Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.9067	0.8753	0.8895	0.6427	0.5178
Q2 1st order poly. trend	0.7665	0.7444	0.8928	0.7046	0.7081
RMSE constant trend	0.0604	0.0604	0.0604	0.0604	0.0604
RMSE 1st order poly. trend	0.0296	0.0296	0.0296	0.0296	0.0296
MAE constant trend	0.0527	0.0527	0.0527	0.0527	0.0527
MAE 1st order poly. trend	0.0244	0.0244	0.0244	0.0244	0.0244
RMA constant trend	1.7086	1.7086	1.7086	1.7086	1.7086
RMA 1st order poly. trend	1.1142	1.1142	1.1142	1.1142	1.1142

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

Kriging meta−model estimation (standardized)

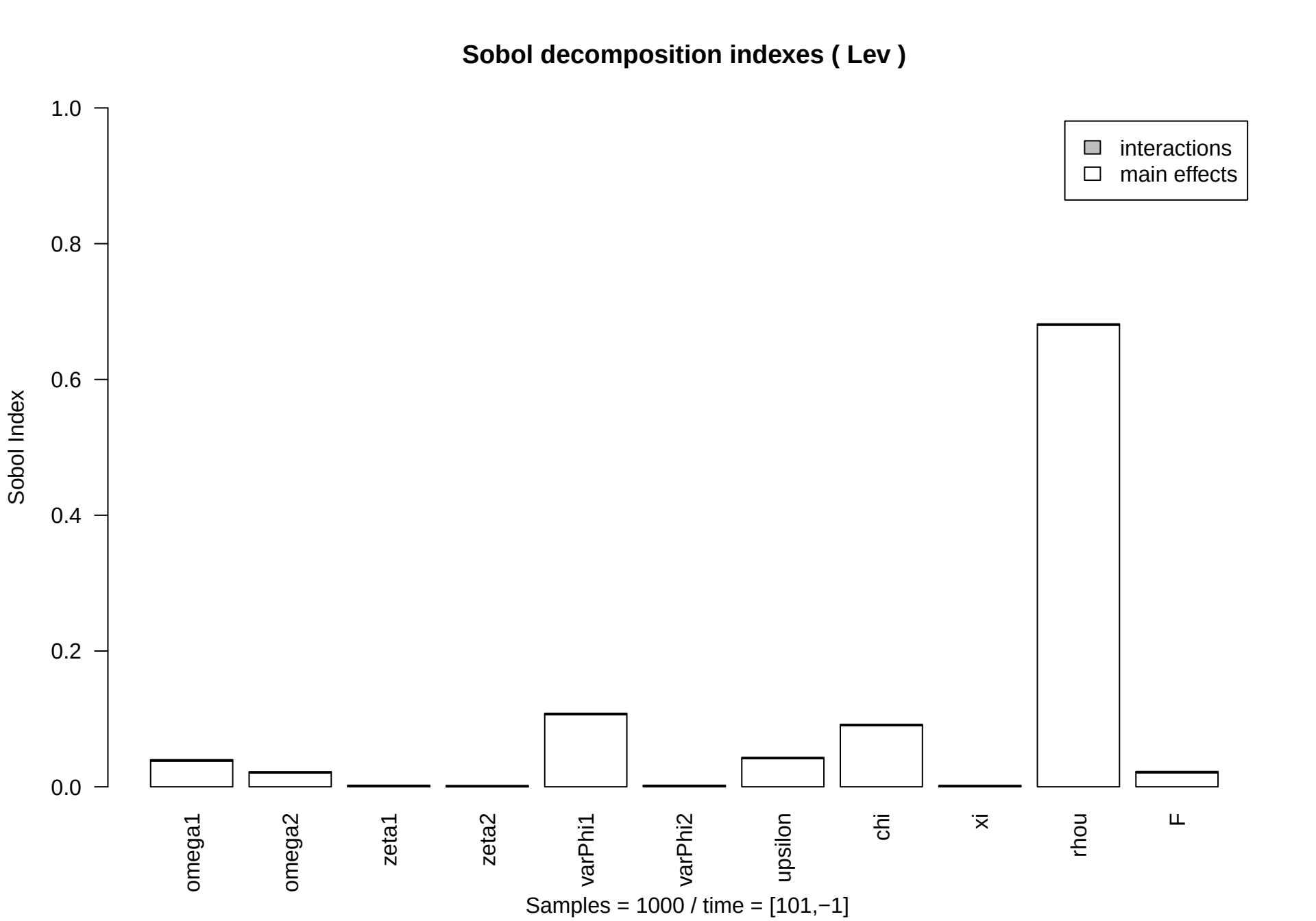
trend(intercept)	0.056	Trend specification	1st order poly.
trend(inclination)	0.041	Correlation function	Gaussian
theta(omega1)	1.714	Cross−sample Q2	0.893
theta(omega2)	1.346	External RMSE	0.030
theta(zeta1)	0.007	External MAE	0.024
theta(zeta2)	1.632	External RMA	1.114
theta(varPhi1)	1.632	DoE samples	65
theta(varPhi2)	1.440	External samples	20
theta(upsilon)	1.688		
theta(chi)	0.331		
theta(xi)	1.105		
theta(gammau)	0.651		
theta(n)	1.547		

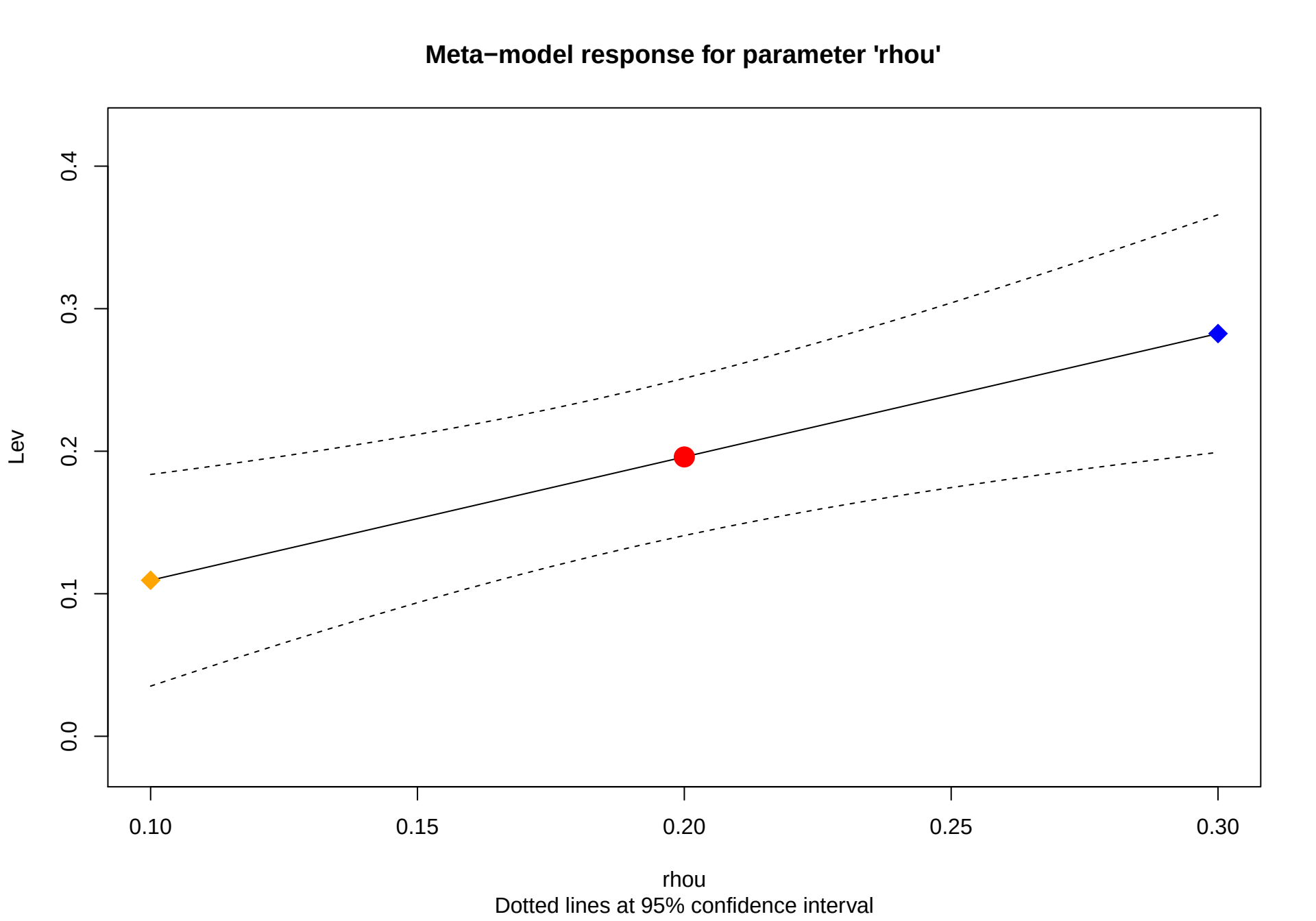
Variables rescaled to [0,1] / Average 95% CI = +/− 0.07
Predicted output at defaults: Lev = 0.2, 95% CI = [0.14,0.25], time = [101,−1]

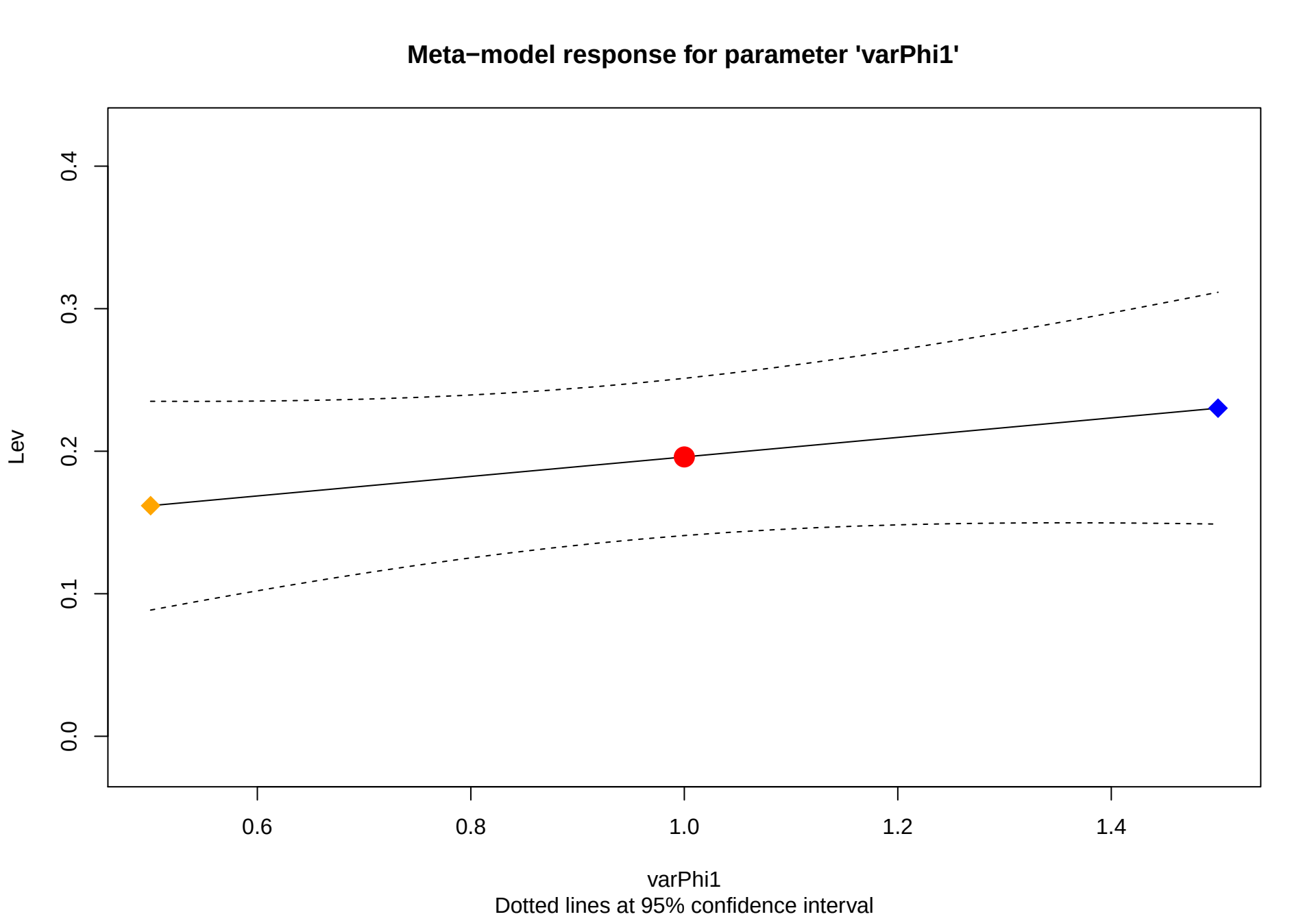
Sobol decomposition indexes (Lev)

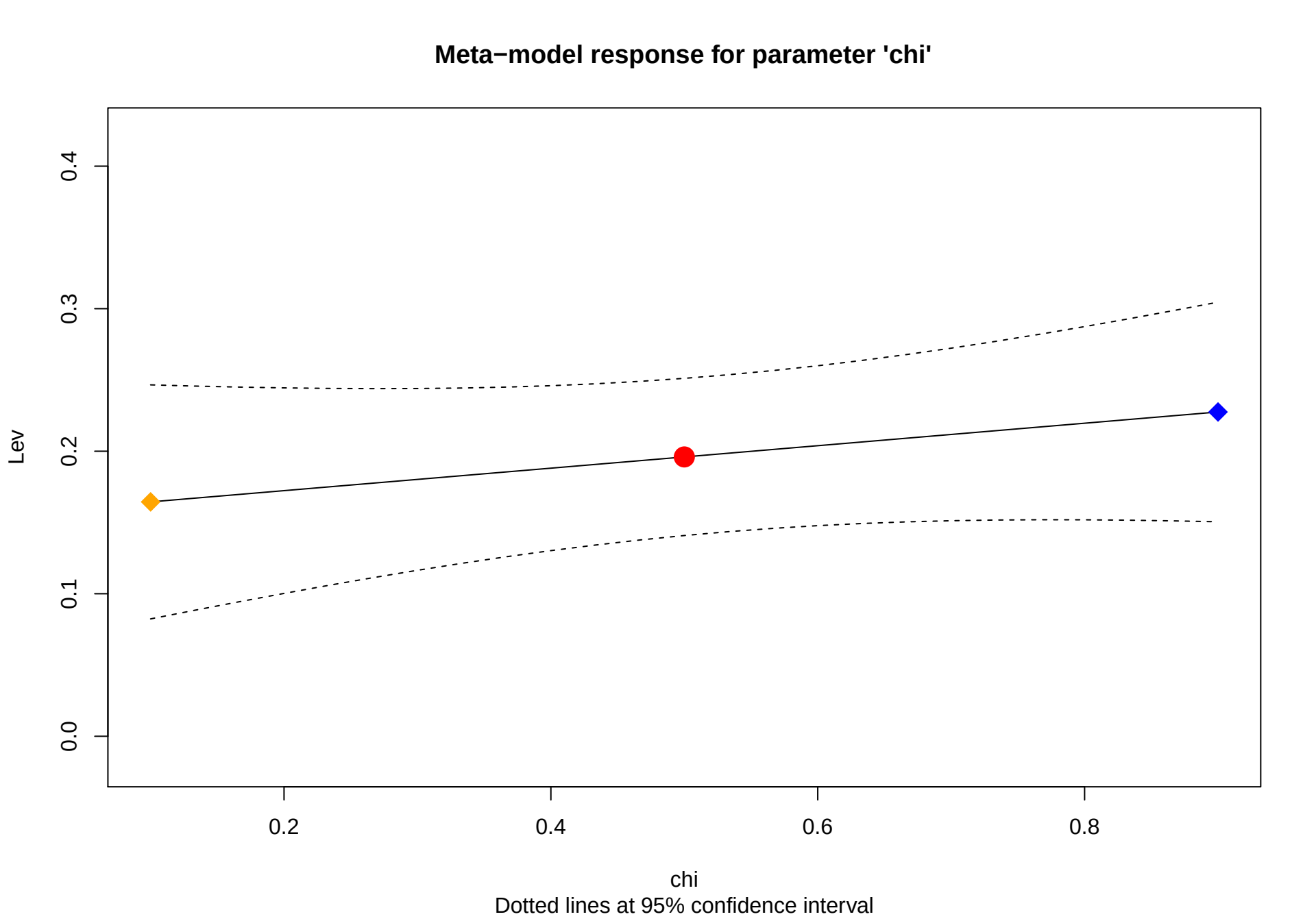
	Direct effects	Interactions
omega1	0.038	0.002
omega2	0.020	0.002
zeta1	0.000	0.002
zeta2	0.000	0.002
varPhi1	0.106	0.002
varPhi2	0.001	0.002
upsilon	0.041	0.002
chi	0.090	0.002
xi	0.000	0.002
gammau	0.680	0.002
n	0.021	0.002

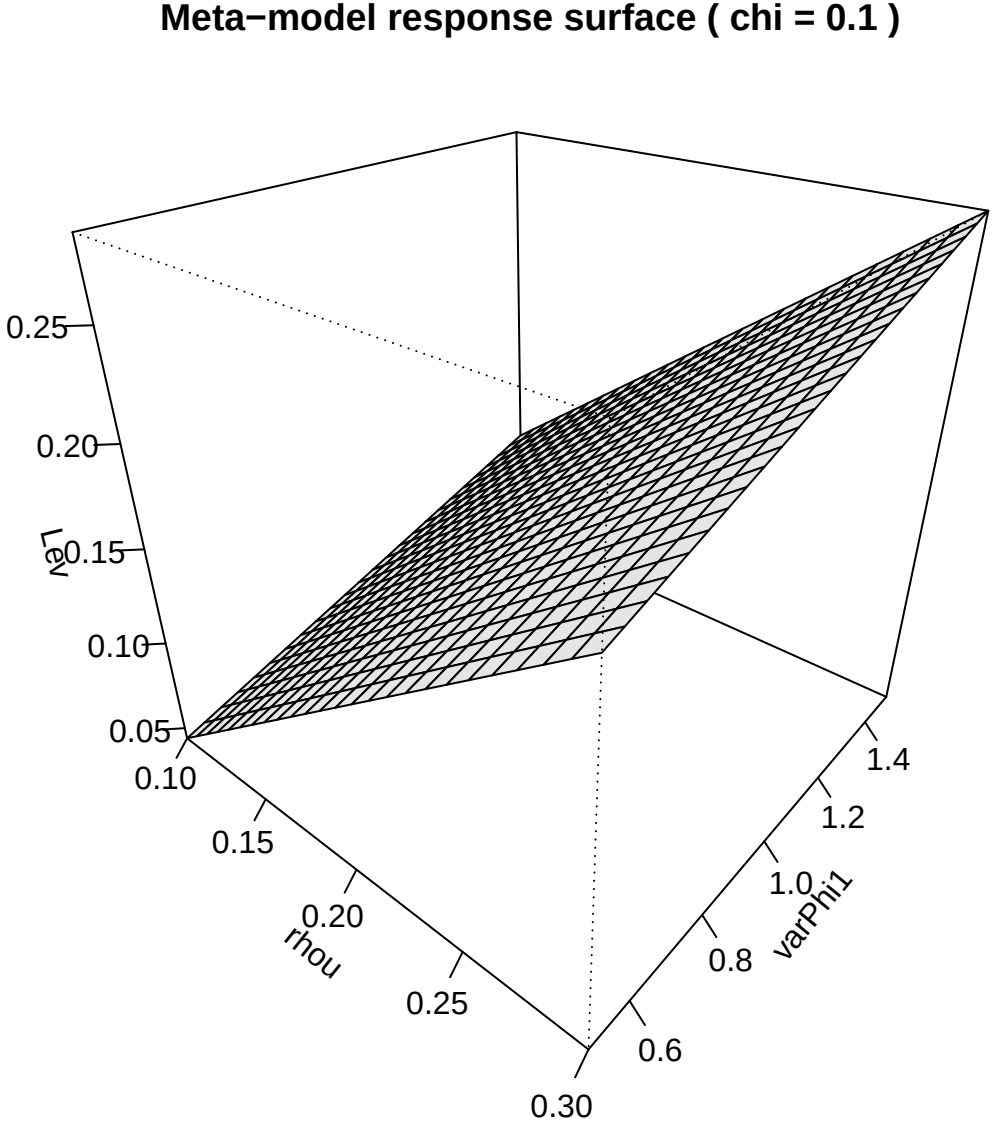
Samples = 1000 / time = [101,−1]

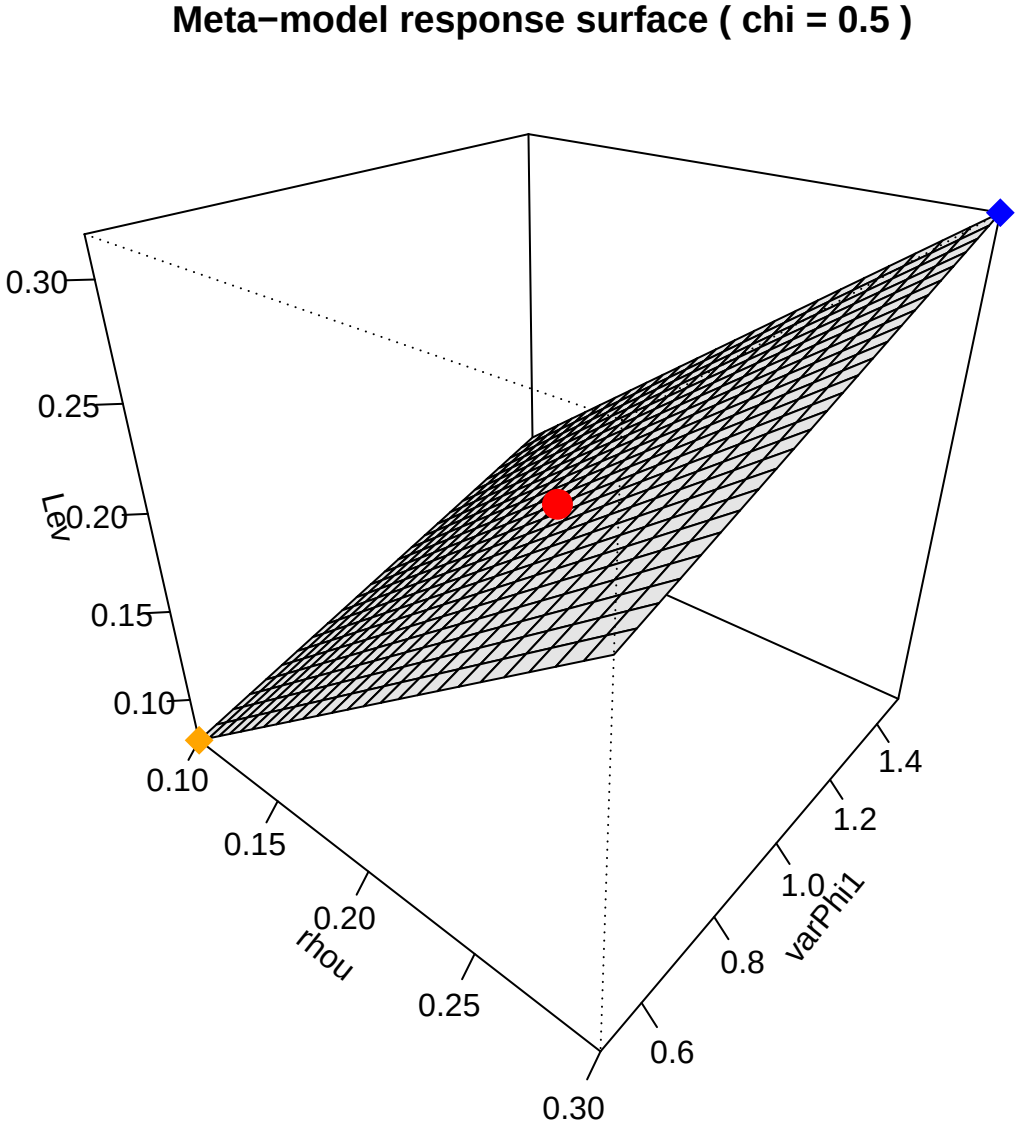

Sobol decomposition indexes (Lev)
interactions
main effects
Sobol Index
1.0
0.8
0.6
0.4
0.2
0.0
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
rhou
F
Samples = 1000 / time = [101,−1]

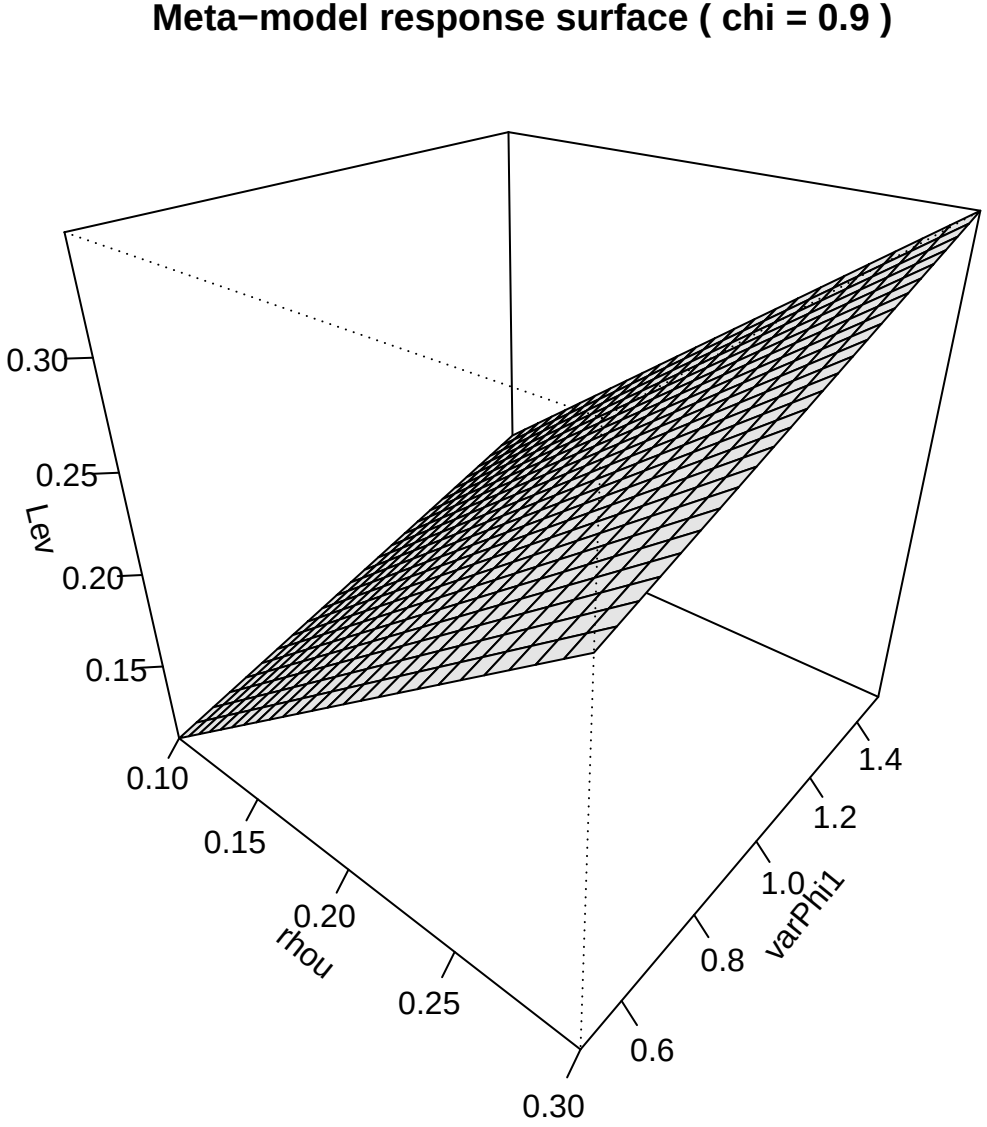

Meta−model response for parameter 'rhou'
Lev
0.0
0.1
0.2
0.3
0.4
0.10
0.15
0.20
0.25
0.30
rhou
Dotted lines at 95% confidence interval

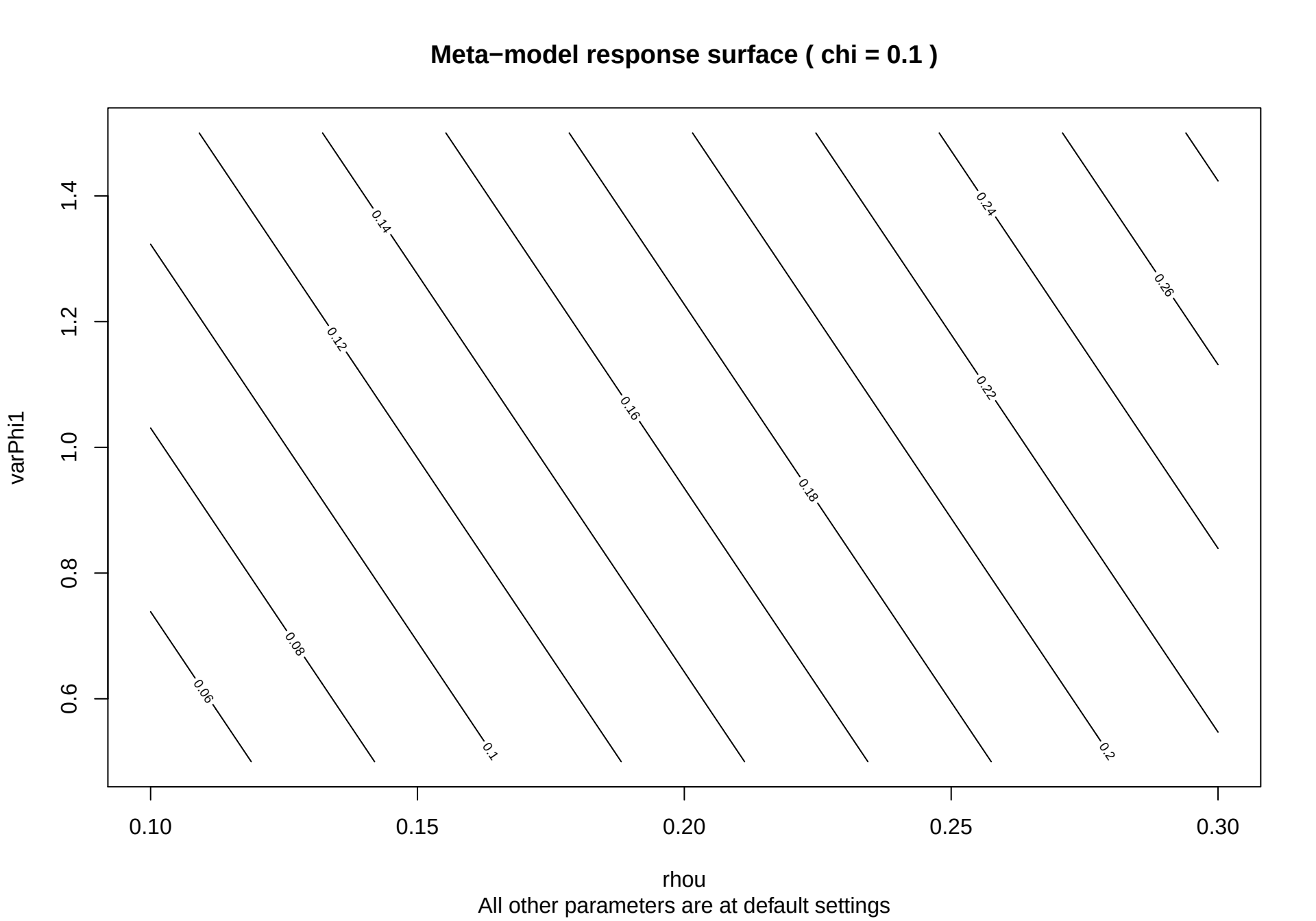

Meta−model response for parameter 'varPhi1'
Lev
0.0
0.1
0.2
0.3
0.4
0.6
0.8
1.0
1.2
1.4
varPhi1
Dotted lines at 95% confidence interval

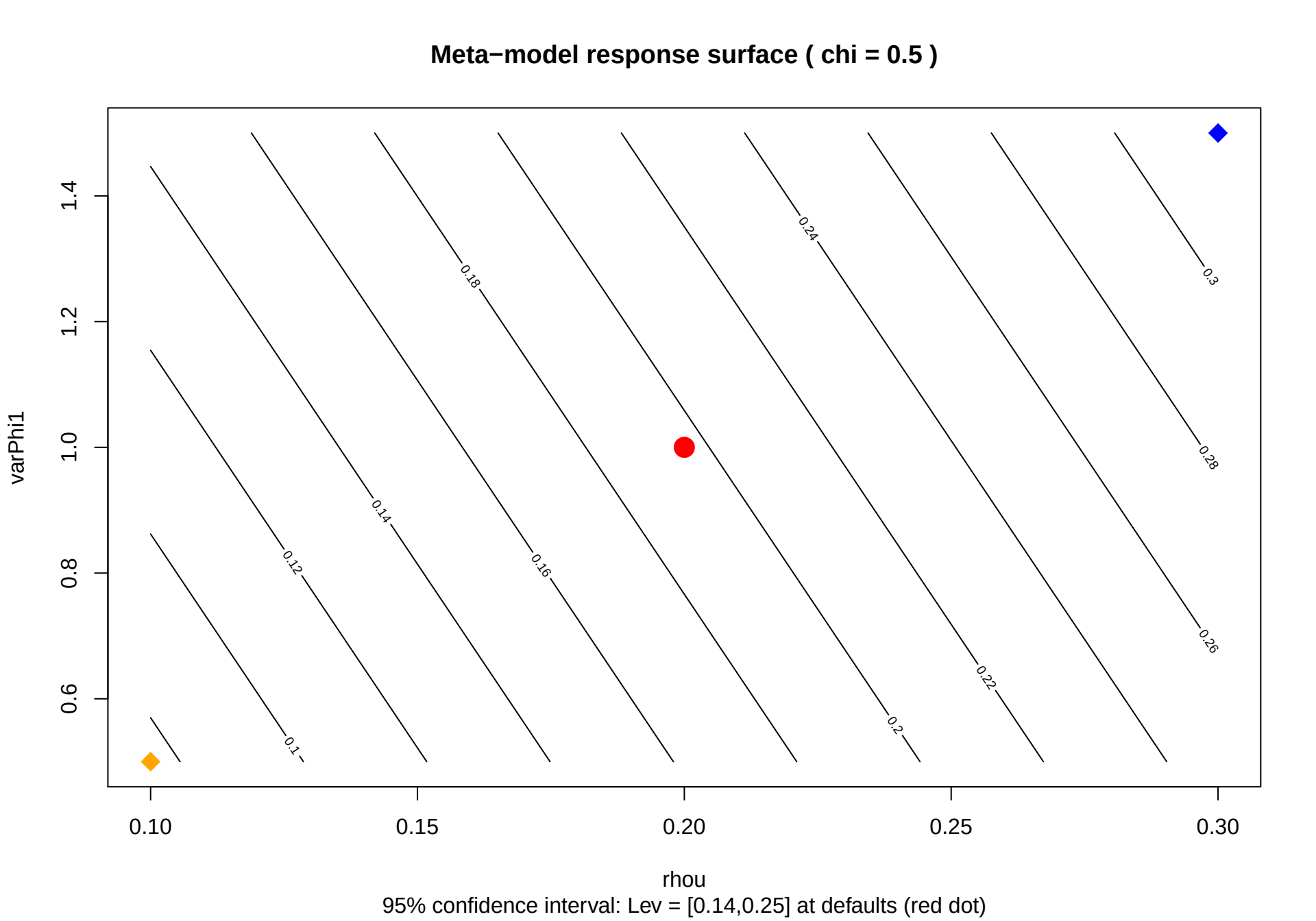

Meta−model response for parameter 'chi'
Lev
0.0
0.1
0.2
0.3
0.4
0.2
0.4
0.6
0.8
chi
Dotted lines at 95% confidence interval

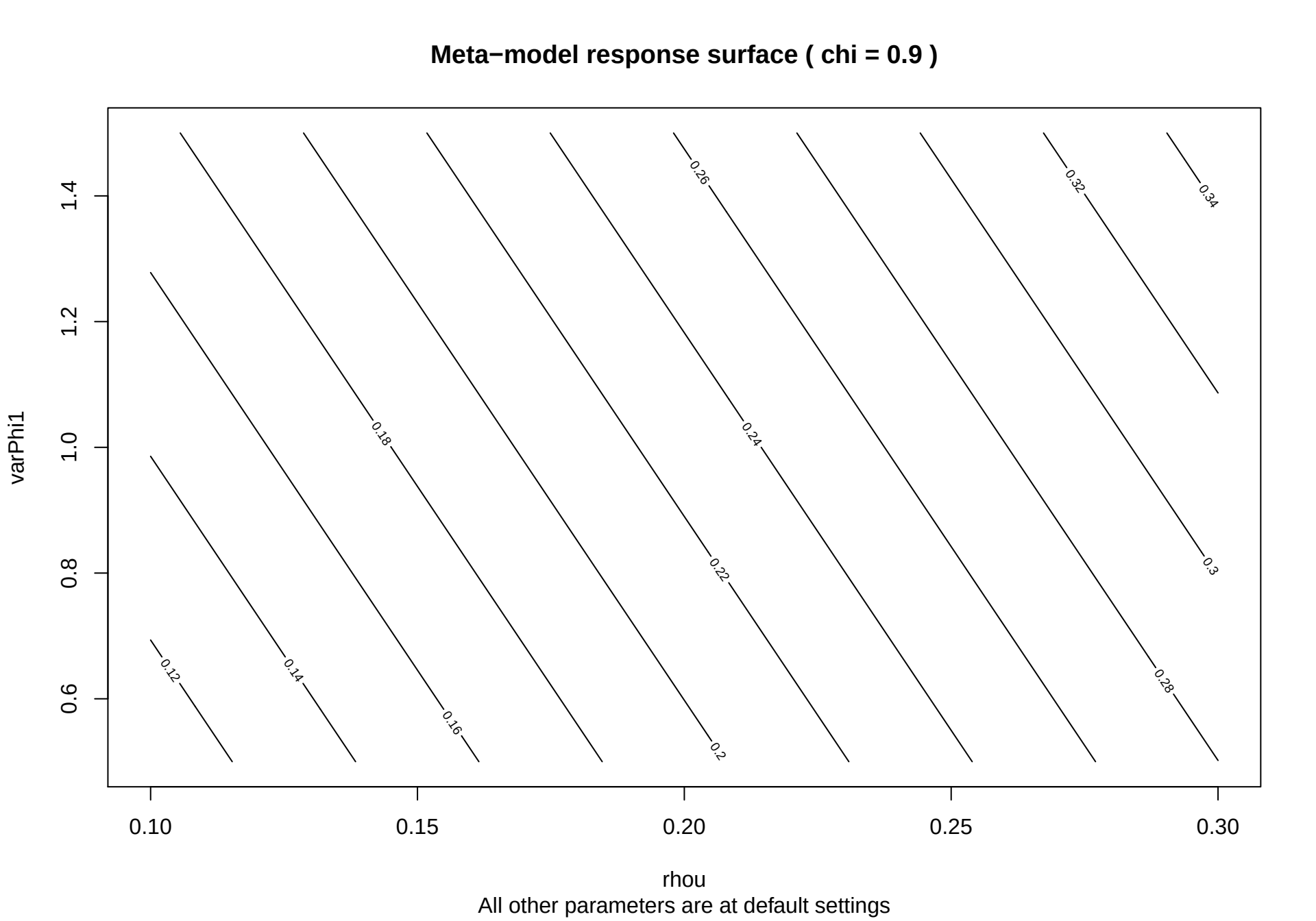

Meta−model response surface (chi = 0.1)
0.25
0.20
Lel
0.15
0.10
0.05
0.10
0.15
0.20
rhou
0.25
0.30
0.6
0.8
1.0
1.2
1.4
varPhi1
All other parameters are at default settings


Meta−model response surface (chi = 0.5)
Lev
0.30
0.25
0.20
0.15
0.10
rhou
0.10
0.15
0.20
0.25
0.30
varPhi1
0.6
0.8
1.0
1.2
1.4
95% confidence interval: Lev = [0.14,0.25] at defaults (red dot)


Meta−model response surface (chi = 0.9)
Lev
0.30
0.25
0.20
0.15
rhou
0.10
0.15
0.20
0.25
0.30
varPhi1
0.6
0.8
1.0
1.2
1.4
All other parameters are at default settings


Meta−model response surface (chi = 0.1)
varPhi1
0.6
0.8
1.0
1.2
1.4
0.10
0.15
0.20
0.25
0.30
rhou
All other parameters are at default settings
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.22
0.24
0.26


Meta−model response surface (chi = 0.5)
varPhi1
rhou
95% confidence interval: Lev = [0.14,0.25] at defaults (red dot)
0.6
0.8
1.0
1.2
1.4
0.10
0.15
0.20
0.25
0.30
0.1
0.12
0.14
0.16
0.18
0.2
0.22
0.24
0.26
0.28
0.3


Meta−model response surface (chi = 0.9)
varPhi1
0.6
0.8
1.0
1.2
1.4
0.10
0.15
0.20
0.25
0.30
rhou
All other parameters are at default settings
0.12
0.14
0.16
0.18
0.2
0.22
0.24
0.26
0.28
0.3
0.32
0.34