Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.8338	0.8200	0.8648	0.5873	0.8454
Q2 1st order poly. trend	0.8161	0.8182	0.8661	0.6378	0.8521
RMSE constant trend	0.0034	0.0034	0.0034	0.0034	0.0034
RMSE 1st order poly. trend	0.0026	0.0026	0.0026	0.0026	0.0026
MAE constant trend	0.0024	0.0024	0.0024	0.0024	0.0024
MAE 1st order poly. trend	0.0015	0.0015	0.0015	0.0015	0.0015
RMA constant trend	3.2498	3.2498	3.2498	3.2498	3.2498
RMA 1st order poly. trend	2.9699	2.9699	2.9699	2.9699	2.9699

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

Kriging meta−model estimation (standardized)

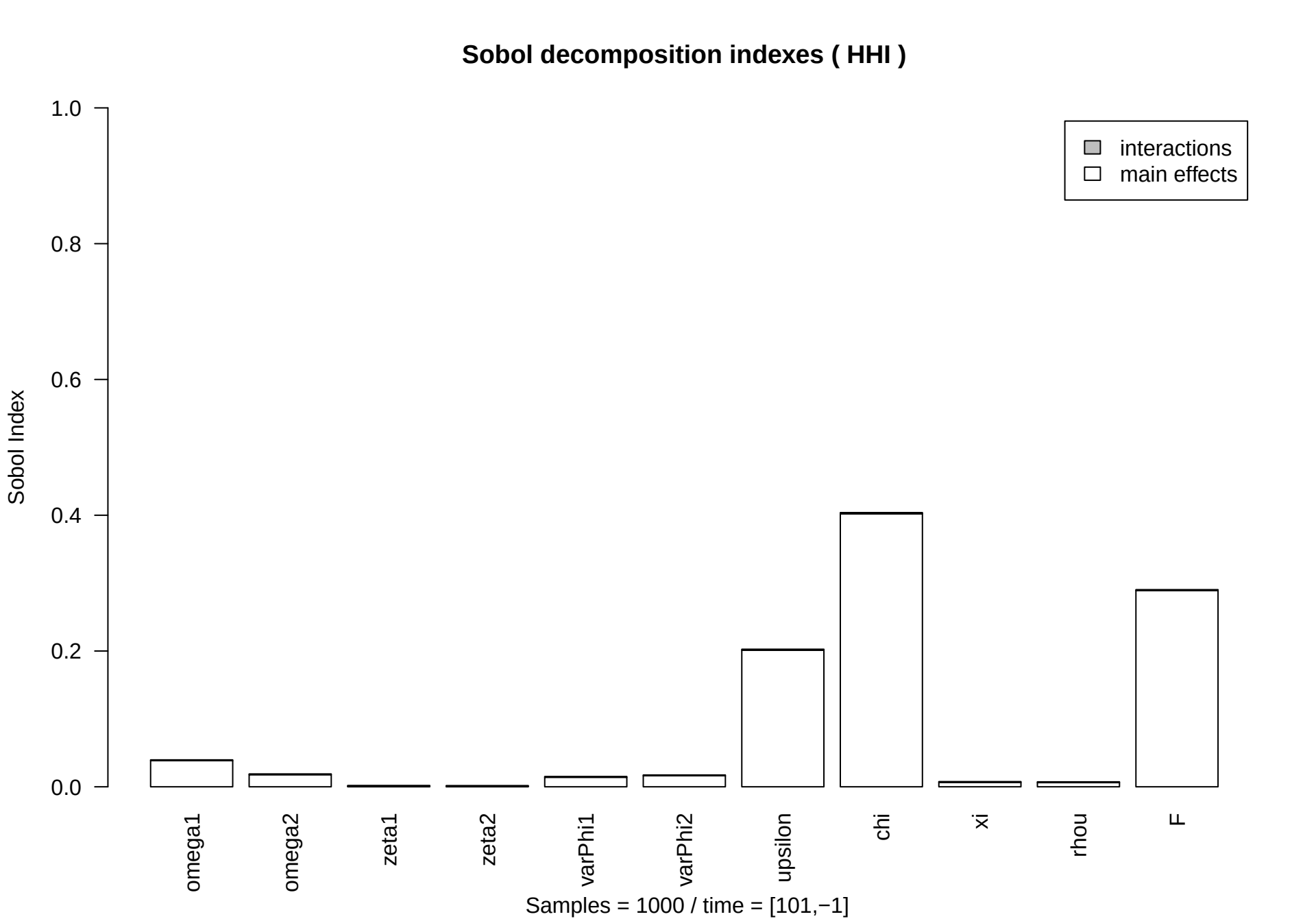
trend(intercept)	0.008	Trend specification	1st order poly.
trend(inclination)	0.001	Correlation function	Gaussian
theta(omega1)	1.394	Cross−sample Q2	0.866
theta(omega2)	0.589	External RMSE	0.003
theta(zeta1)	1.641	External MAE	0.001
theta(zeta2)	0.607	External RMA	2.970
theta(varPhi1)	1.175	DoE samples	65
theta(varPhi2)	0.814	External samples	20
theta(upsilon)	1.225		
theta(chi)	0.537		
theta(xi)	0.029		
theta(gammau)	1.476		
theta(n)	0.121		

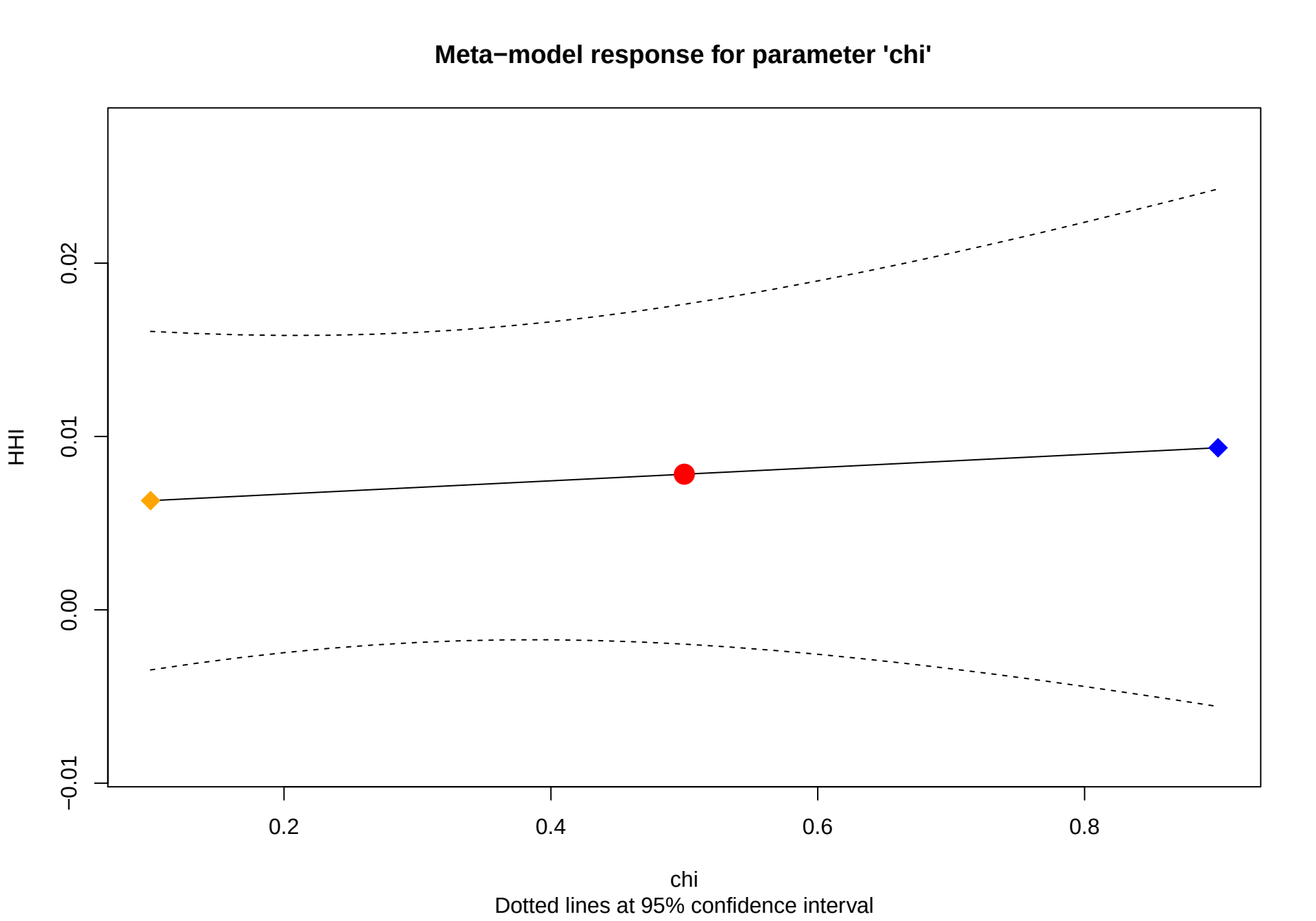
Variables rescaled to [0,1] / Average 95% CI = +/− 0.01
Predicted output at defaults: HHI = 0.01, 95% CI = [0,0.02], time = [101,−1]

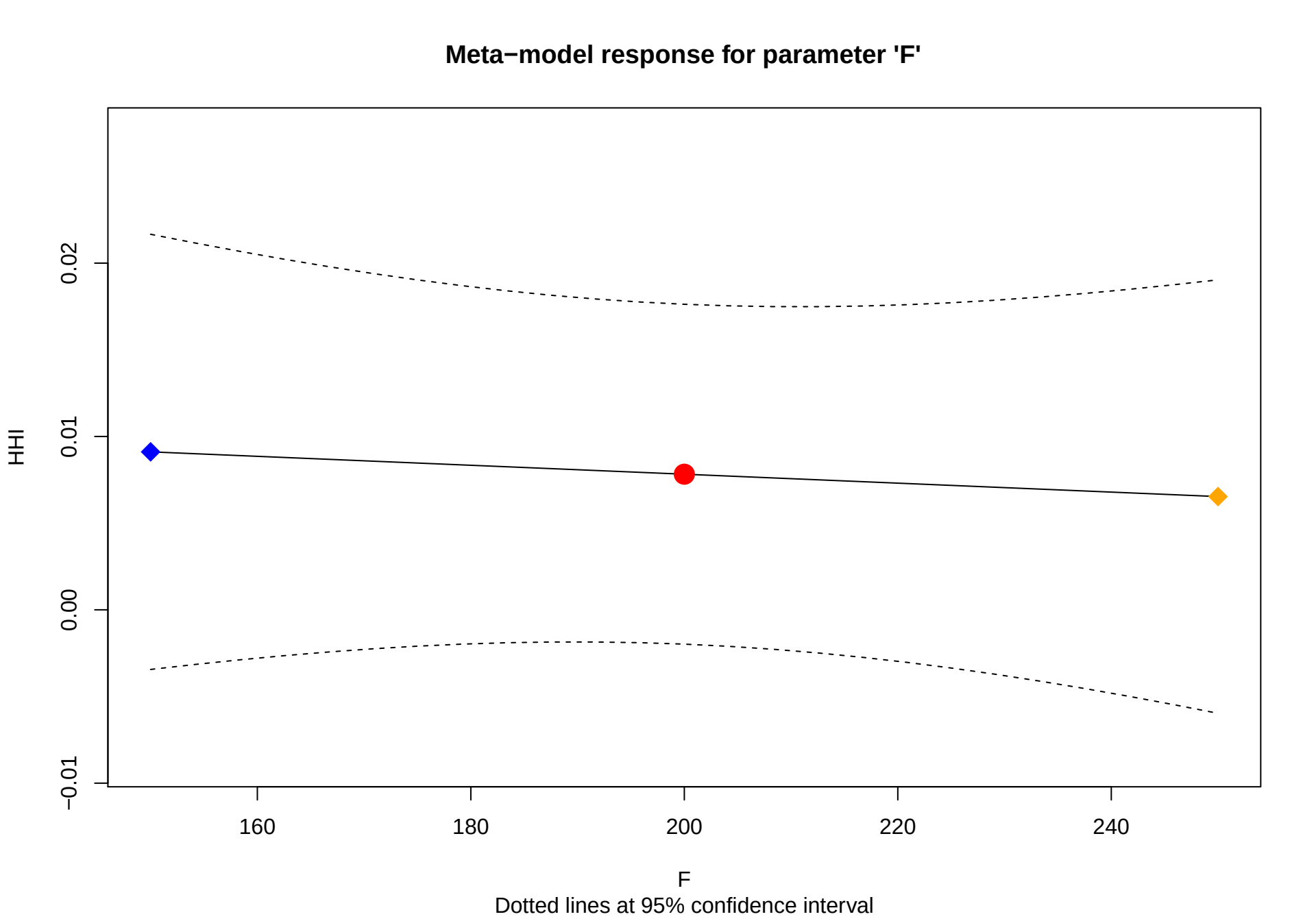
Sobol decomposition indexes (HHI)

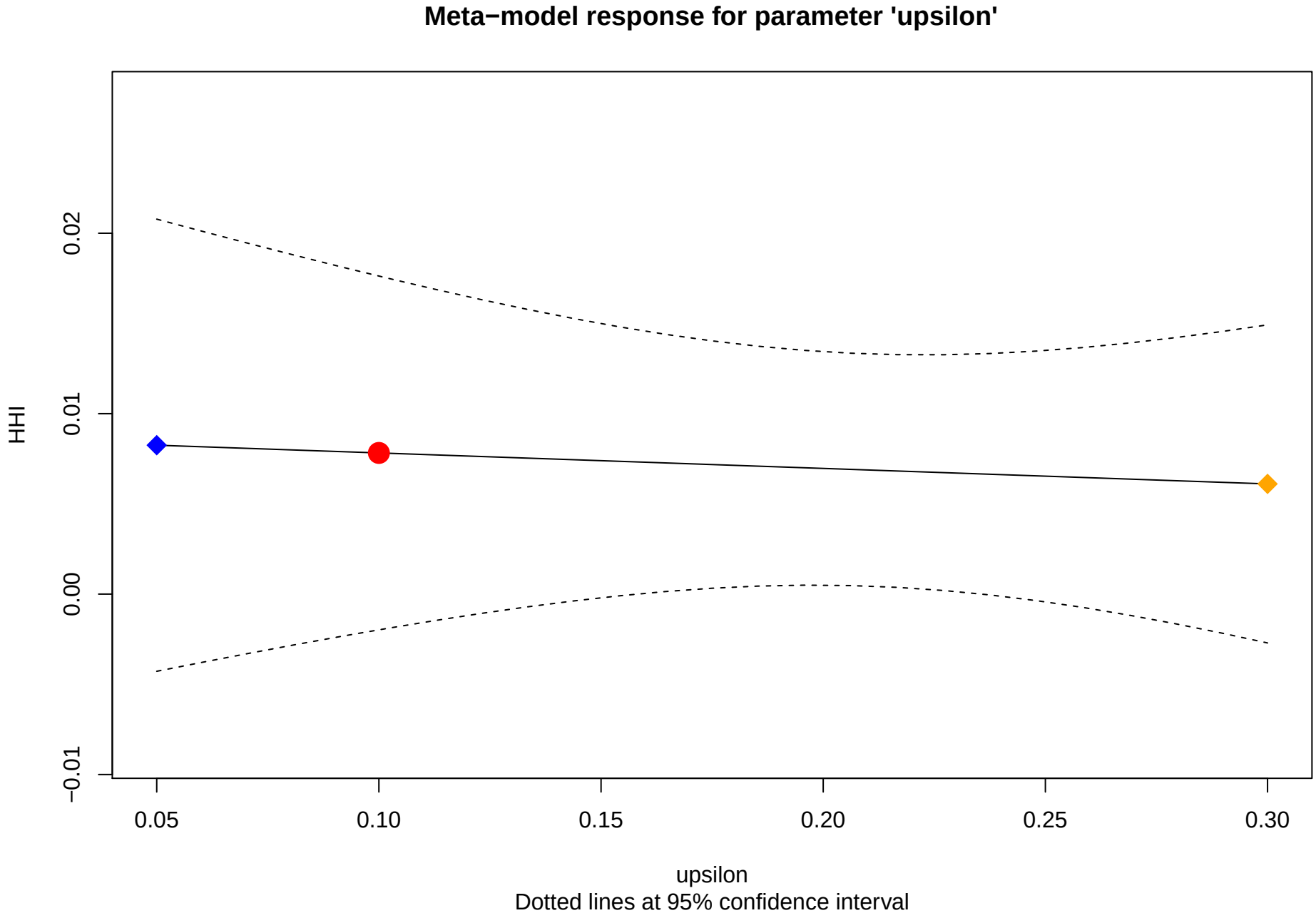
	Direct effects	Interactions
omega1	0.038	0.001
omega2	0.018	0.001
zeta1	0.001	0.001
zeta2	0.001	0.001
varPhi1	0.014	0.001
varPhi2	0.016	0.001
upsilon	0.201	0.001
chi	0.402	0.002
xi	0.006	0.001
gammau	0.006	0.001
n	0.289	0.001

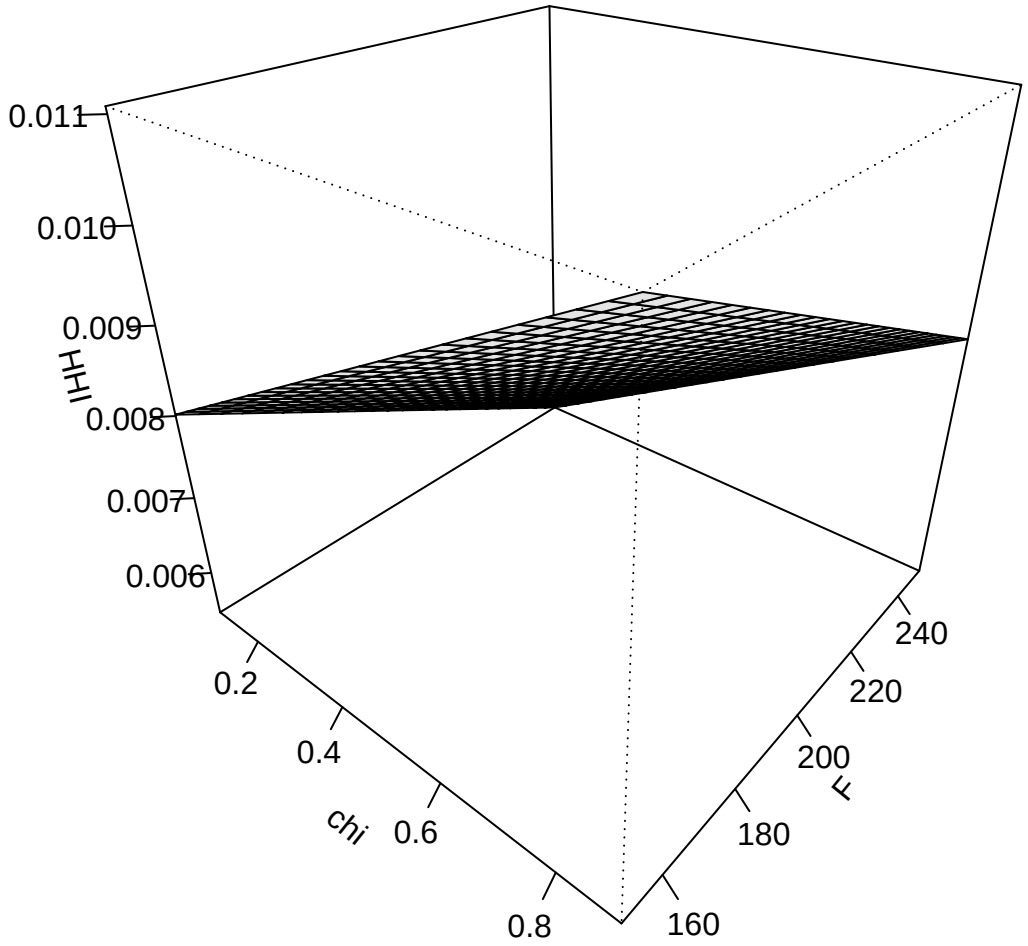
Samples = 1000 / time = [101,−1]

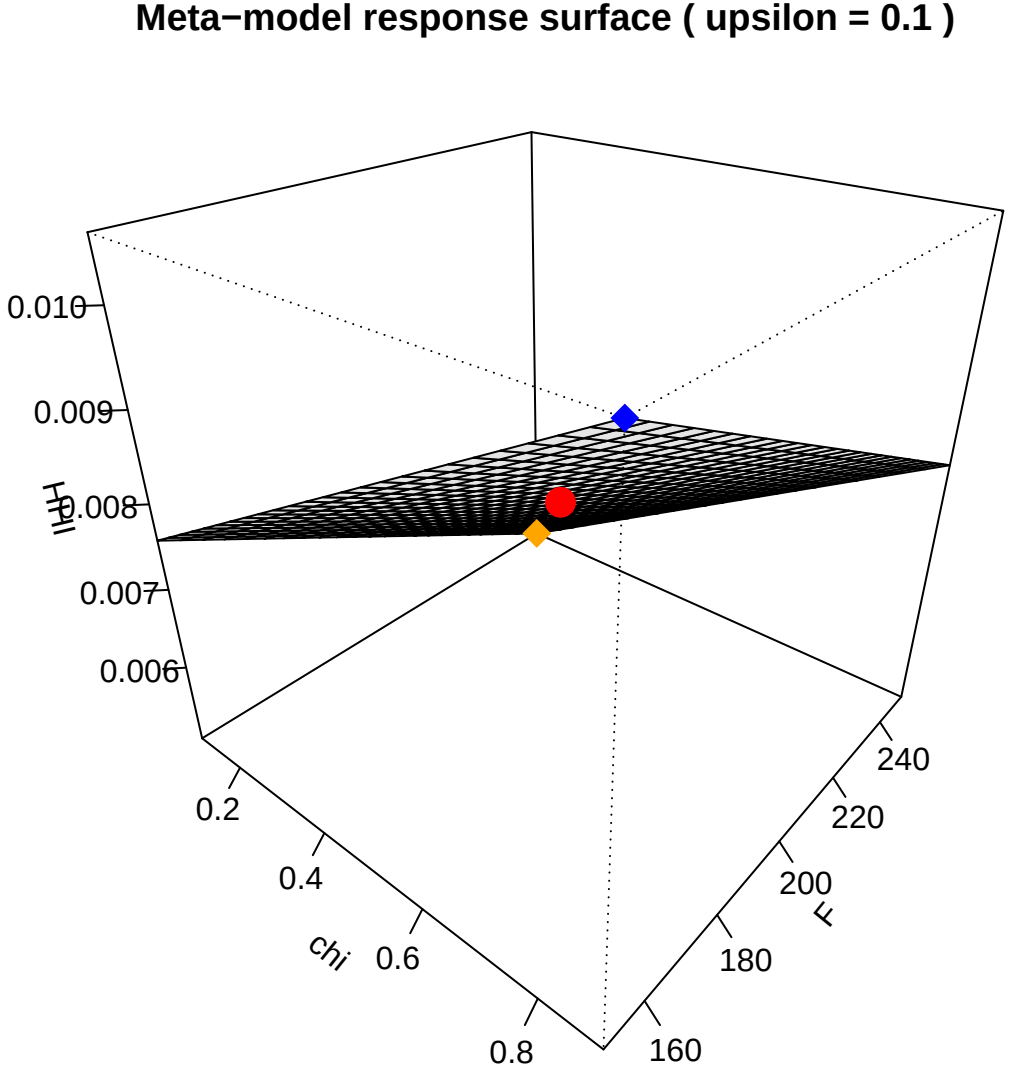

Sobol decomposition indexes (HHI)
interactions
main effects
Sobol Index
1.0
0.8
0.6
0.4
0.2
0.0
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
rhou
F
Samples = 1000 / time = [101,−1]


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

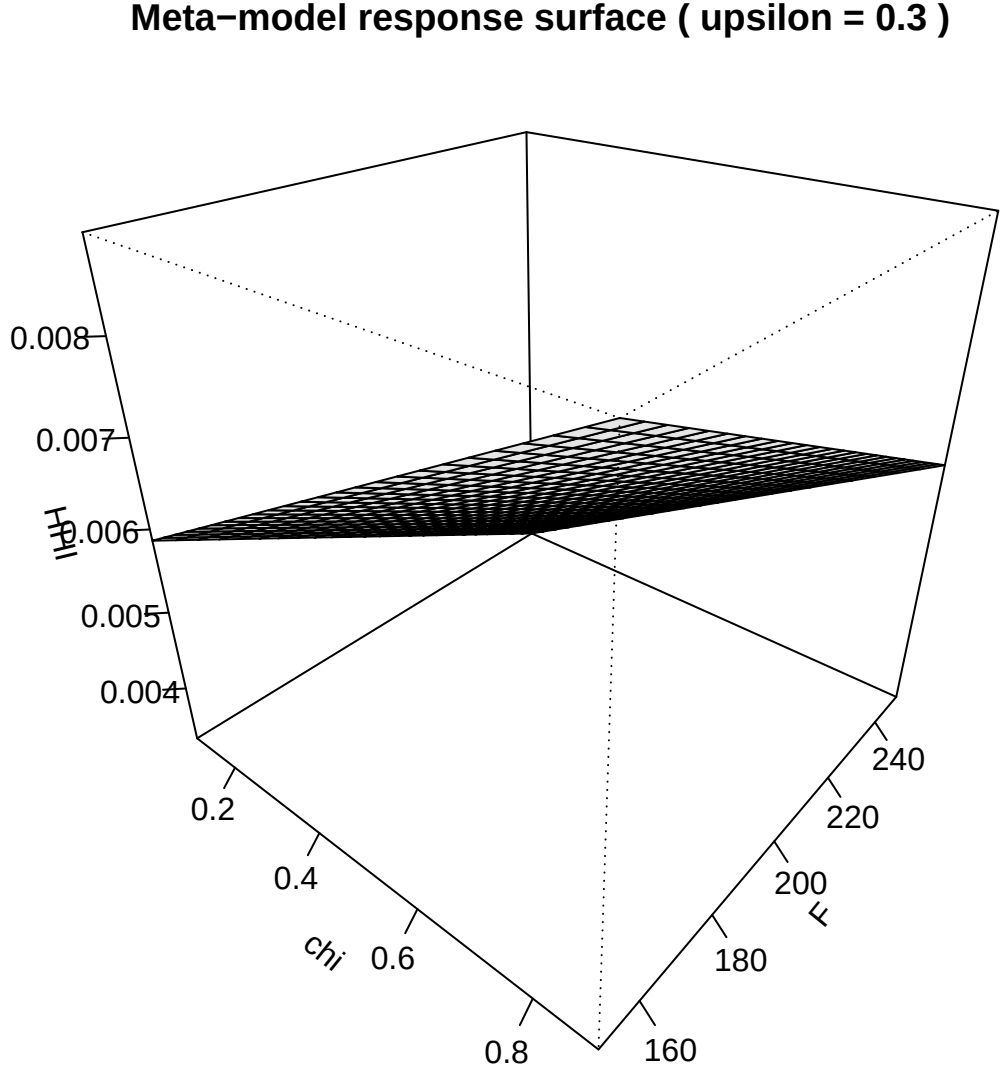

Meta−model response for parameter 'F'
HHI
0.02
0.01
0.00
−0.01
160
180
200
220
240
F
Dotted lines at 95% confidence interval

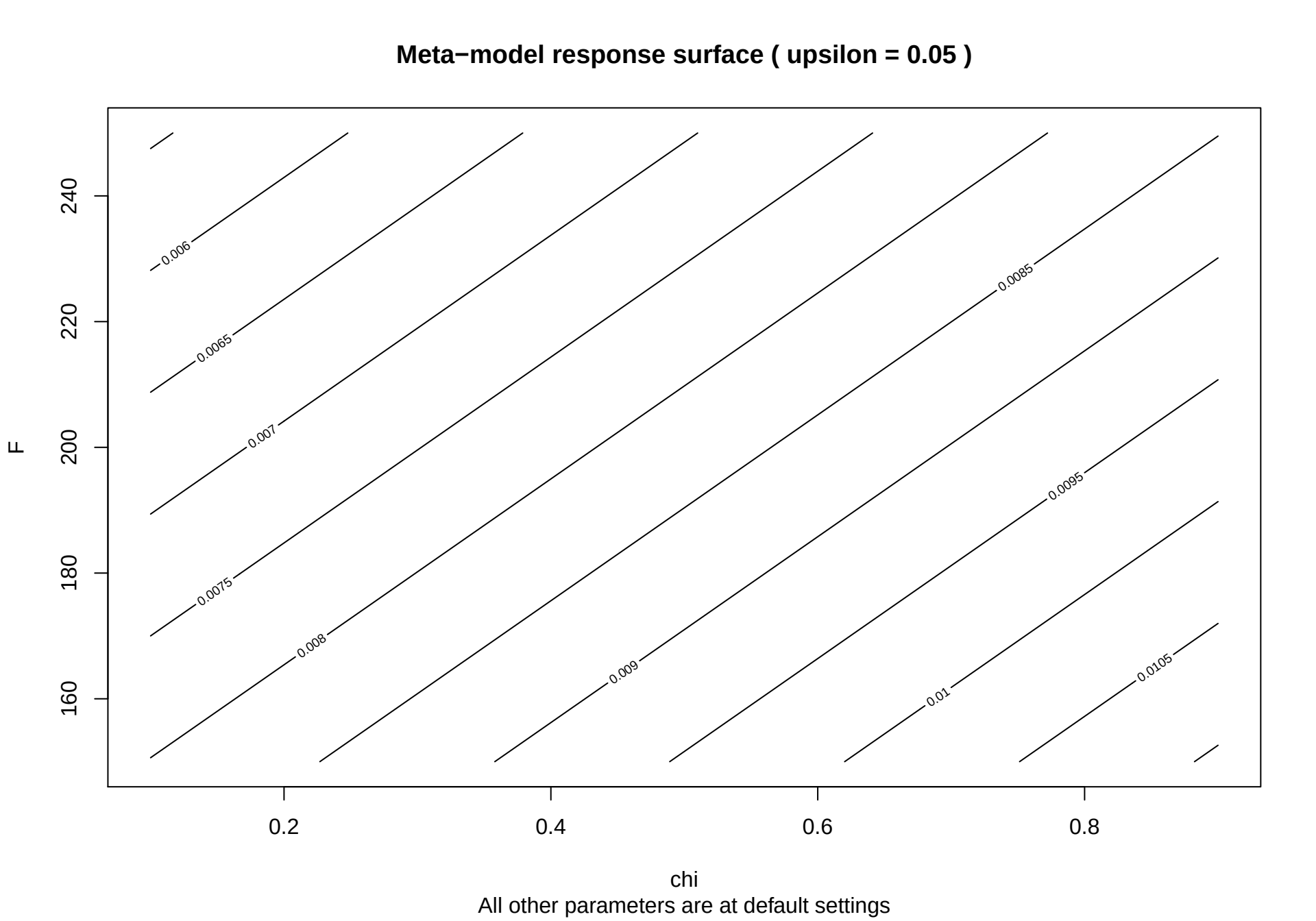

Meta−model response for parameter 'upsilon'
HHI
0.02
0.01
0.00
−0.01
0.05
0.10
0.15
0.20
0.25
0.30
upsilon
Dotted lines at 95% confidence interval

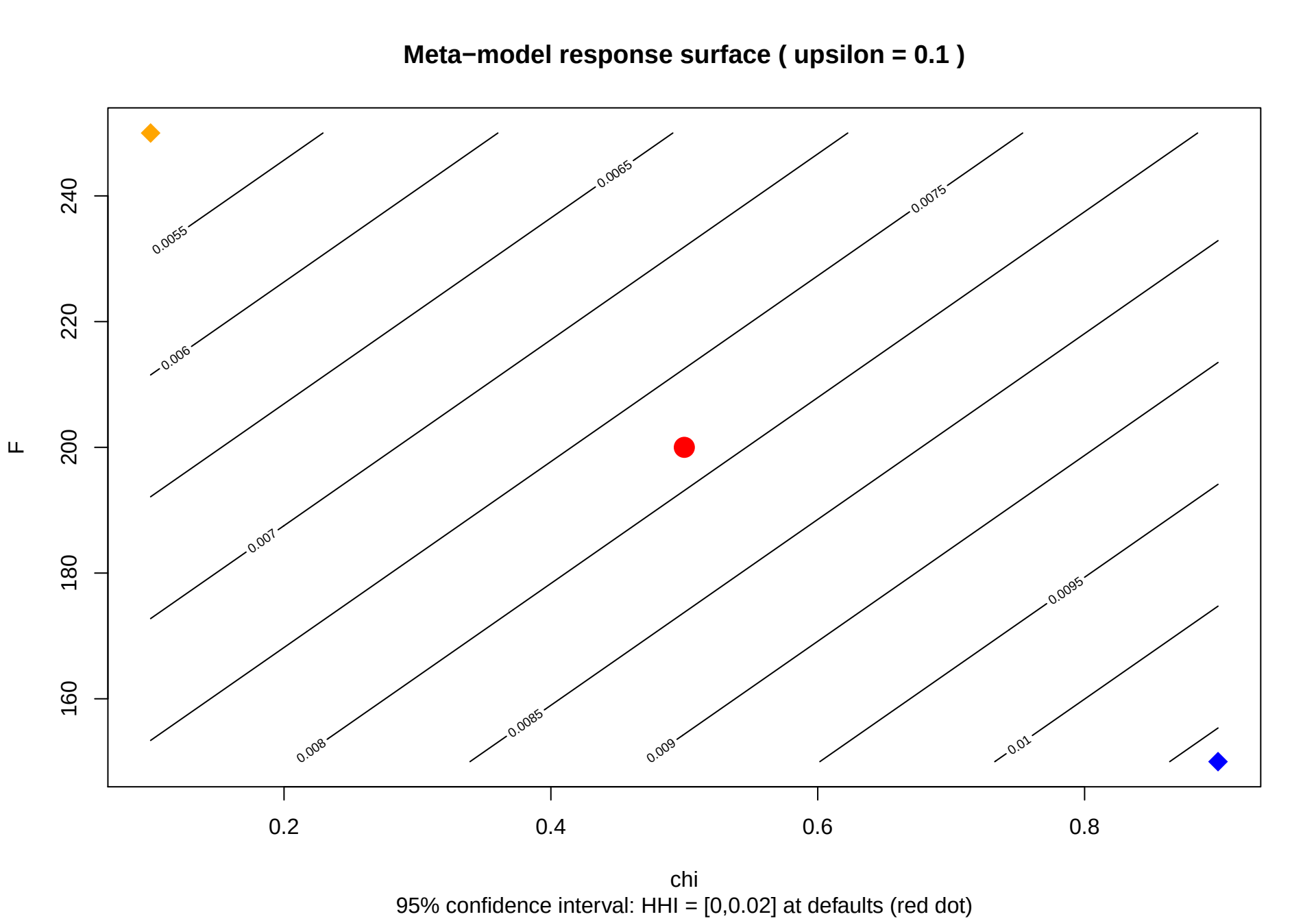

Meta−model response surface (upsilon = 0.05)
0.011
0.010
0.009
0.008
0.007
0.006
HHI
0.2
0.4
0.6
0.8
chi
160
180
200
220
240
F
All other parameters are at default settings

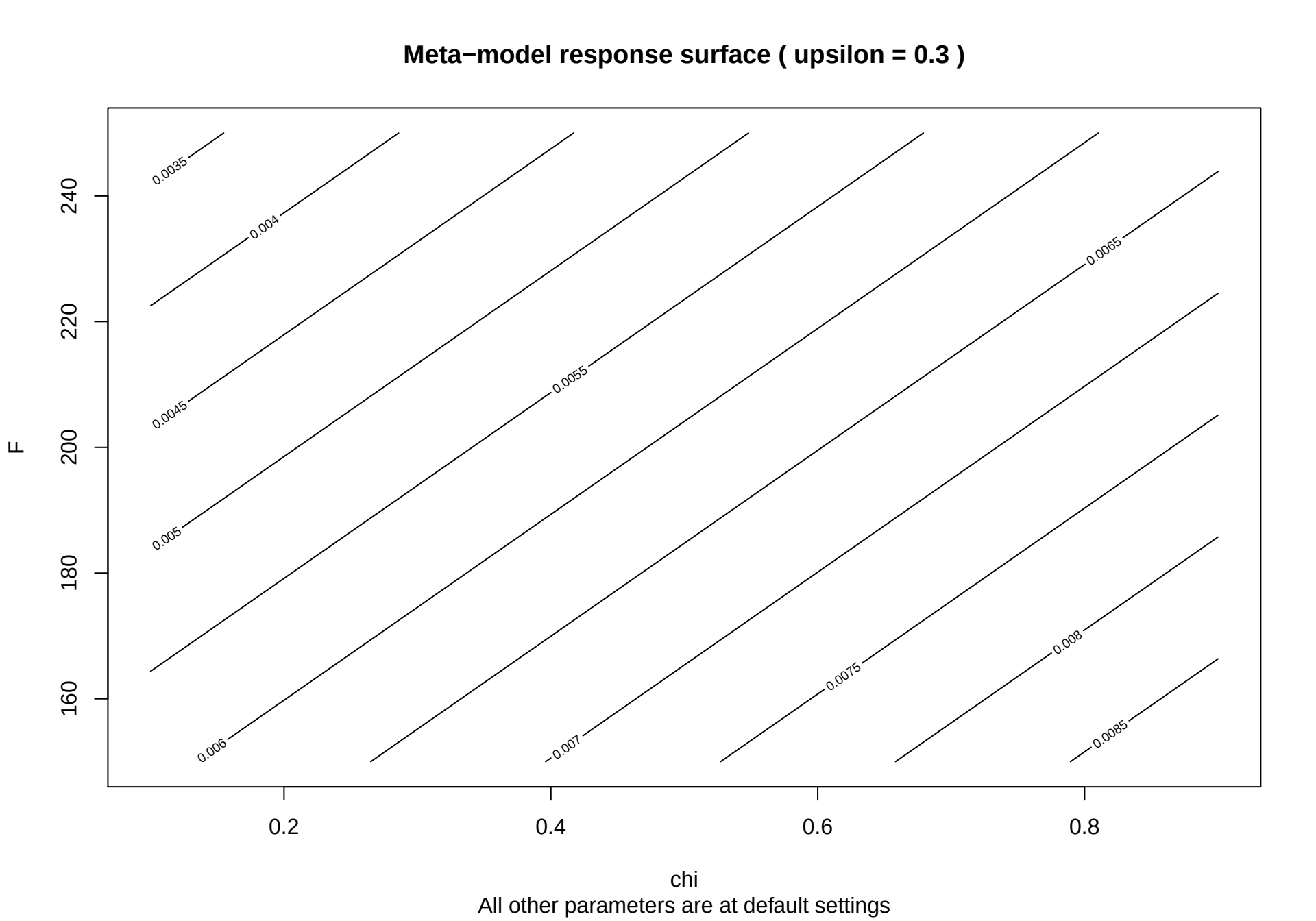


95% confidence interval: HHI = [0,0.02] at defaults (red dot)


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


Meta−model response surface (upsilon = 0.05)
F
240
220
200
180
160
0.006
0.0065
0.007
0.0075
0.008
0.009
0.01
0.0105
0.0085
0.0095
0.2
0.4
0.6
0.8
chi
All other parameters are at default settings


Meta−model response surface (upsilon = 0.1)
F
240
220
200
180
160
0.0055
0.006
0.0065
0.007
0.0075
0.008
0.0085
0.009
0.0095
0.01
0.2
0.4
0.6
0.8
chi
95% confidence interval: HHI = [0,0.02] at defaults (red dot)


Meta−model response surface (upsilon = 0.3)
F
160
180
200
220
240
0.2
0.4
0.6
0.8
chi
All other parameters are at default settings
0.0035
0.004
0.0045
0.005
0.006
0.0055
0.007
0.0065
0.0075
0.008
0.0085