Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.6556	0.6317	0.6586	0.4245	0.6601
Q2 1st order poly. trend	0.4505	0.4585	0.4499	0.5189	0.6629
RMSE constant trend	0.0056	0.0056	0.0056	0.0056	0.0056
RMSE 1st order poly. trend	0.0025	0.0025	0.0025	0.0025	0.0025
MAE constant trend	0.0043	0.0043	0.0043	0.0043	0.0043
MAE 1st order poly. trend	0.0019	0.0019	0.0019	0.0019	0.0019
RMA constant trend	2.4196	2.4196	2.4196	2.4196	2.4196
RMA 1st order poly. trend	1.1408	1.1408	1.1408	1.1408	1.1408

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

Kriging meta−model estimation (standardized)

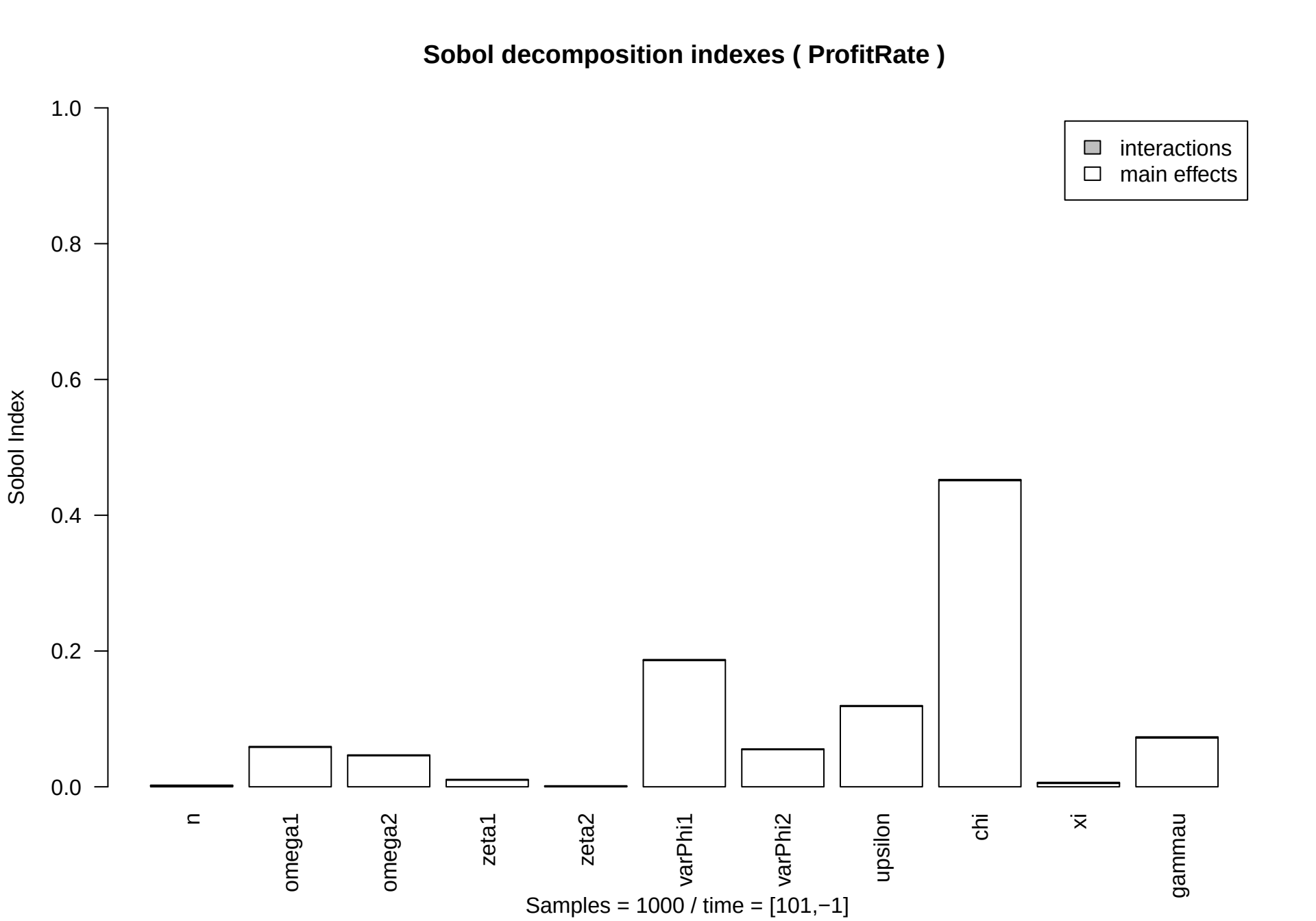
trend(intercept)	0.152	Trend specification	1st order poly.
trend(inclination)	0.000	Correlation function	power exp.
theta(n)	1.137	Cross−sample Q2	0.663
theta(omega1)	0.935	External RMSE	0.003
theta(omega2)	1.187	External MAE	0.002
theta(zeta1)	1.471	External RMA	1.141
theta(zeta2)	0.234	DoE samples	65
theta(varPhi1)	1.328	External samples	10
theta(varPhi2)	1.560		
theta(upsilon)	1.237		
theta(chi)	0.733		
theta(xi)	1.011		
theta(gammau)	1.481		

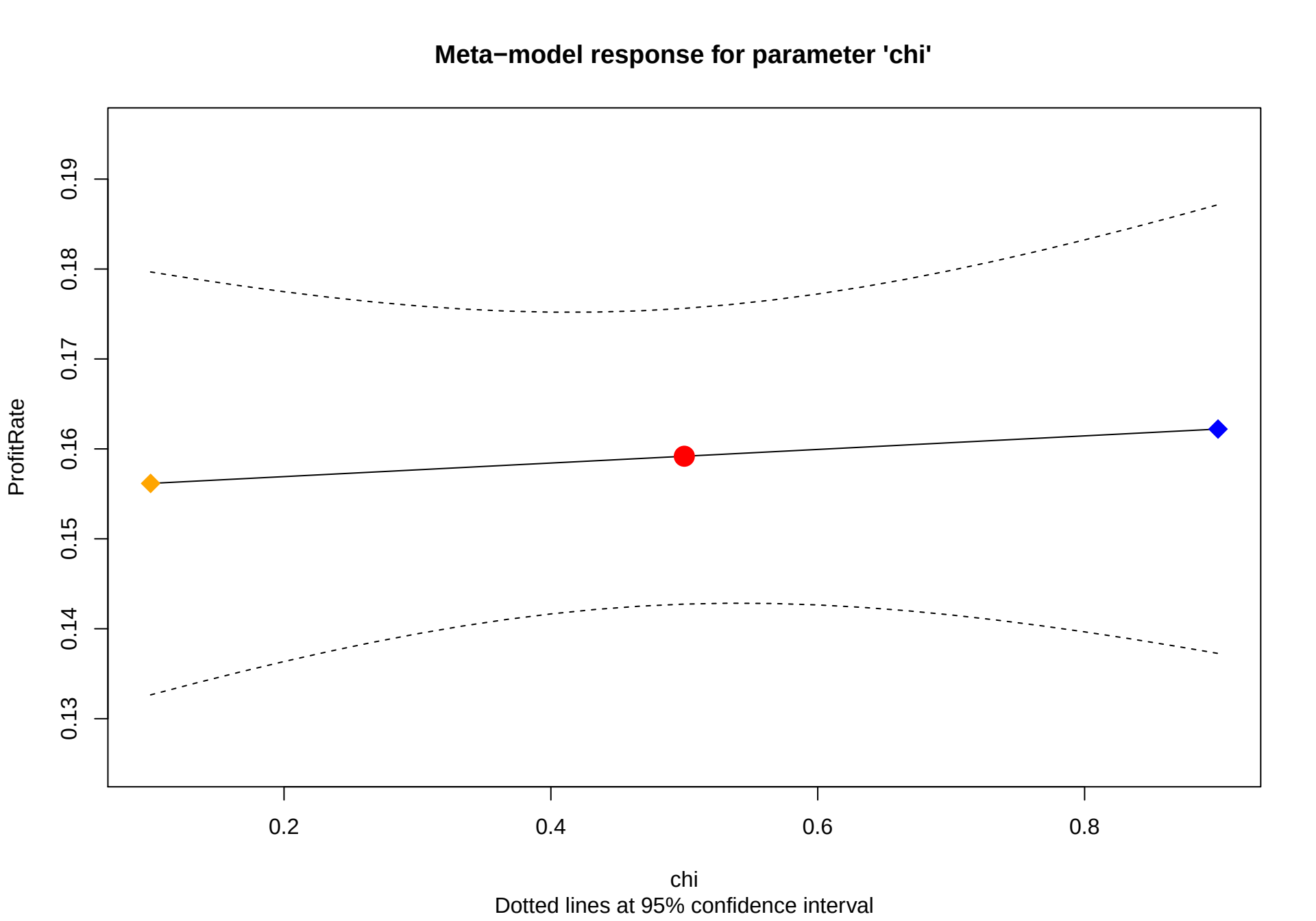
Variables rescaled to [0,1] / Average 95% CI = +/− 0.02
Predicted output at defaults: ProfitRate = 0.16, 95% CI = [0.14,0.18], time = [101,−1]

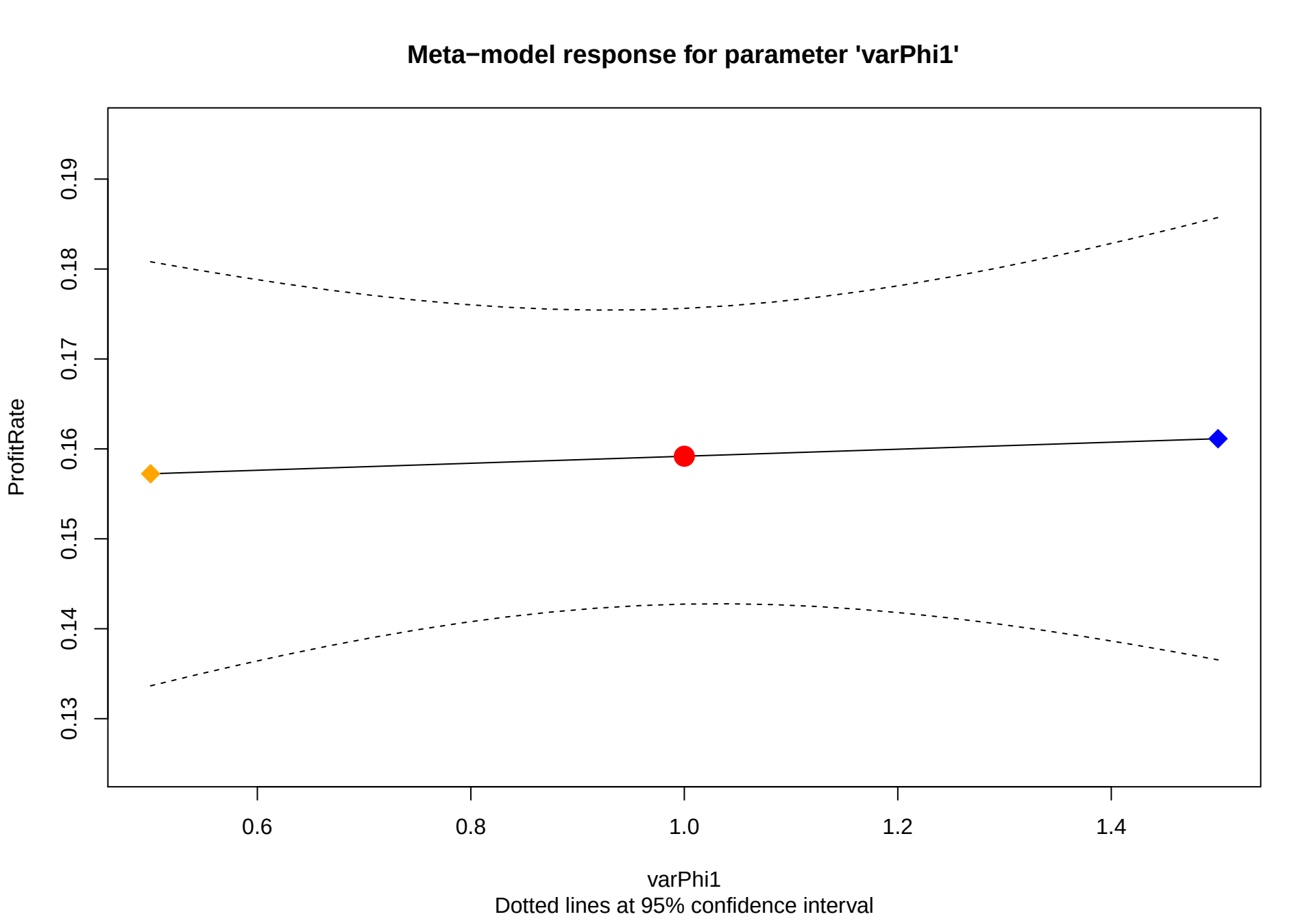
Sobol decomposition indexes (ProfitRate)

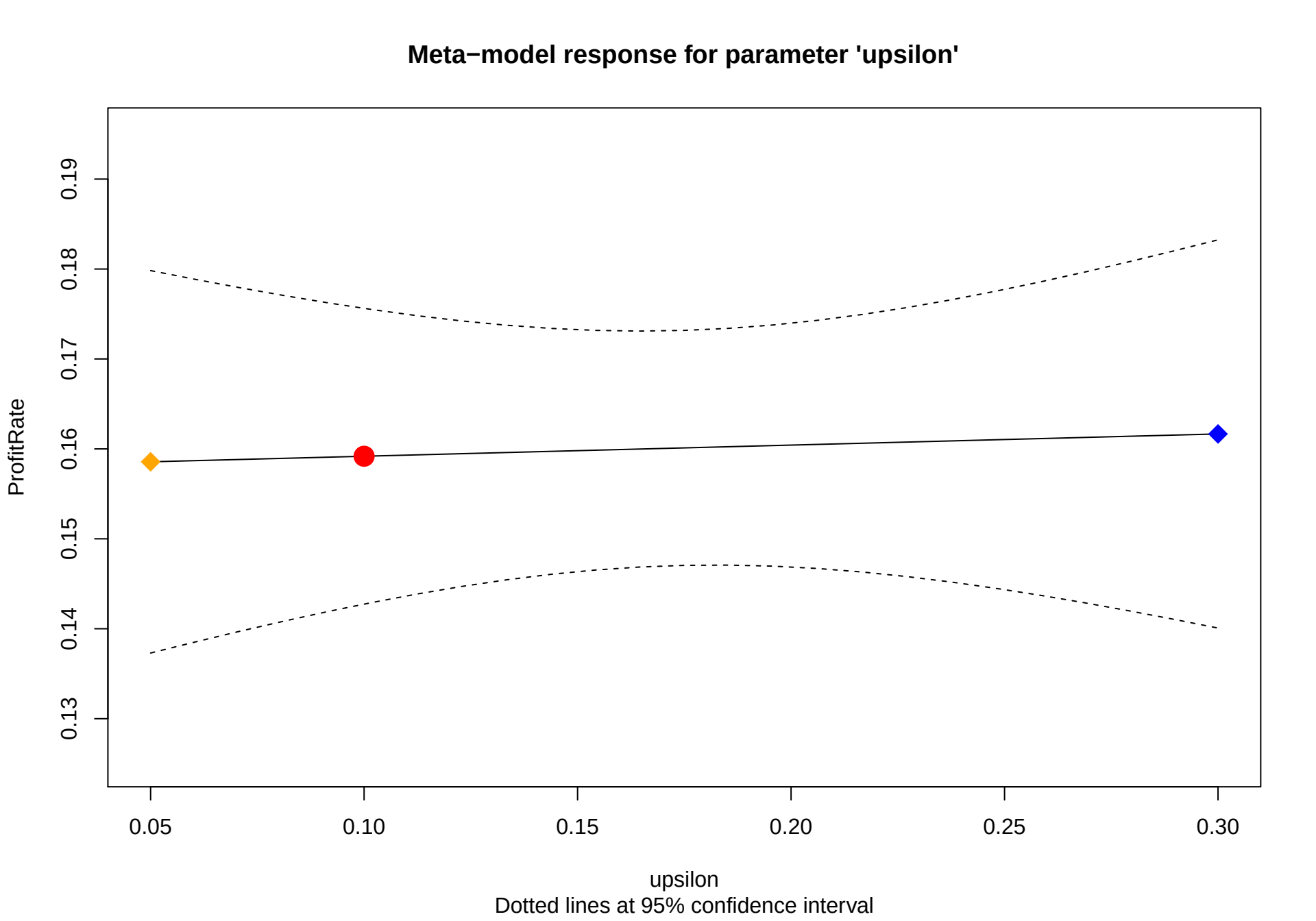
	Direct effects	Interactions
n	0.002	0.001
omega1	0.058	0.001
omega2	0.046	0.001
zeta1	0.010	0.001
zeta2	0.001	0.001
varPhi1	0.186	0.001
varPhi2	0.055	0.001
upsilon	0.119	0.001
chi	0.451	0.001
xi	0.005	0.001
gammau	0.072	0.001

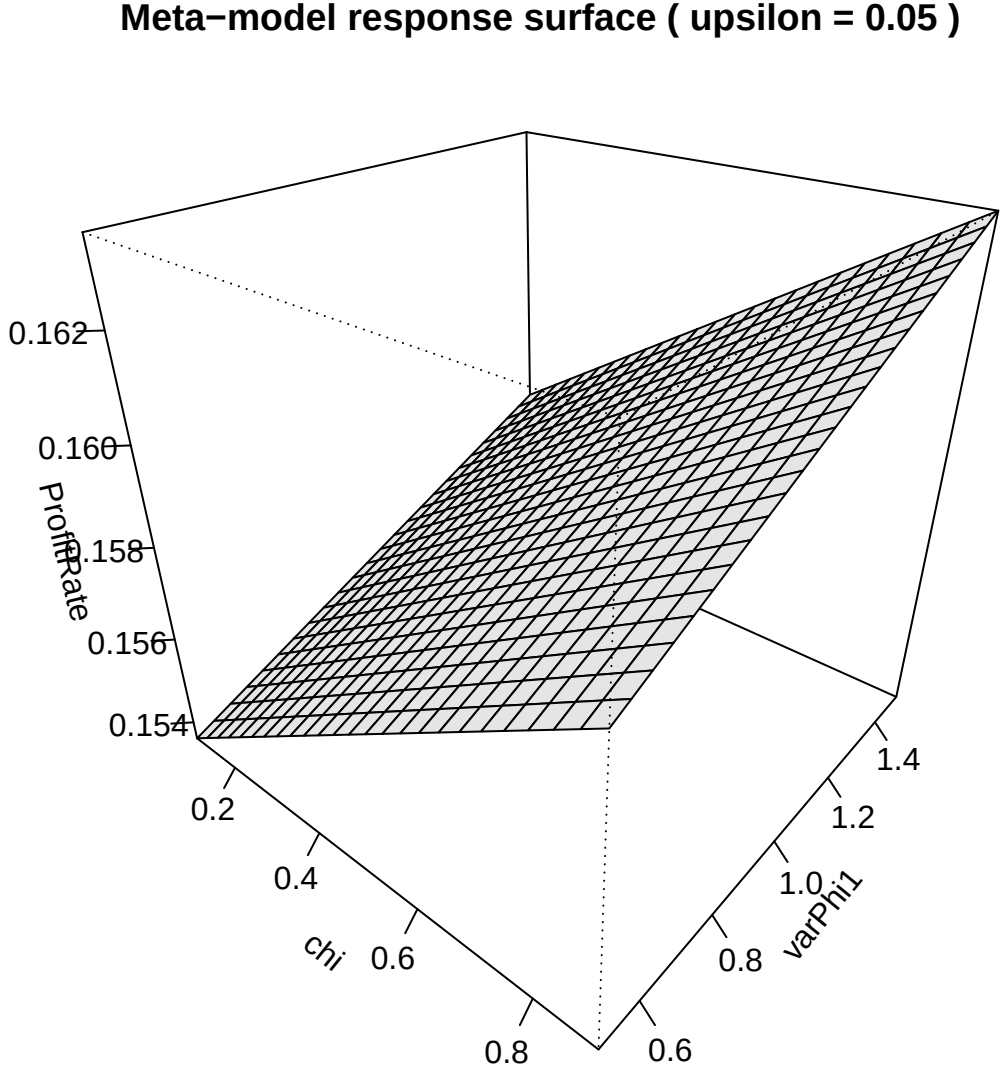
Samples = 1000 / time = [101,−1]

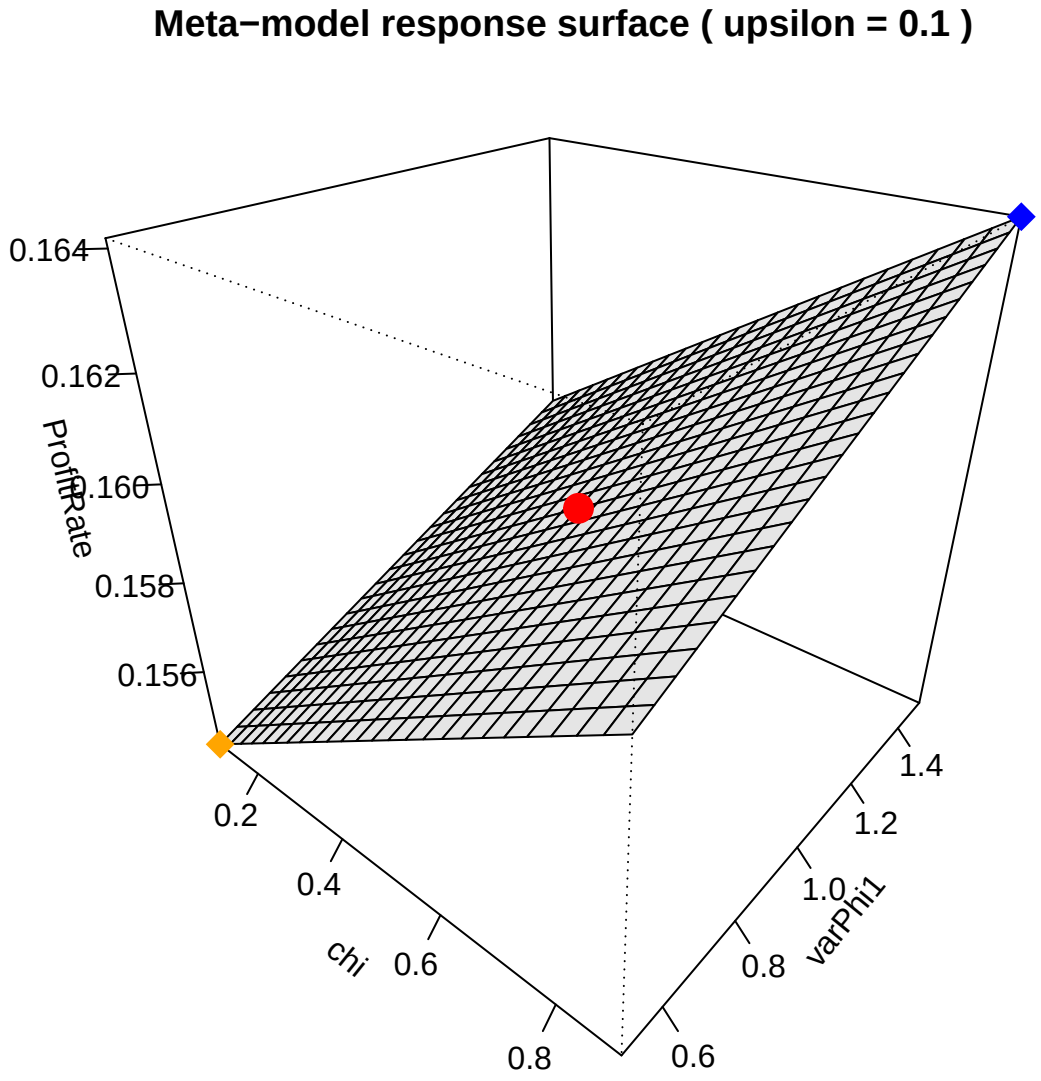

Sobol decomposition indexes (ProfitRate)
interactions
main effects
Sobol Index
1.0
0.8
0.6
0.4
0.2
0.0
n
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
gammau
Samples = 1000 / time = [101,−1]


Meta−model response for parameter 'chi'
ProfitRate
0.13
0.14
0.15
0.16
0.17
0.18
0.19
0.2
0.4
0.6
0.8
chi
Dotted lines at 95% confidence interval

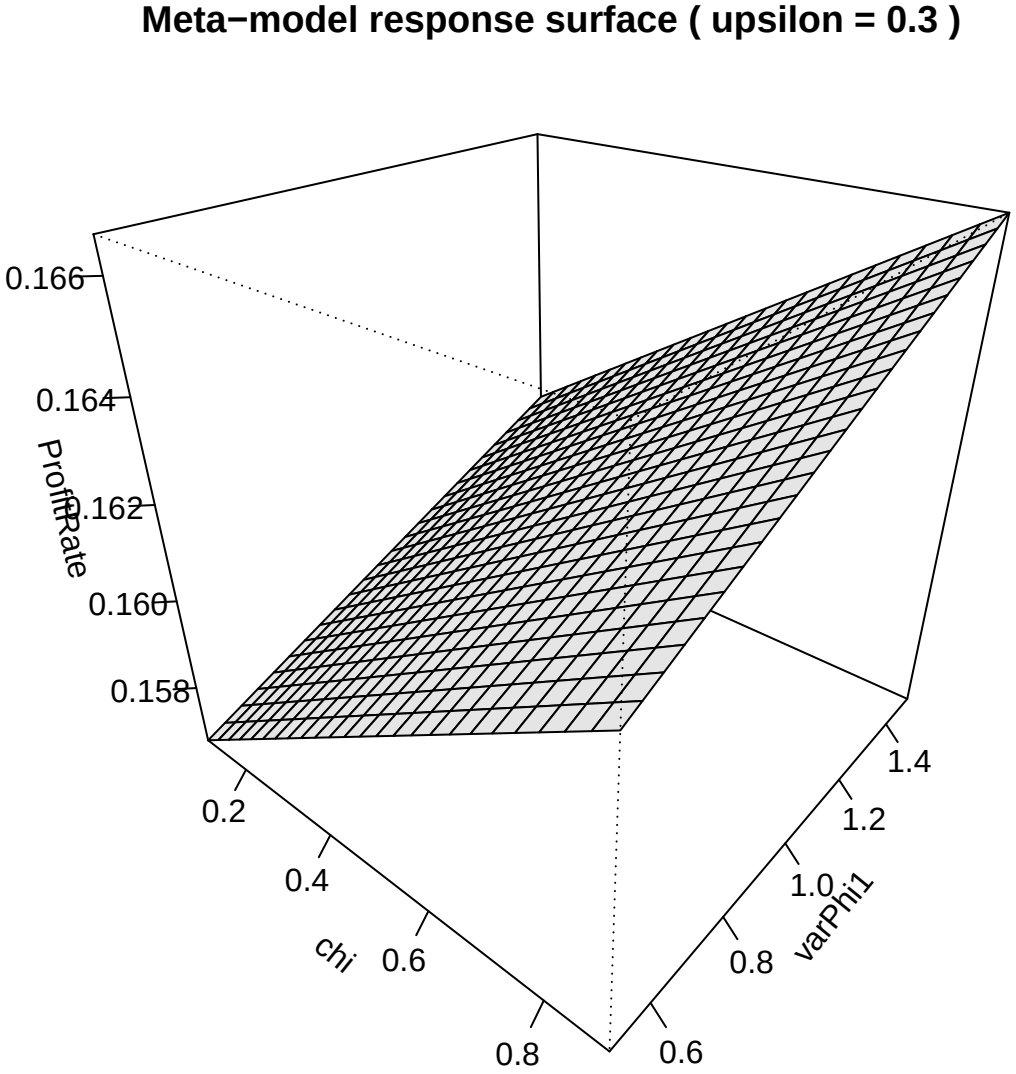

Meta−model response for parameter 'varPhi1'
ProfitRate
0.13
0.14
0.15
0.16
0.17
0.18
0.19
0.6
0.8
1.0
1.2
1.4
varPhi1
Dotted lines at 95% confidence interval

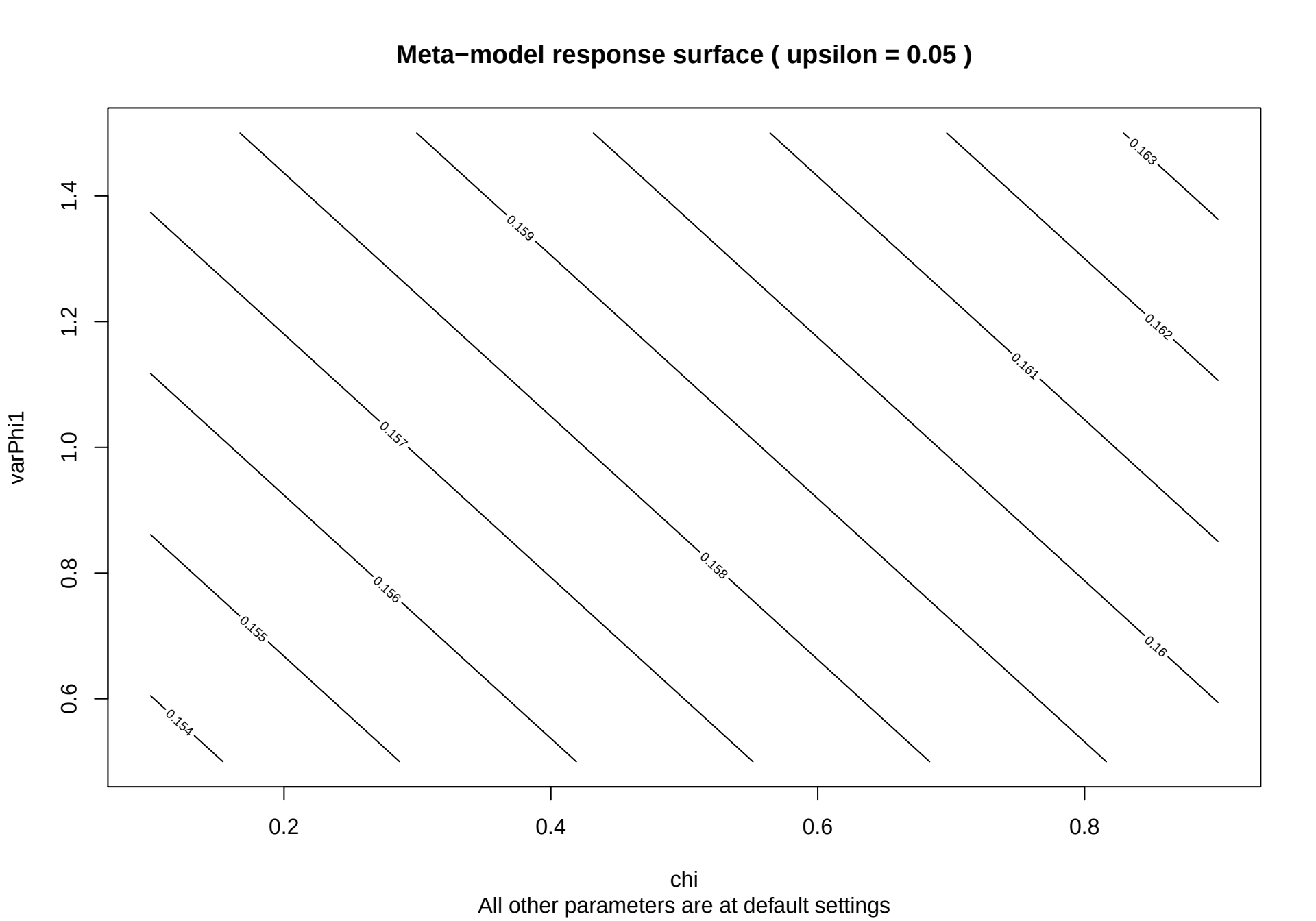

Meta−model response for parameter 'upsilon'
ProfitRate
0.13
0.14
0.15
0.16
0.17
0.18
0.19
0.05
0.10
0.15
0.20
0.25
0.30
upsilon
Dotted lines at 95% confidence interval

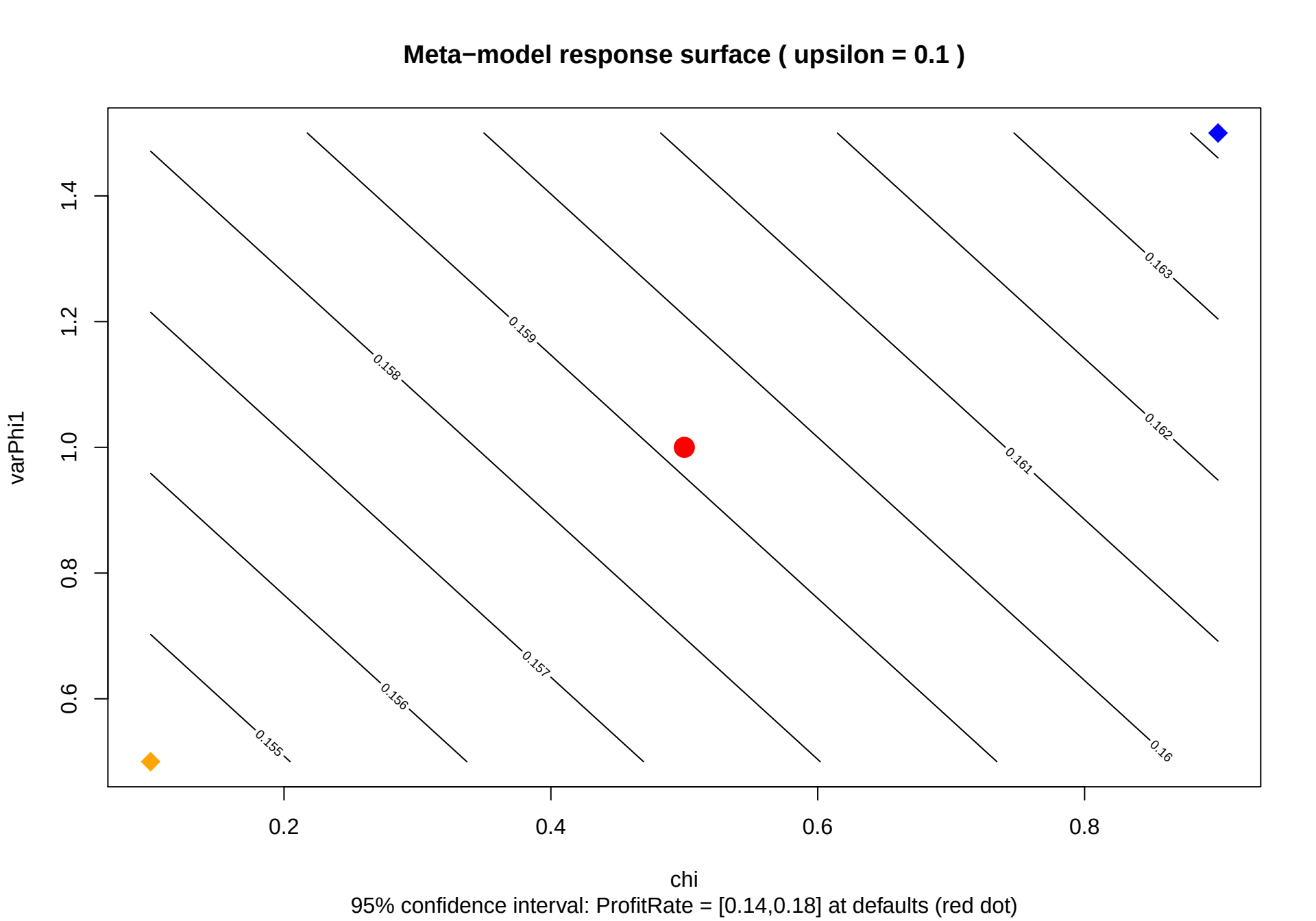

Meta−model response surface (upsilon = 0.05)
ProfitRate
0.154
0.156
0.158
0.160
0.162
chi
0.2
0.4
0.6
0.8
varPhi1
0.6
0.8
1.0
1.2
1.4
All other parameters are at default settings

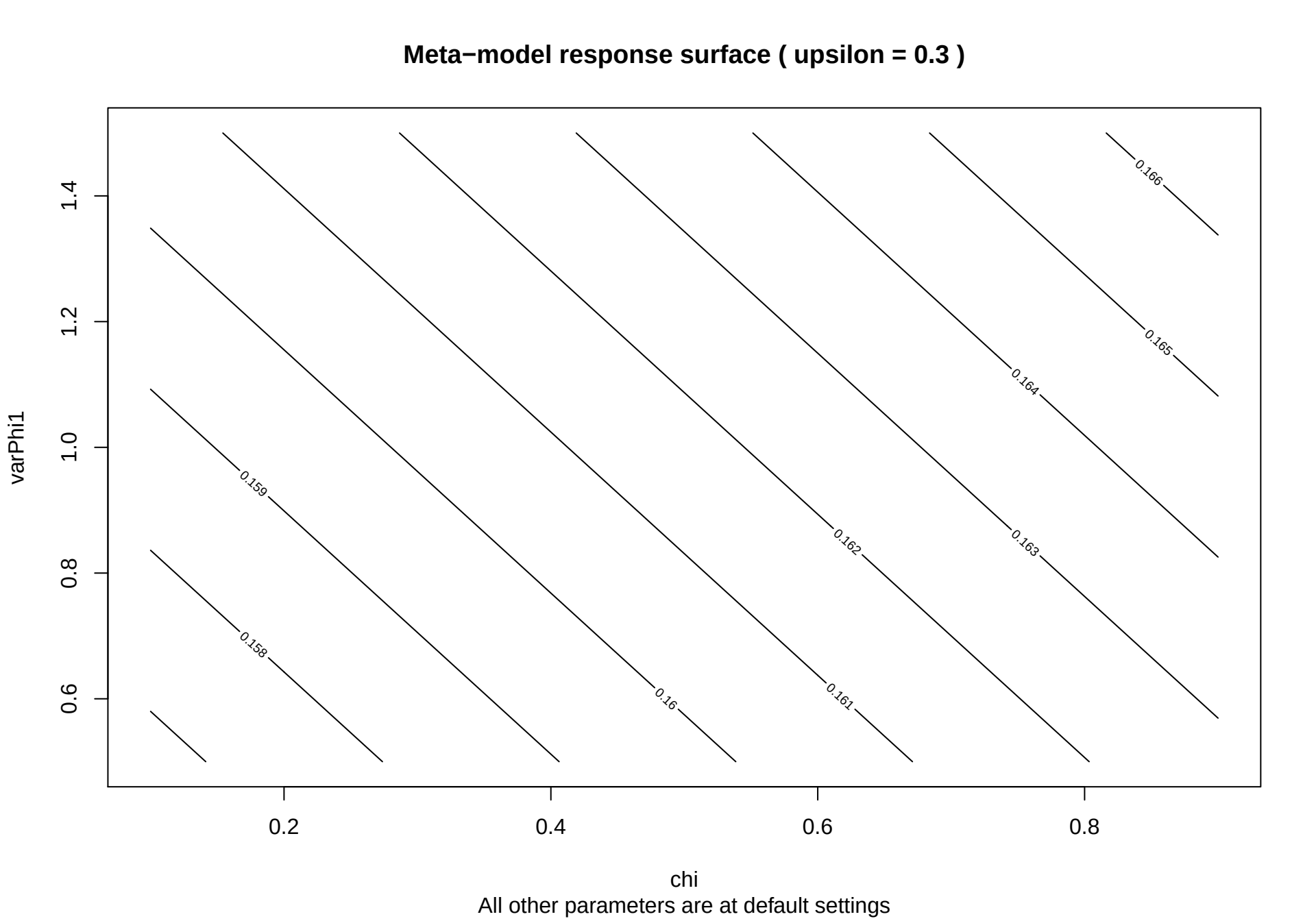


95% confidence interval: ProfitRate = [0.14,0.18] at defaults (red dot)


Meta−model response surface (upsilon = 0.3)
ProfitRate
0.166
0.164
0.162
0.160
0.158
chi
0.2
0.4
0.6
0.8
varPhi1
0.6
0.8
1.0
1.2
1.4
All other parameters are at default settings


Meta−model response surface (upsilon = 0.05)
varPhi1
1.4
1.2
1.0
0.8
0.6
0.2
0.4
0.6
0.8
chi
All other parameters are at default settings
0.154
0.155
0.156
0.157
0.158
0.159
0.16
0.161
0.162
0.163


Meta−model response surface (upsilon = 0.1)
varPhi1
chi
95% confidence interval: ProfitRate = [0.14,0.18] at defaults (red dot)
0.6
0.8
1.0
1.2
1.4
0.2
0.4
0.6
0.8
0.155
0.156
0.157
0.158
0.159
0.16
0.161
0.162
0.163


Meta−model response surface (upsilon = 0.3)
varPhi1
chi
All other parameters are at default settings
0.6
0.8
1.0
1.2
1.4
0.2
0.4
0.6
0.8
0.158
0.159
0.16
0.161
0.162
0.163
0.164
0.165
0.166