Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.7407	0.7004	0.7821	0.5018	0.7300
Q2 1st order poly. trend	0.7798	0.6842	0.7585	0.5999	0.7776
RMSE constant trend	0.0023	0.0023	0.0023	0.0023	0.0023
RMSE 1st order poly. trend	0.0008	0.0008	0.0008	0.0008	0.0008
MAE constant trend	0.0018	0.0018	0.0018	0.0018	0.0018
MAE 1st order poly. trend	0.0005	0.0005	0.0005	0.0005	0.0005
RMA constant trend	3.3048	3.3048	3.3048	3.3048	3.3048
RMA 1st order poly. trend	1.1278	1.1278	1.1278	1.1278	1.1278

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

Kriging meta−model estimation (standardized)

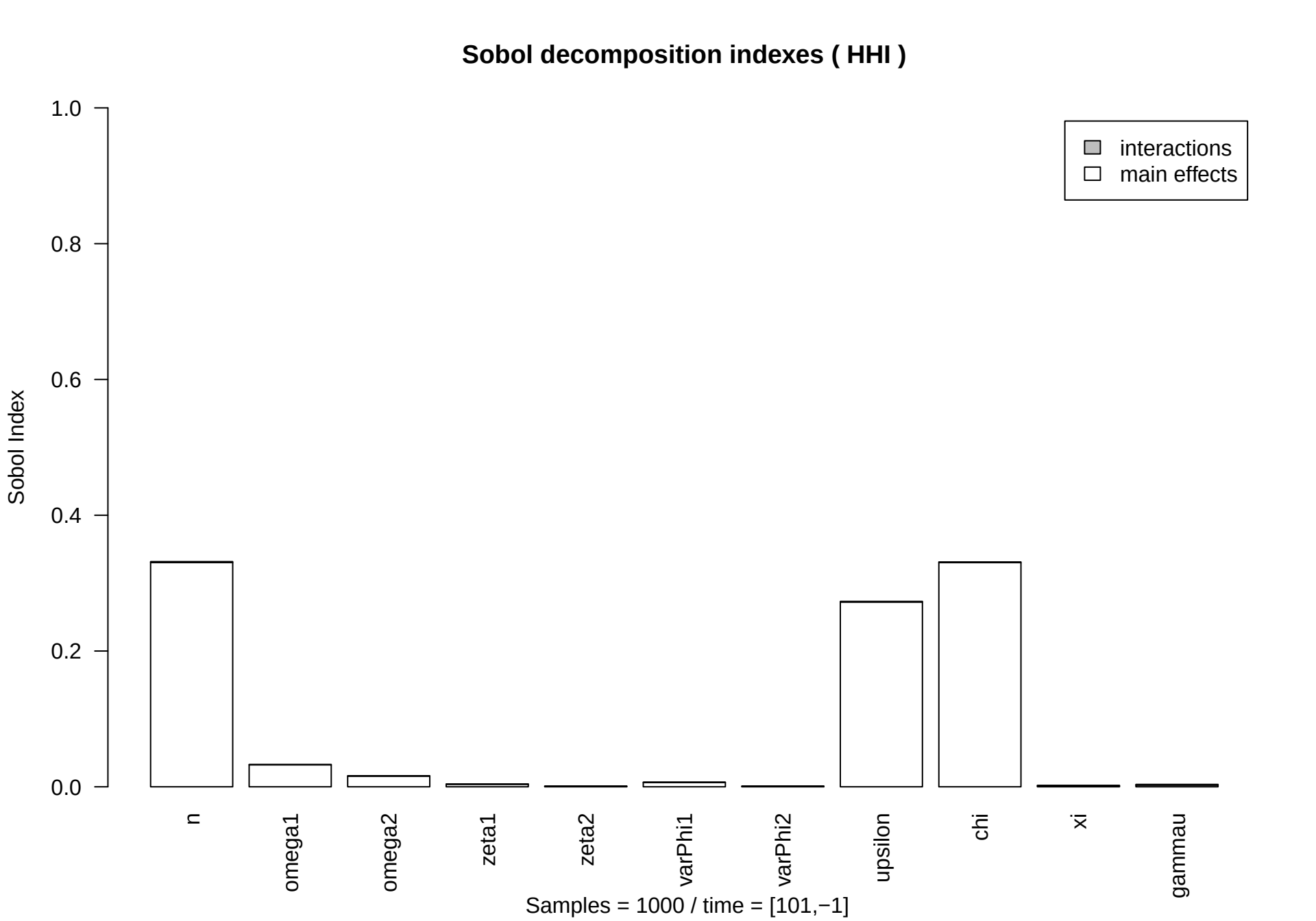
trend(intercept)	0.008	Trend specification	1st order poly.
trend(inclination)	−0.002	Correlation function	Matern 5/2
theta(n)	0.038	Cross−sample Q2	0.780
theta(omega1)	0.519	External RMSE	0.001
theta(omega2)	1.049	External MAE	0.001
theta(zeta1)	0.099	External RMA	1.128
theta(zeta2)	1.946	DoE samples	65
theta(varPhi1)	1.168	External samples	10
theta(varPhi2)	1.964		
theta(upsilon)	0.685		
theta(chi)	0.527		
theta(xi)	1.039		
theta(gammau)	0.741		

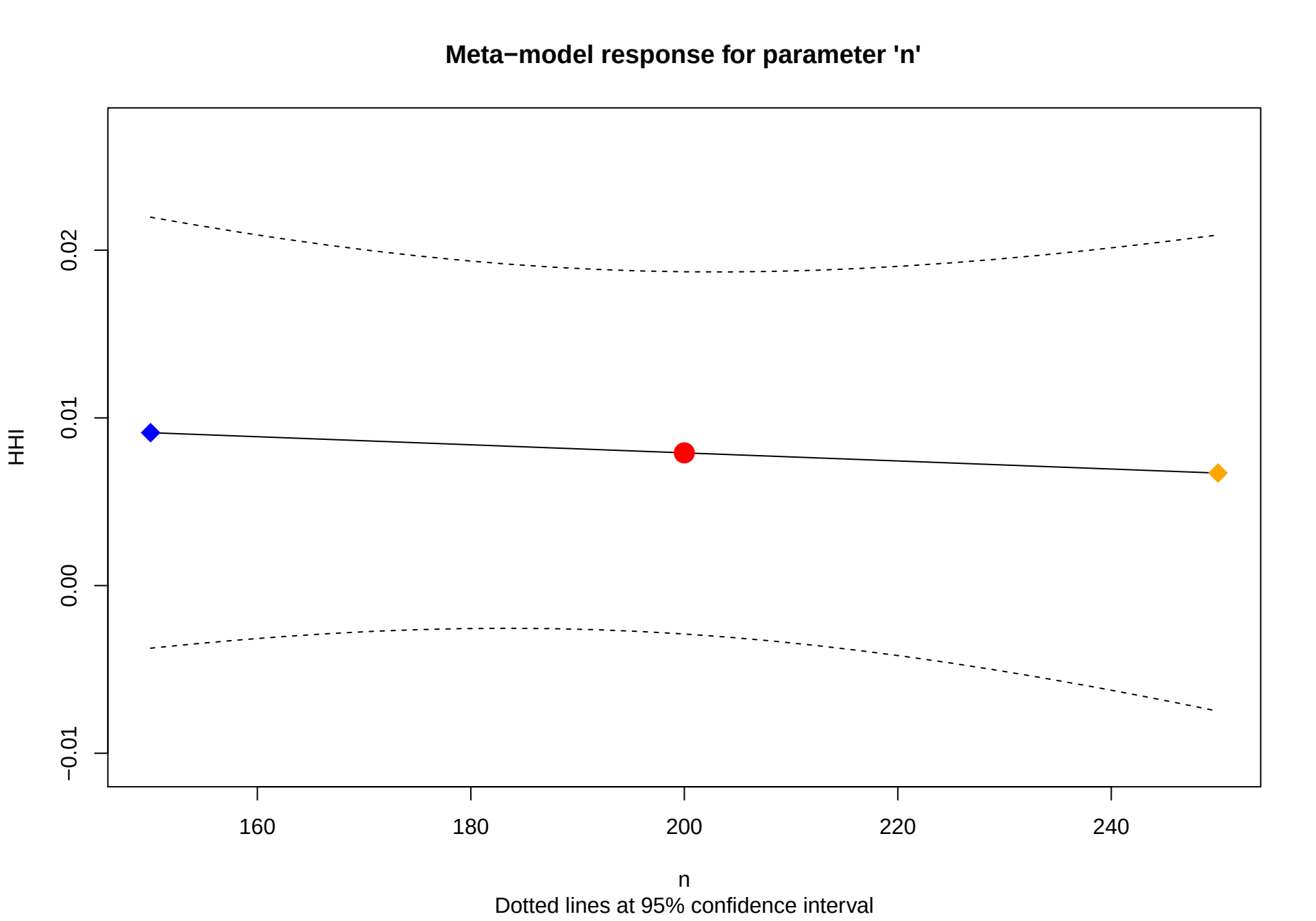
Variables rescaled to [0,1] / Average 95% CI = +/− 0.01
Predicted output at defaults: HHI = 0.01, 95% CI = [0,0.02], time = [101,−1]

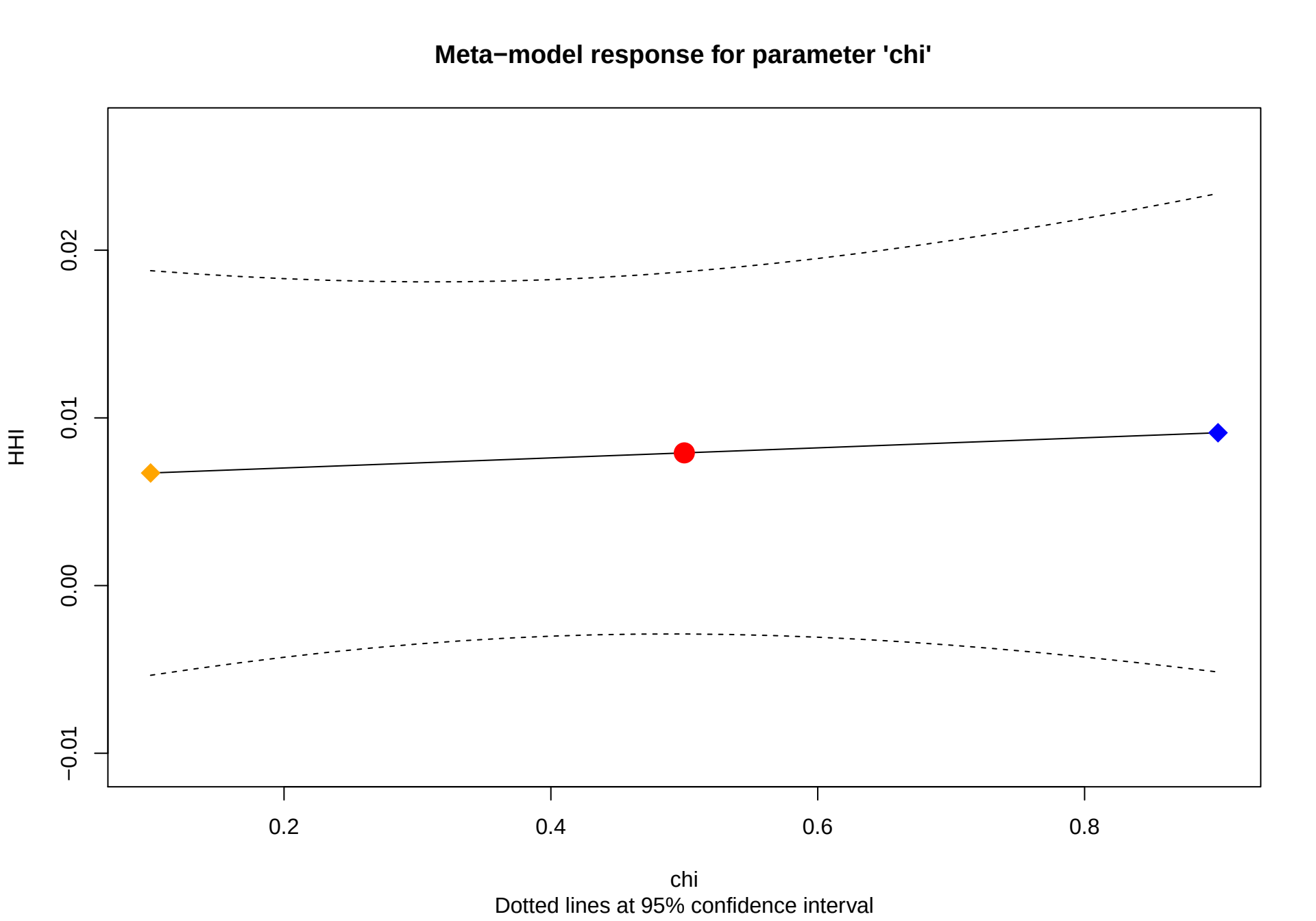
Sobol decomposition indexes (HHI)

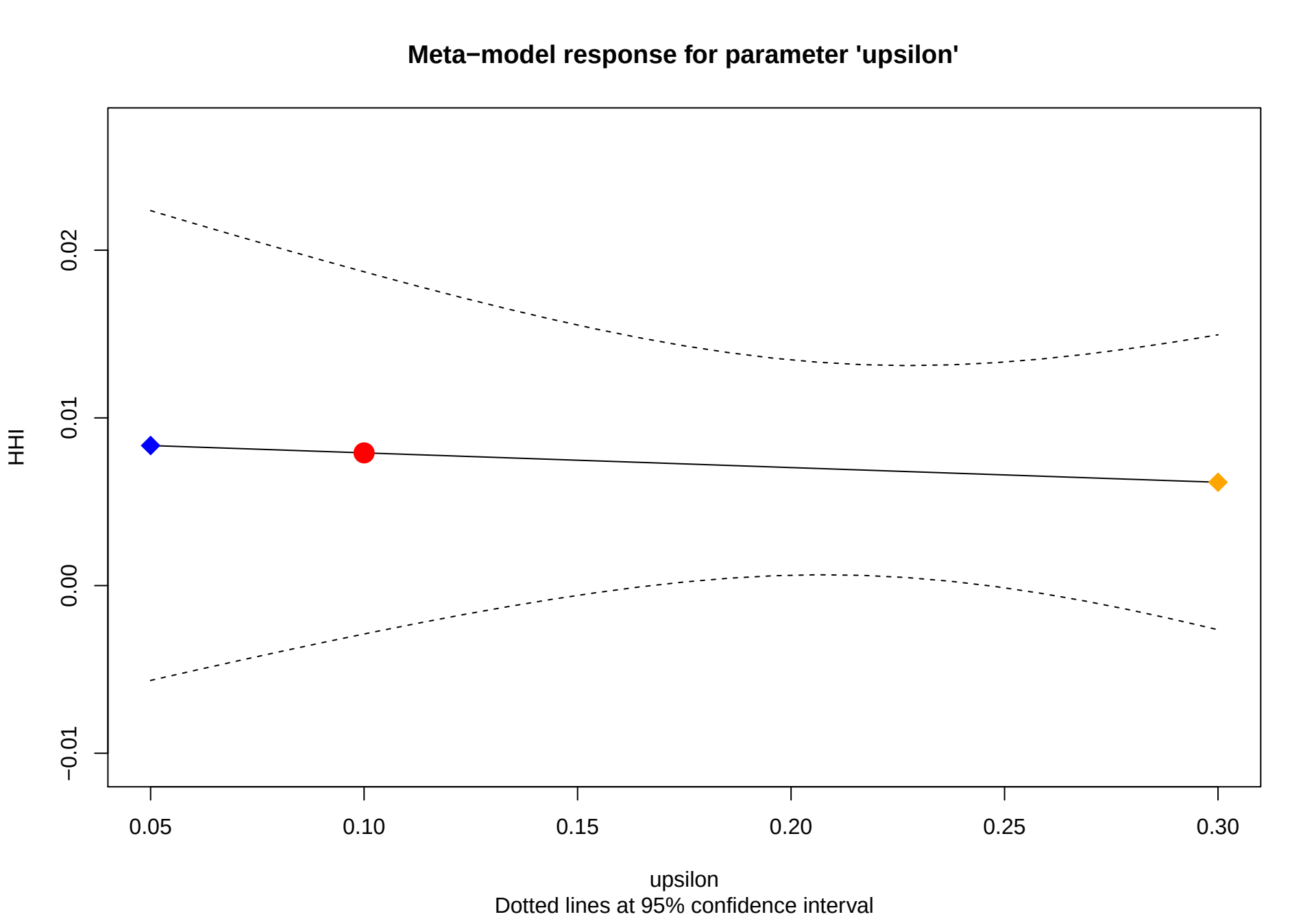
	Direct effects	Interactions
n	0.330	0.001
omega1	0.032	0.001
omega2	0.016	0.001
zeta1	0.004	0.000
zeta2	0.001	0.000
varPhi1	0.006	0.000
varPhi2	0.001	0.000
upsilon	0.272	0.001
chi	0.330	0.001
xi	0.001	0.001
gammau	0.003	0.001

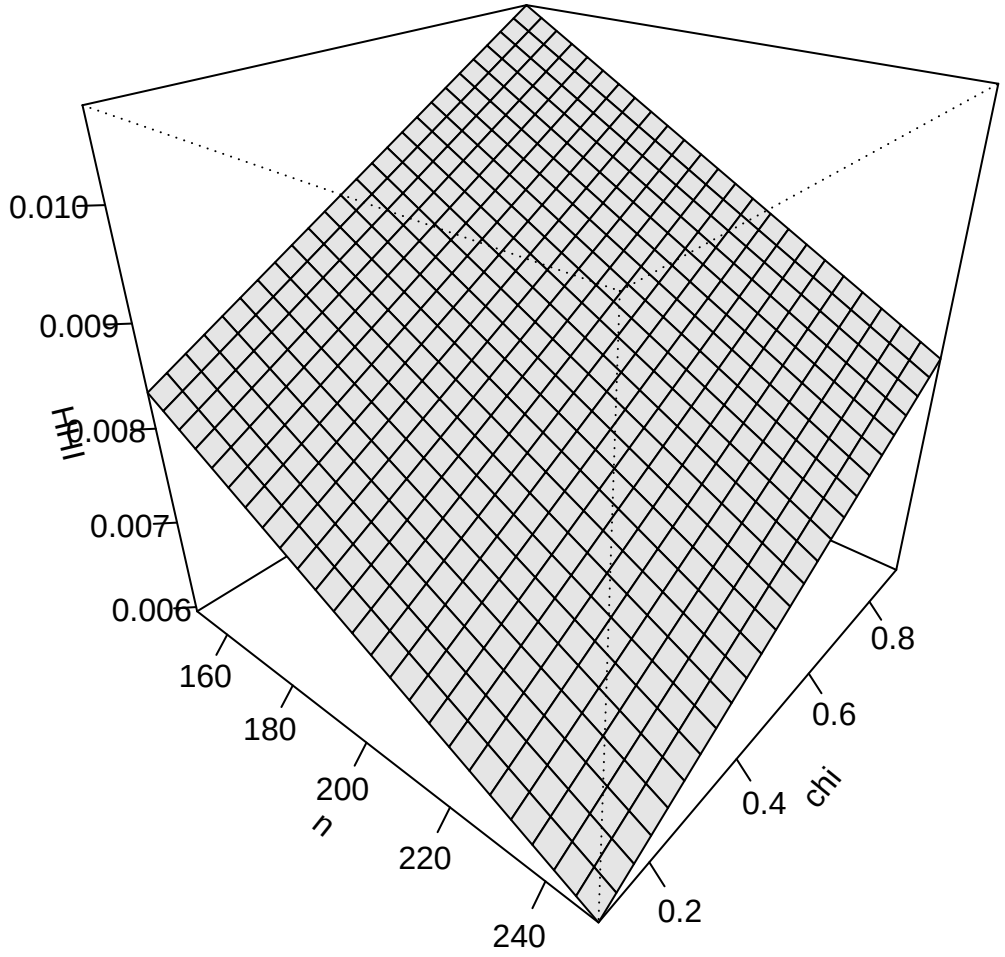
Samples = 1000 / time = [101,−1]

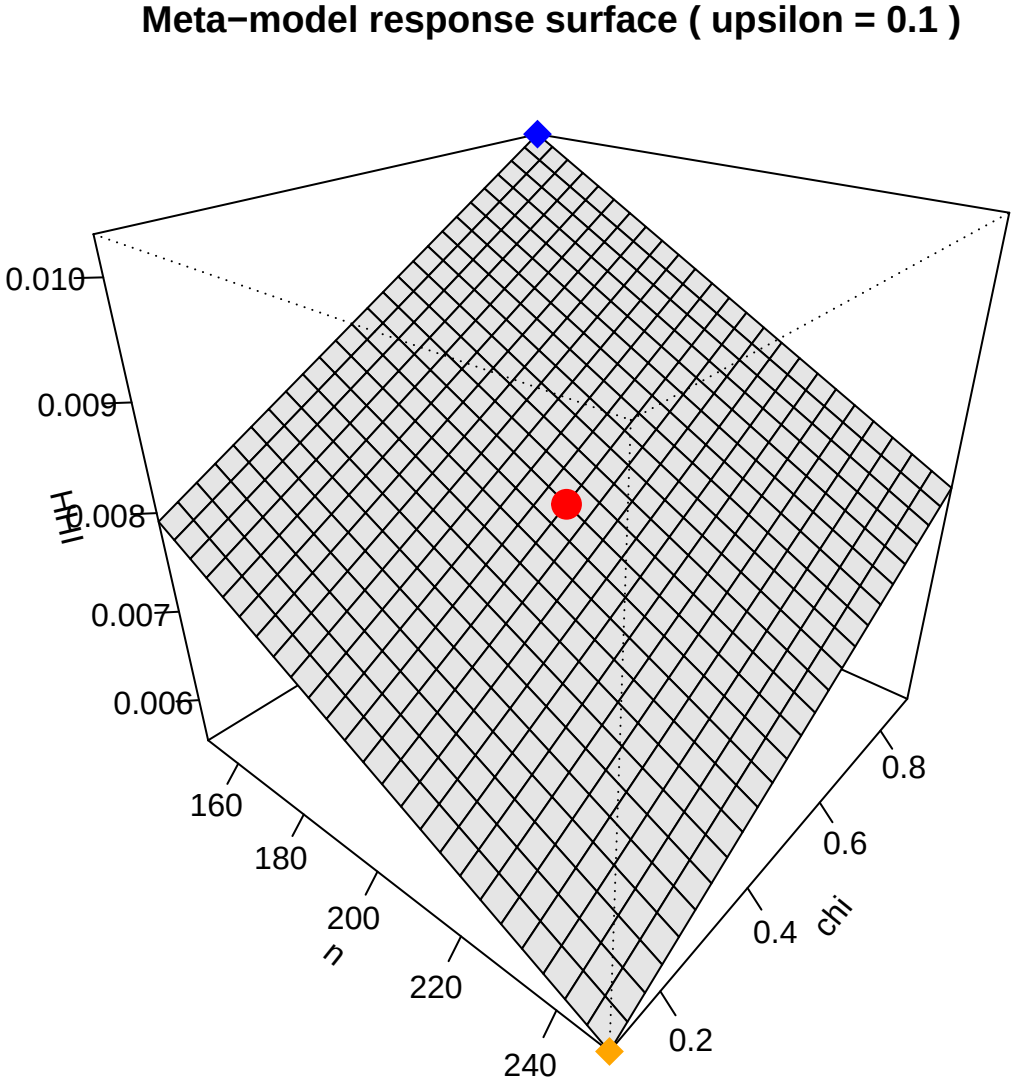

Sobol decomposition indexes (HHI)
interactions
main effects
Sobol Index
1.0
0.8
0.6
0.4
0.2
0.0
n
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
gammau
Samples = 1000 / time = [101,−1]


Meta−model response for parameter 'n'
HHI
0.02
0.01
0.00
−0.01
160
180
200
220
240
n
Dotted lines at 95% confidence interval

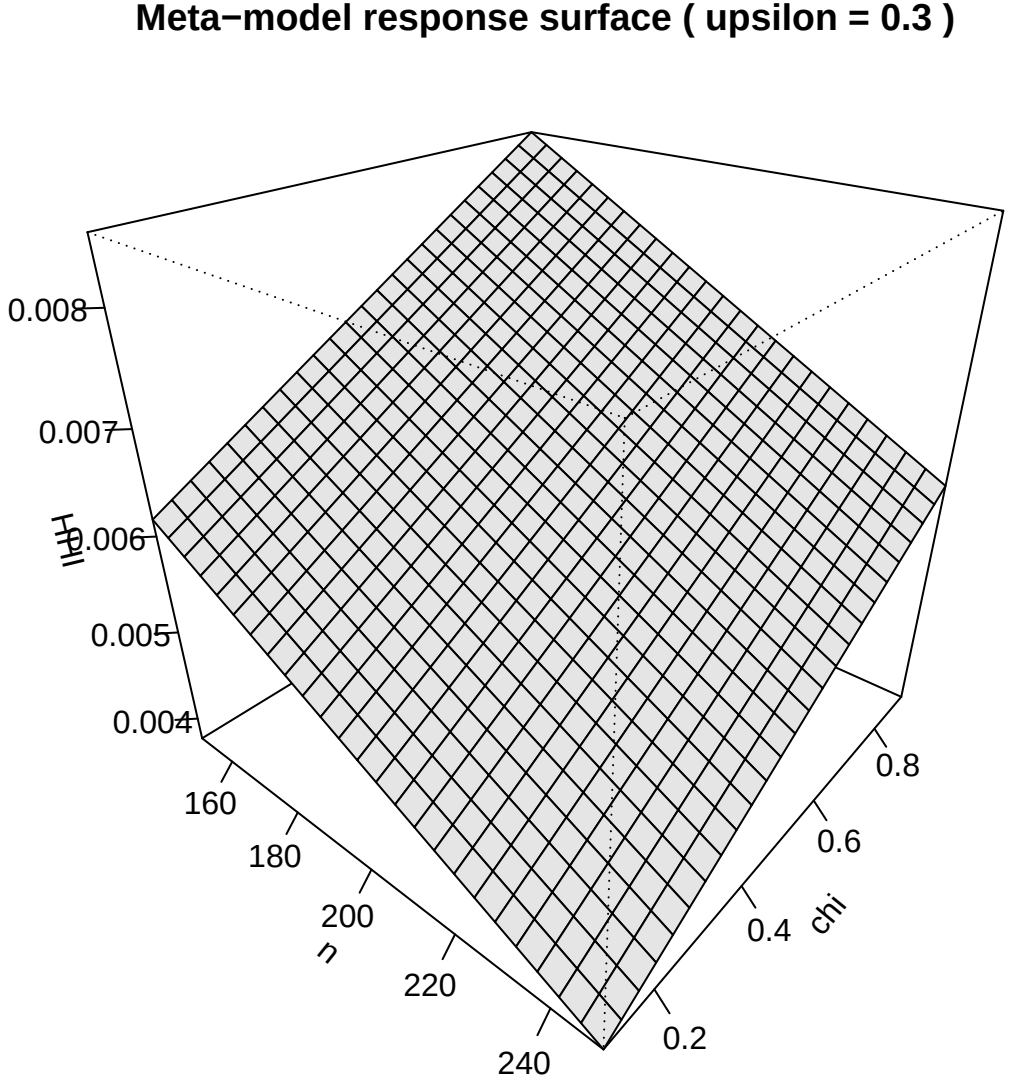

Meta−model response for parameter 'chi'
HHI
0.02
0.01
0.00
−0.01
0.2
0.4
0.6
0.8
chi
Dotted lines at 95% confidence interval

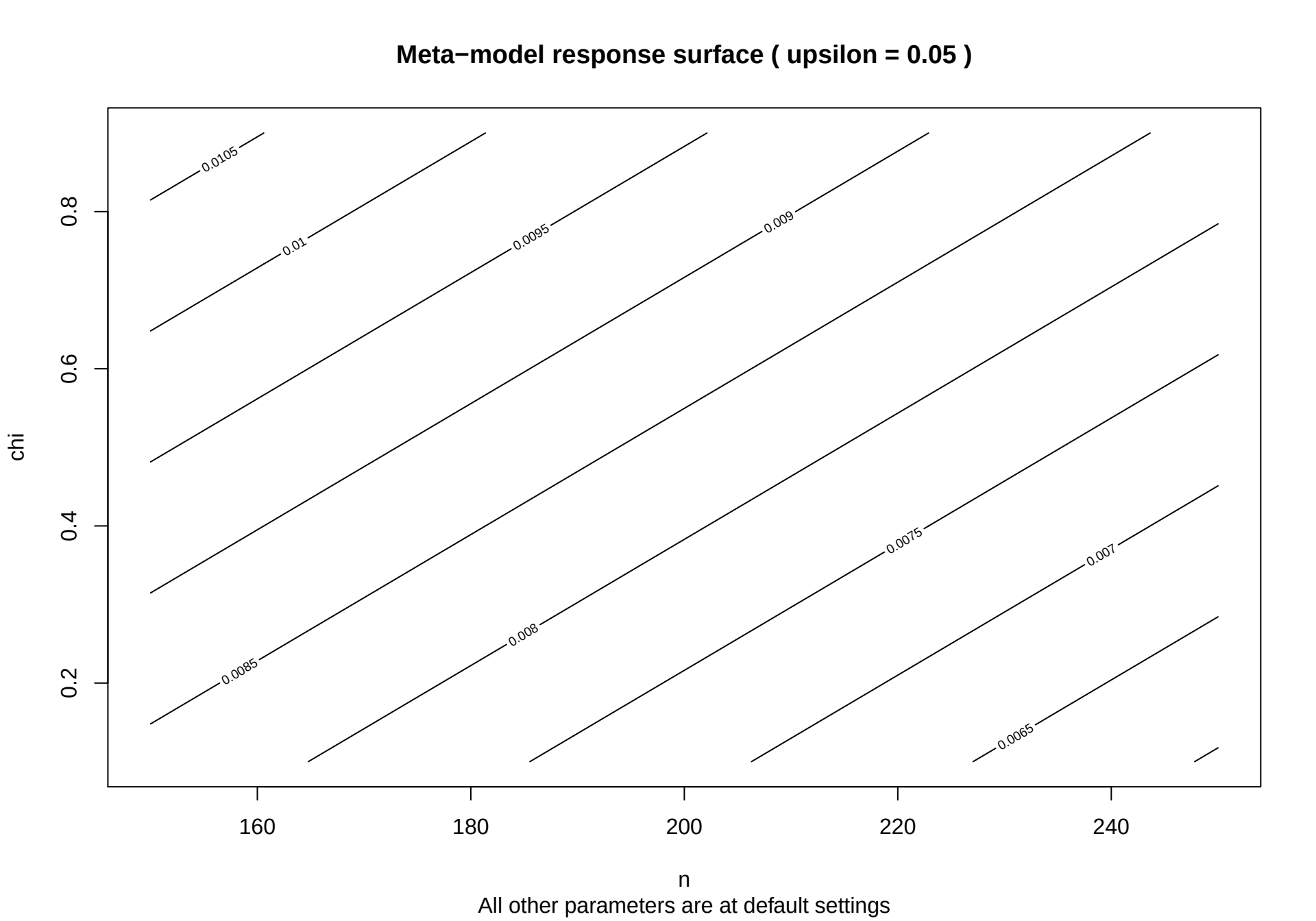

Meta−model response for parameter 'upsilon'
HHI
0.02
0.01
0.00
−0.01
0.05
0.10
0.15
0.20
0.25
0.30
upsilon
Dotted lines at 95% confidence interval

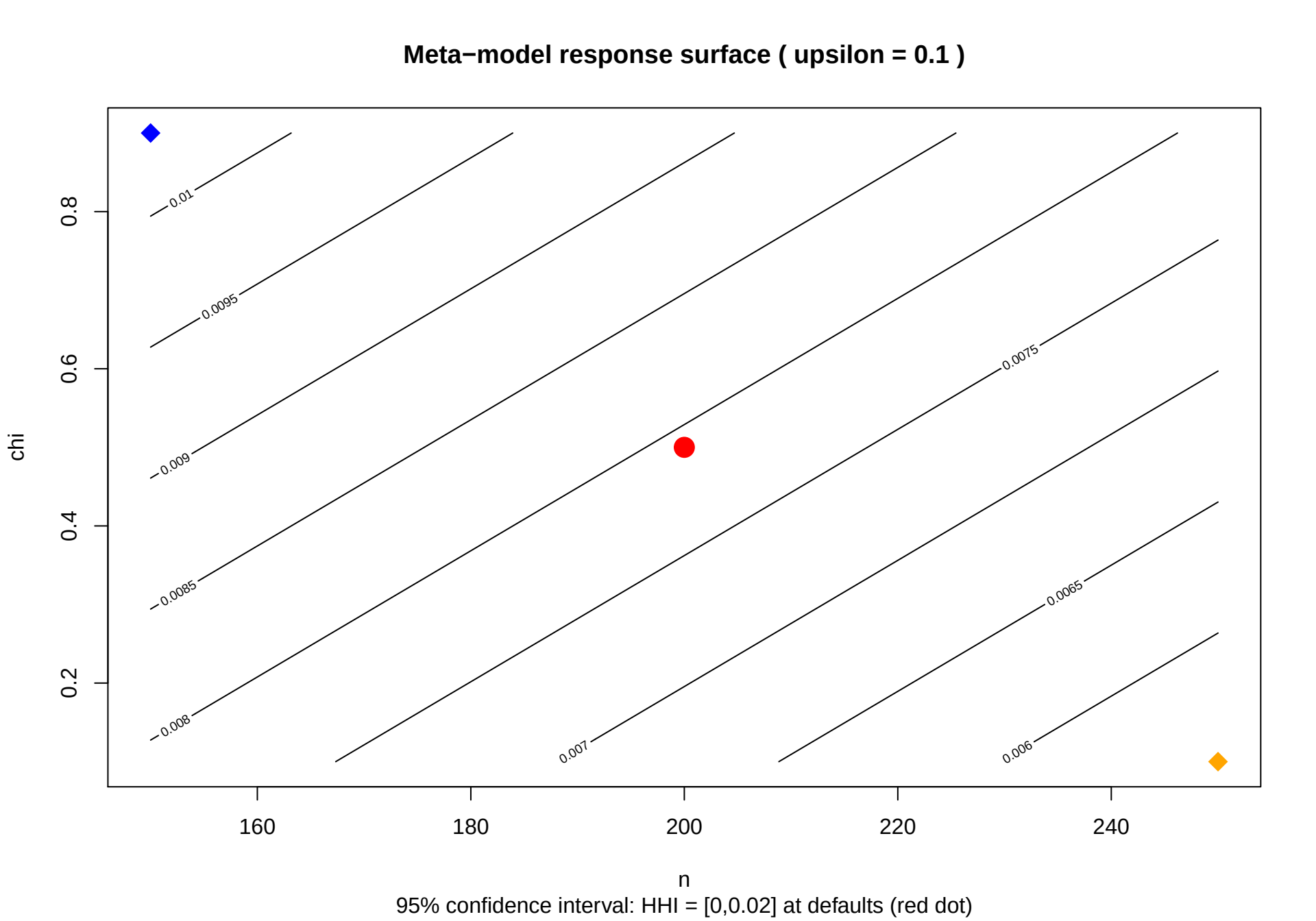

Meta−model response surface (upsilon = 0.05)
0.010
0.009
0.008
0.007
0.006
Hii
160
180
200
220
240
n
0.2
0.4
0.6
0.8
chi
All other parameters are at default settings

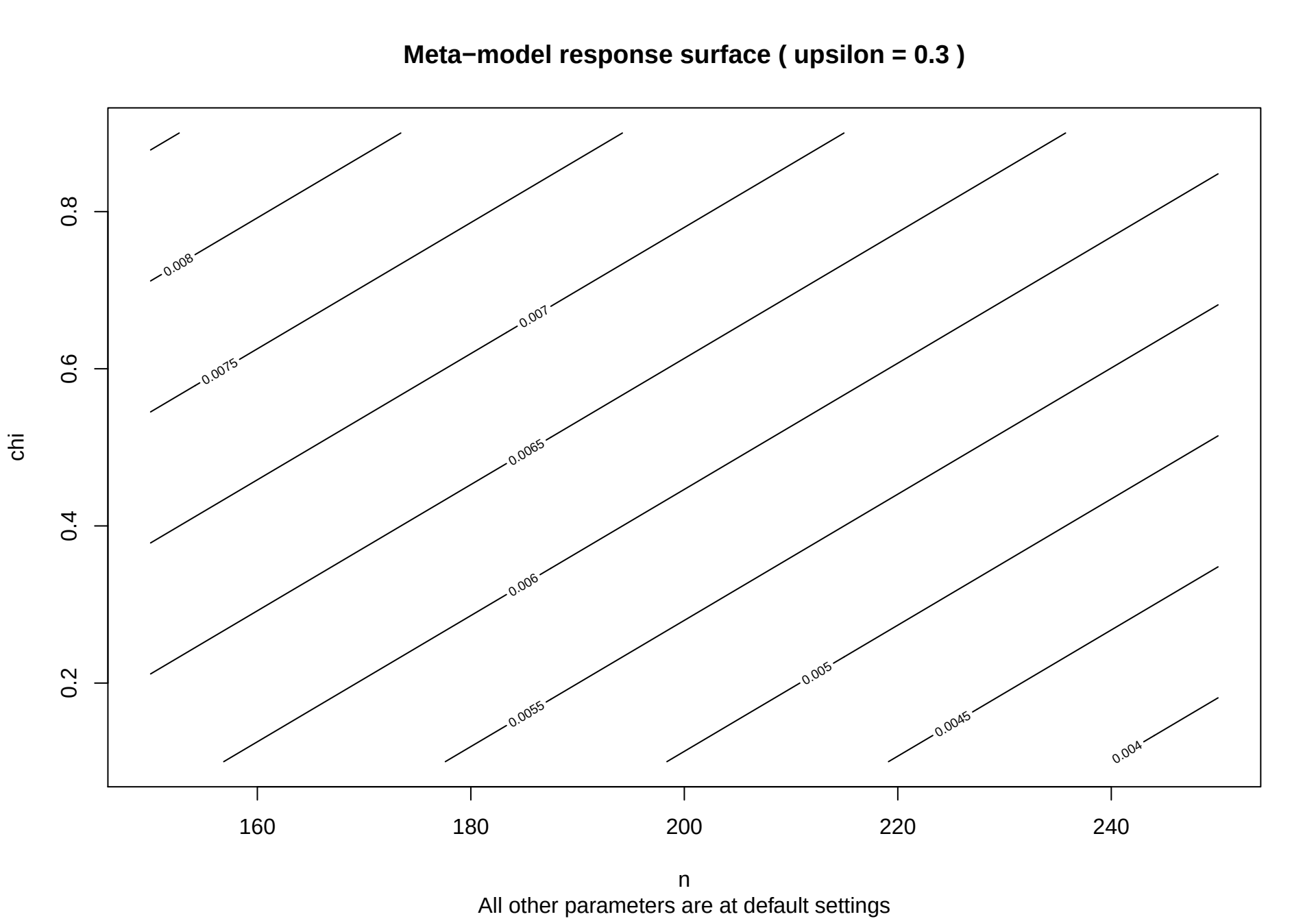


95% confidence interval: HHI = [0,0.02] at defaults (red dot)


Meta−model response surface (upsilon = 0.3)
0.008
0.007
0.006
0.005
0.004
Hill
160
180
200
220
240
n
0.2
0.4
0.6
0.8
chi
All other parameters are at default settings


Meta−model response surface (upsilon = 0.05)
0.0105
0.01
0.0095
0.009
0.0085
0.008
0.0075
0.007
0.0065
chi
0.2
0.4
0.6
0.8
160
180
200
220
240
n
All other parameters are at default settings


Meta−model response surface (upsilon = 0.1)
chi
n
0.2
0.4
0.6
0.8
160
180
200
220
240
0.01
0.0095
0.009
0.0085
0.008
0.007
0.0075
0.0065
0.006
95% confidence interval: HHI = [0,0.02] at defaults (red dot)


Meta−model response surface (upsilon = 0.3)
chi
0.2
0.4
0.6
0.8
0.008
0.0075
0.007
0.0065
0.006
0.0055
0.005
0.0045
0.004
160
180
200
220
240
n
All other parameters are at default settings