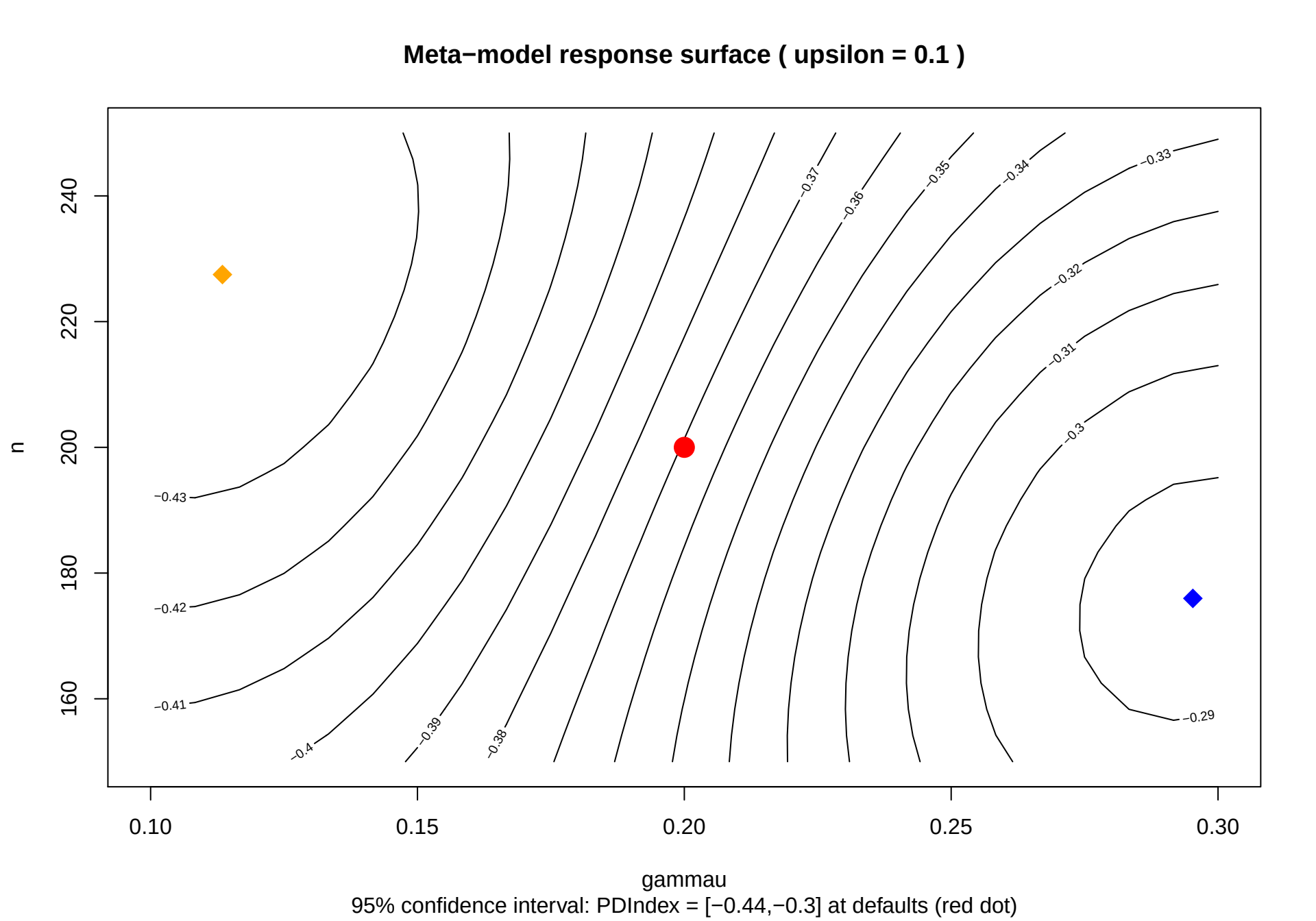

Meta−model response surface (upsilon = 0.05)
PDIhdex
−0.30
−0.35
−0.40
gammau
0.10
0.15
0.20
0.25
0.30
n
160
180
200
220
240
All other parameters are at default settings

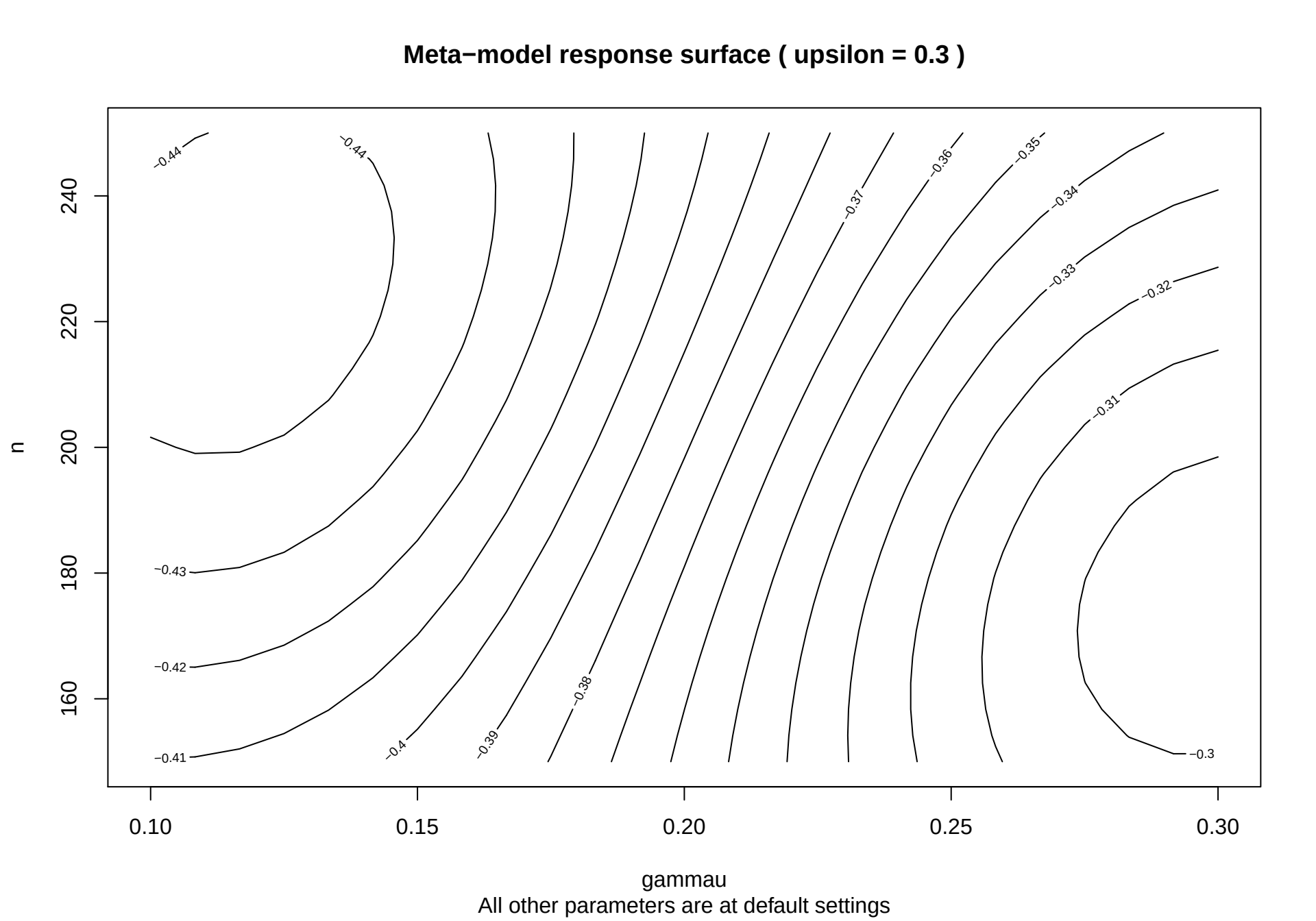


95% confidence interval: PDIndex = [−0.44,−0.3] at defaults (red dot)


Meta−model response surface (upsilon = 0.3)
−0.30
−0.35
−0.40
PDIndex
0.10
0.15
0.20
0.25
0.30
gammau
240
220
200
180
160
n
All other parameters are at default settings


Meta−model response surface (upsilon = 0.05)
n
240
220
200
180
160
0.10
0.15
0.20
0.25
0.30
gammau
All other parameters are at default settings
−0.43
−0.42
−0.41
−0.4
−0.39
−0.38
−0.37
−0.36
−0.35
−0.34
−0.33
−0.32
−0.31
−0.3
−0.29


Meta−model response surface (upsilon = 0.1)
n
240
220
200
180
160
0.10
0.15
0.20
0.25
0.30
gammau
−0.43
−0.42
−0.41
−0.4
−0.39
−0.38
−0.37
−0.36
−0.35
−0.34
−0.33
−0.32
−0.31
−0.3
−0.29
95% confidence interval: PDIndex = [−0.44,−0.3] at defaults (red dot)


Meta−model response surface (upsilon = 0.3)
n
240
220
200
180
160
−0.44
−0.44
−0.43
−0.42
−0.41
−0.4
−0.39
−0.38
−0.37
−0.36
−0.35
−0.34
−0.33
−0.32
−0.31
−0.3
0.10
0.15
0.20
0.25
0.30
gammau
All other parameters are at default settings