Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.8725	0.8562	0.9125	0.6281	0.5479
Q2 1st order poly. trend	0.8547	0.8292	0.8814	0.6868	0.8624
RMSE constant trend	0.1019	0.0764	0.0776	0.1019	0.1019
RMSE 1st order poly. trend	0.0583	0.0583	0.0583	0.0583	0.0583
MAE constant trend	0.0910	0.0637	0.0640	0.0910	0.0910
MAE 1st order poly. trend	0.0480	0.0480	0.0480	0.0480	0.0480
RMA constant trend	1.5934	1.4907	1.4835	1.5934	1.5934
RMA 1st order poly. trend	1.3335	1.3335	1.3335	1.3335	1.3335

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

Kriging meta−model estimation (standardized)

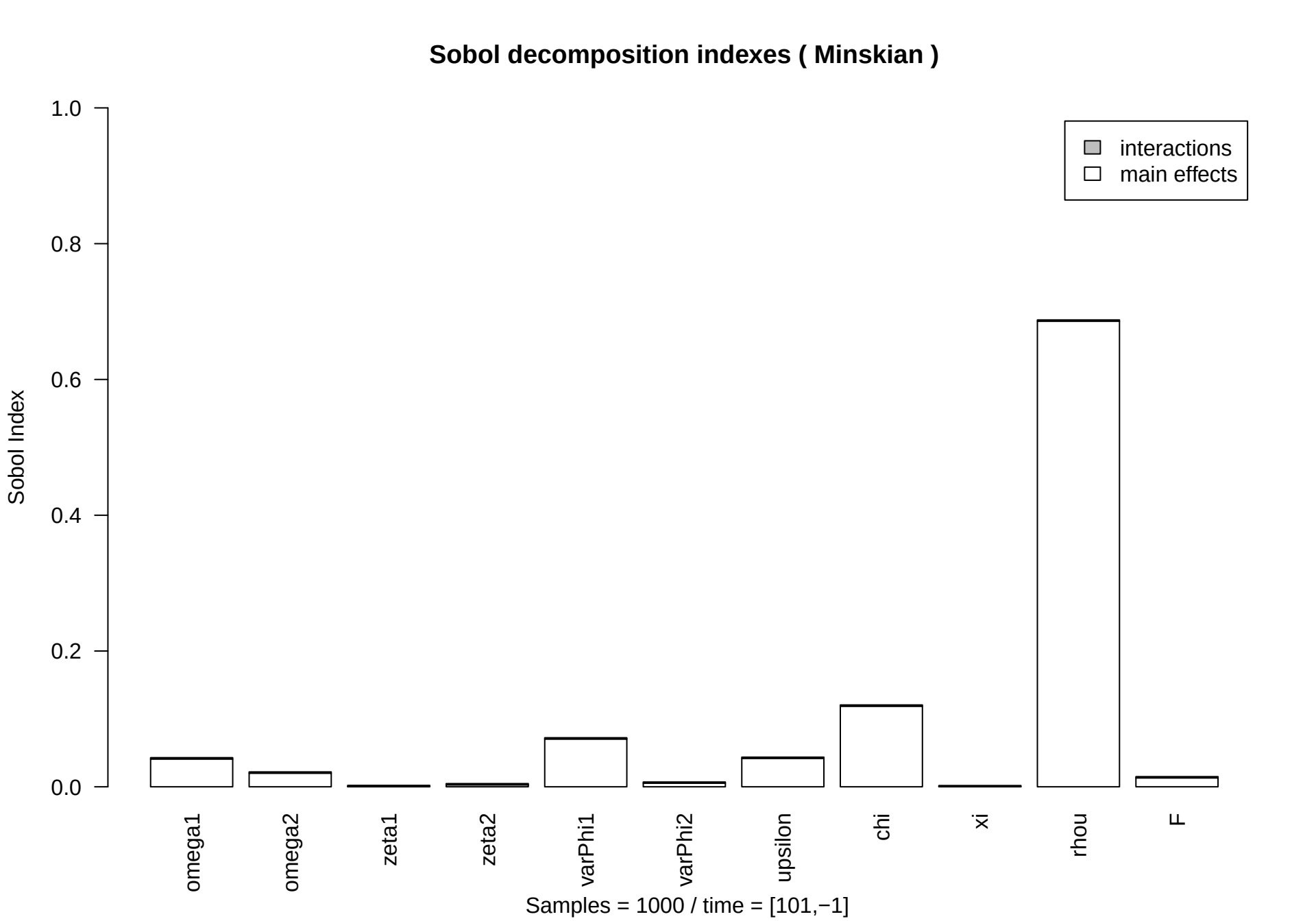
trend(intercept)	0.036	Trend specification	1st order poly.
trend(inclination)	0.072	Correlation function	Gaussian
theta(omega1)	0.514	Cross−sample Q2	0.881
theta(omega2)	0.343	External RMSE	0.058
theta(zeta1)	0.316	External MAE	0.048
theta(zeta2)	0.681	External RMA	1.333
theta(varPhi1)	1.803	DoE samples	65
theta(varPhi2)	0.747	External samples	20
theta(upsilon)	1.787		
theta(chi)	0.618		
theta(xi)	1.281		
theta(gammau)	1.287		
theta(n)	0.553		

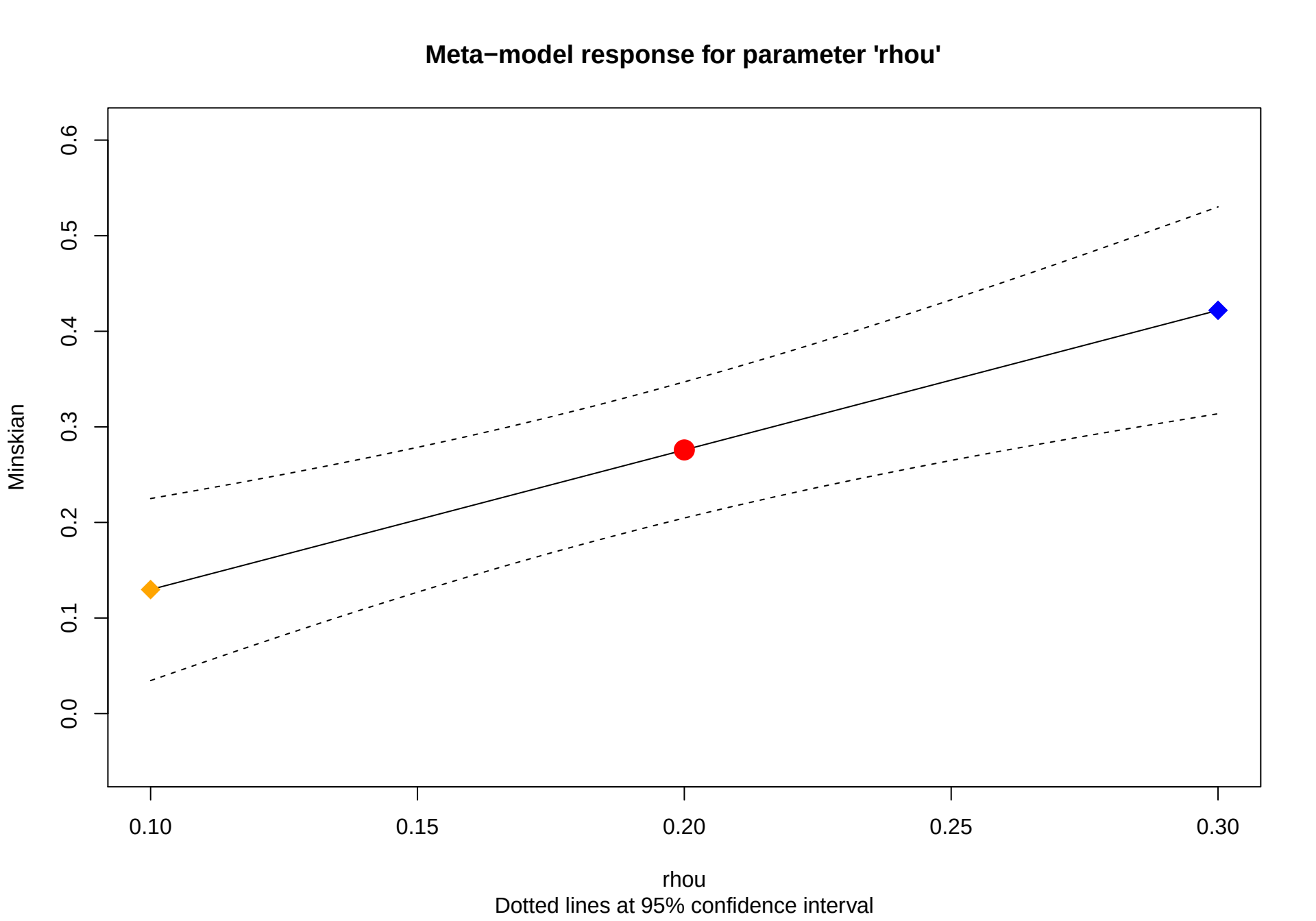
Variables rescaled to [0,1] / Average 95% CI = +/− 0.09
Predicted output at defaults: Minskian = 0.28, 95% CI = [0.2,0.35], time = [101,−1]

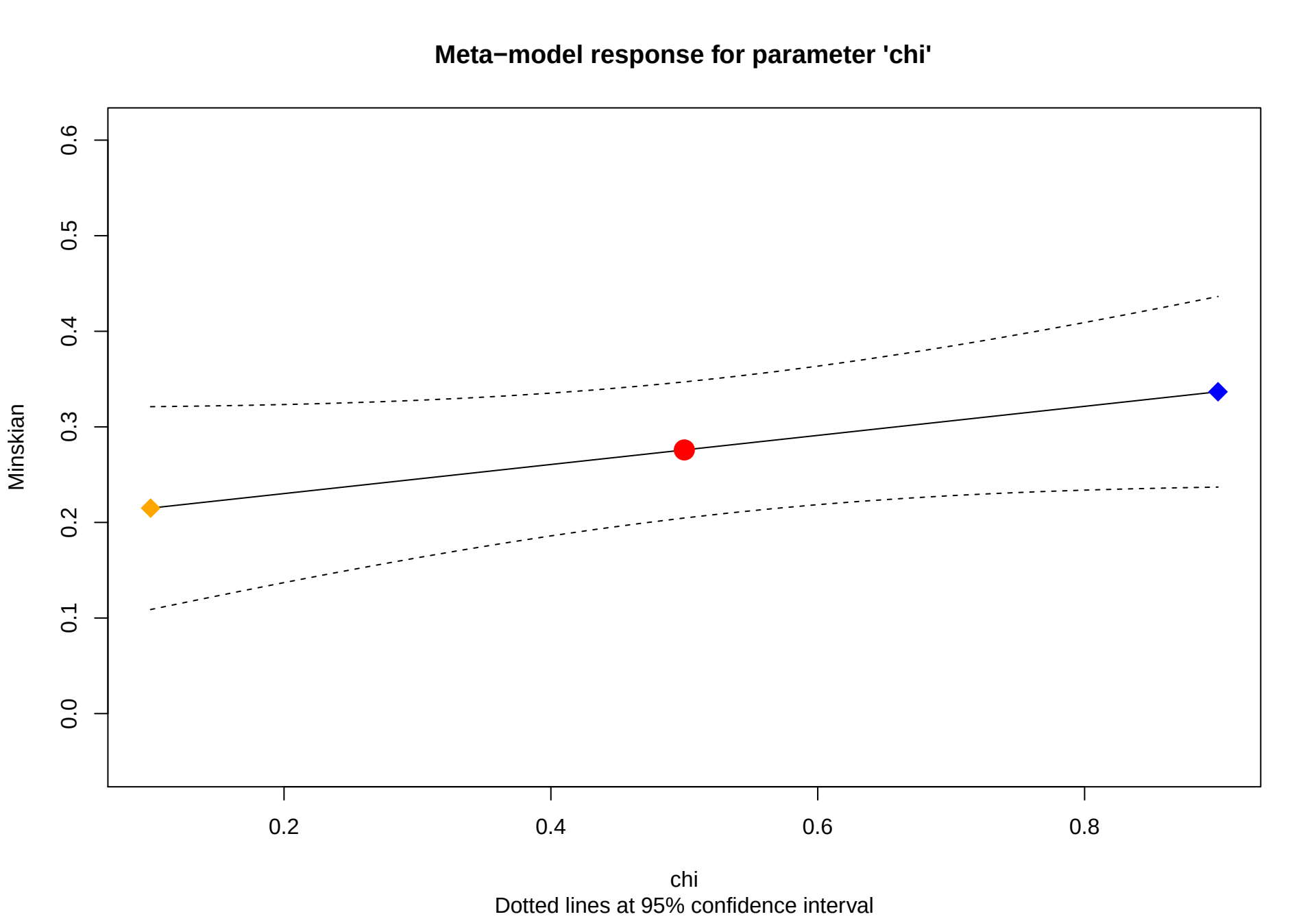
Sobol decomposition indexes (Minskian)

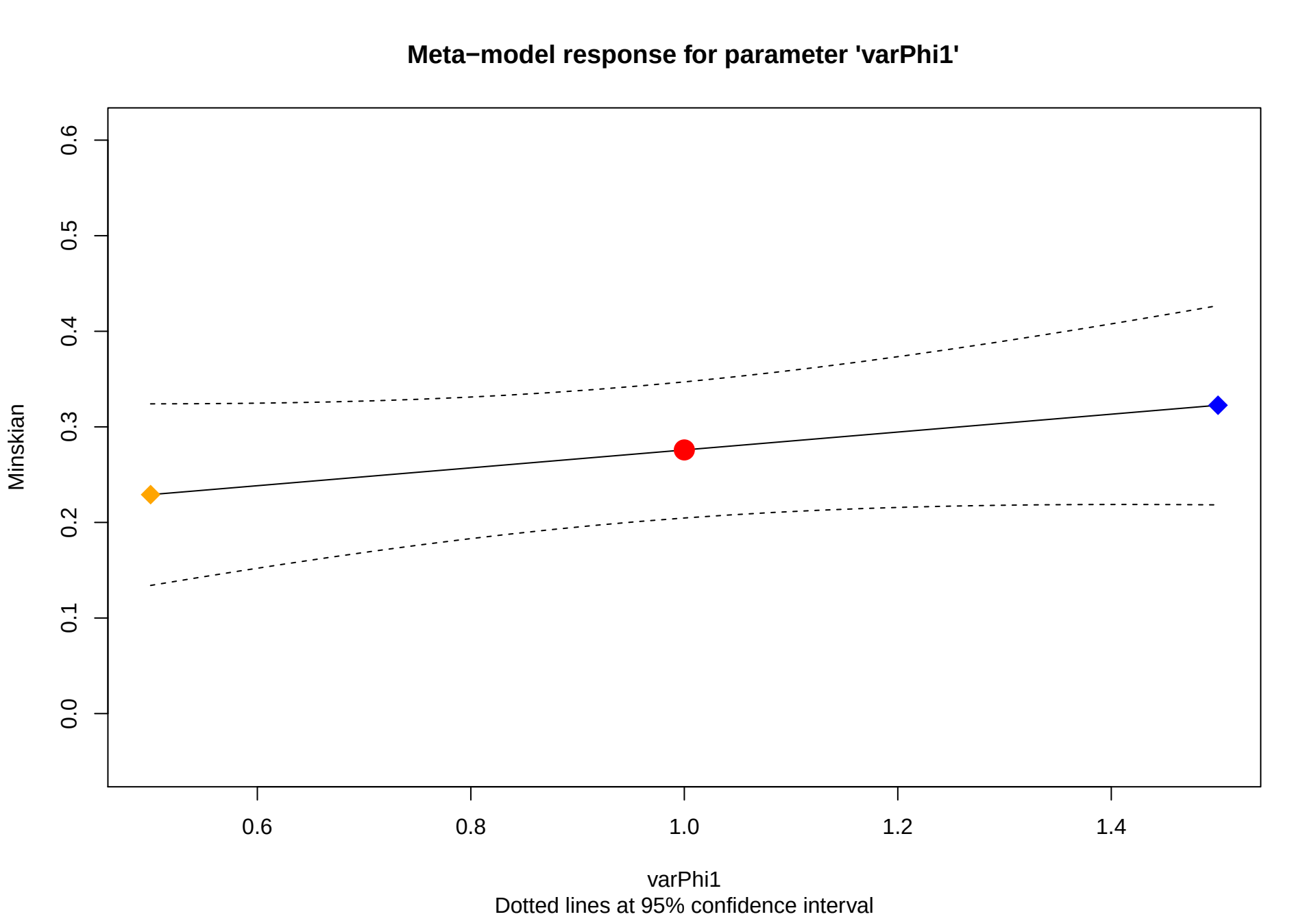
	Direct effects	Interactions
omega1	0.041	0.002
omega2	0.020	0.002
zeta1	0.000	0.002
zeta2	0.003	0.002
varPhi1	0.070	0.002
varPhi2	0.005	0.002
upsilon	0.042	0.002
chi	0.119	0.002
xi	0.000	0.002
gammau	0.686	0.002
n	0.013	0.002

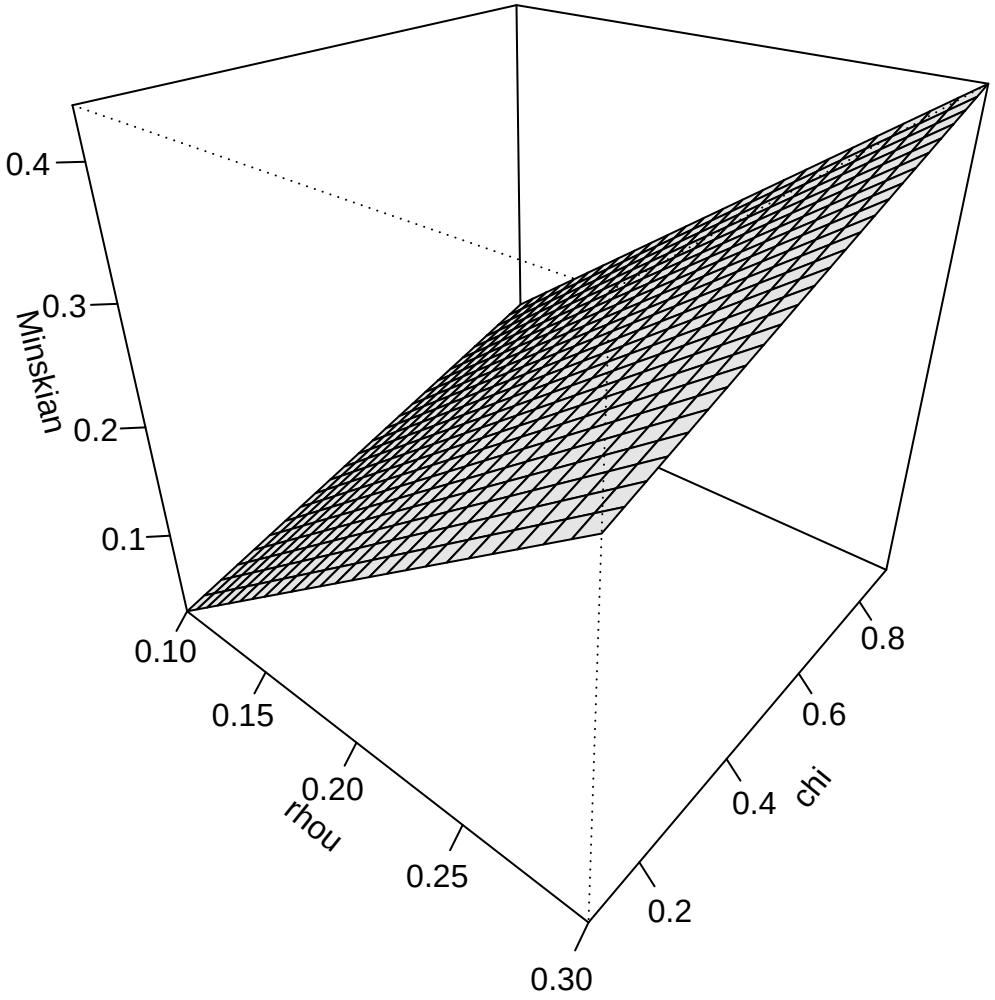
Samples = 1000 / time = [101,−1]

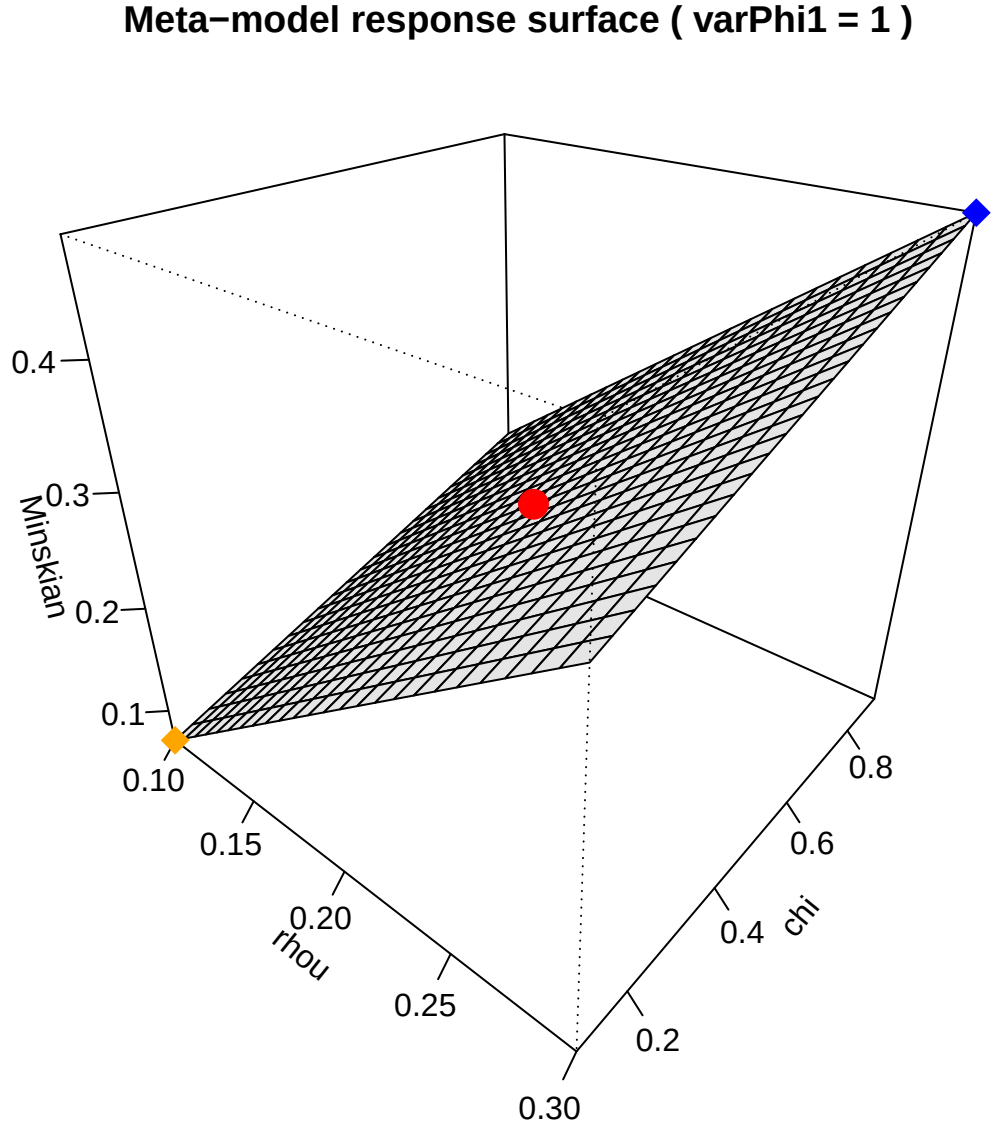

Sobol decomposition indexes (Minskian)
interactions
main effects
Sobol Index
1.0
0.8
0.6
0.4
0.2
0.0
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
rhou
F
Samples = 1000 / time = [101,−1]


Meta−model response for parameter 'rhou'
Minskian
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.10
0.15
0.20
0.25
0.30
rhou
Dotted lines at 95% confidence interval

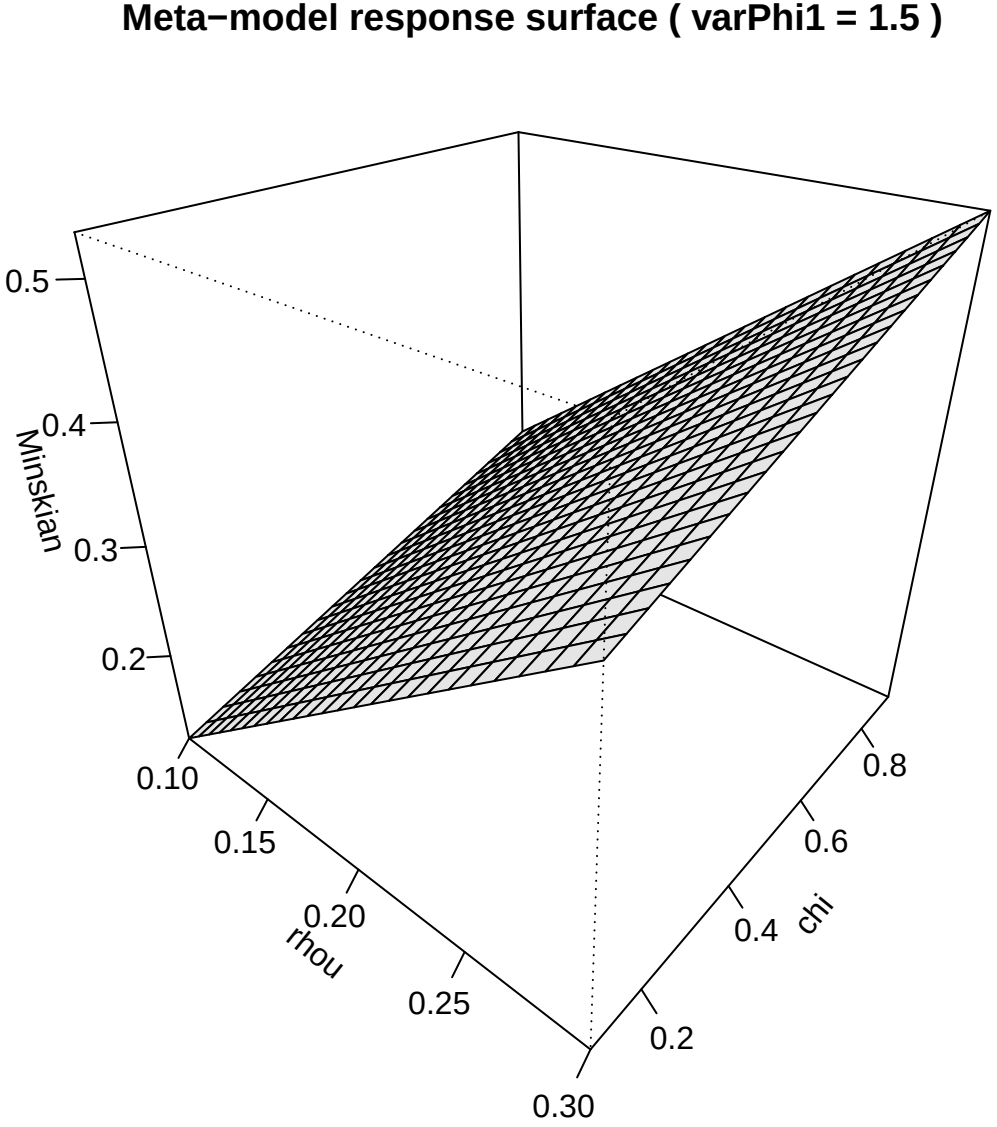

Meta−model response for parameter 'chi'
Minskian
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.2
0.4
0.6
0.8
chi
Dotted lines at 95% confidence interval

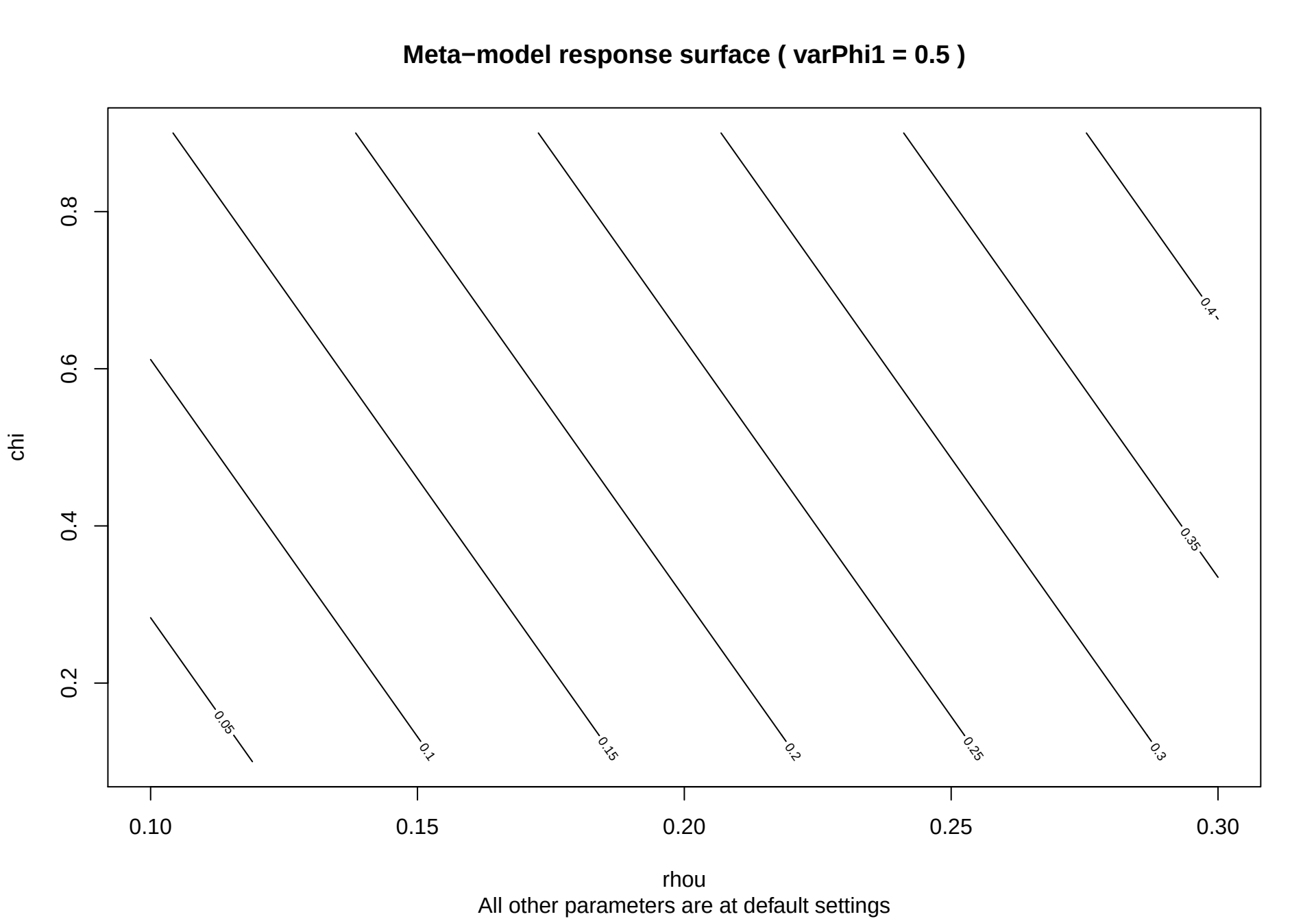

Meta−model response for parameter 'varPhi1'
Minskian
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.6
0.8
1.0
1.2
1.4
varPhi1
Dotted lines at 95% confidence interval

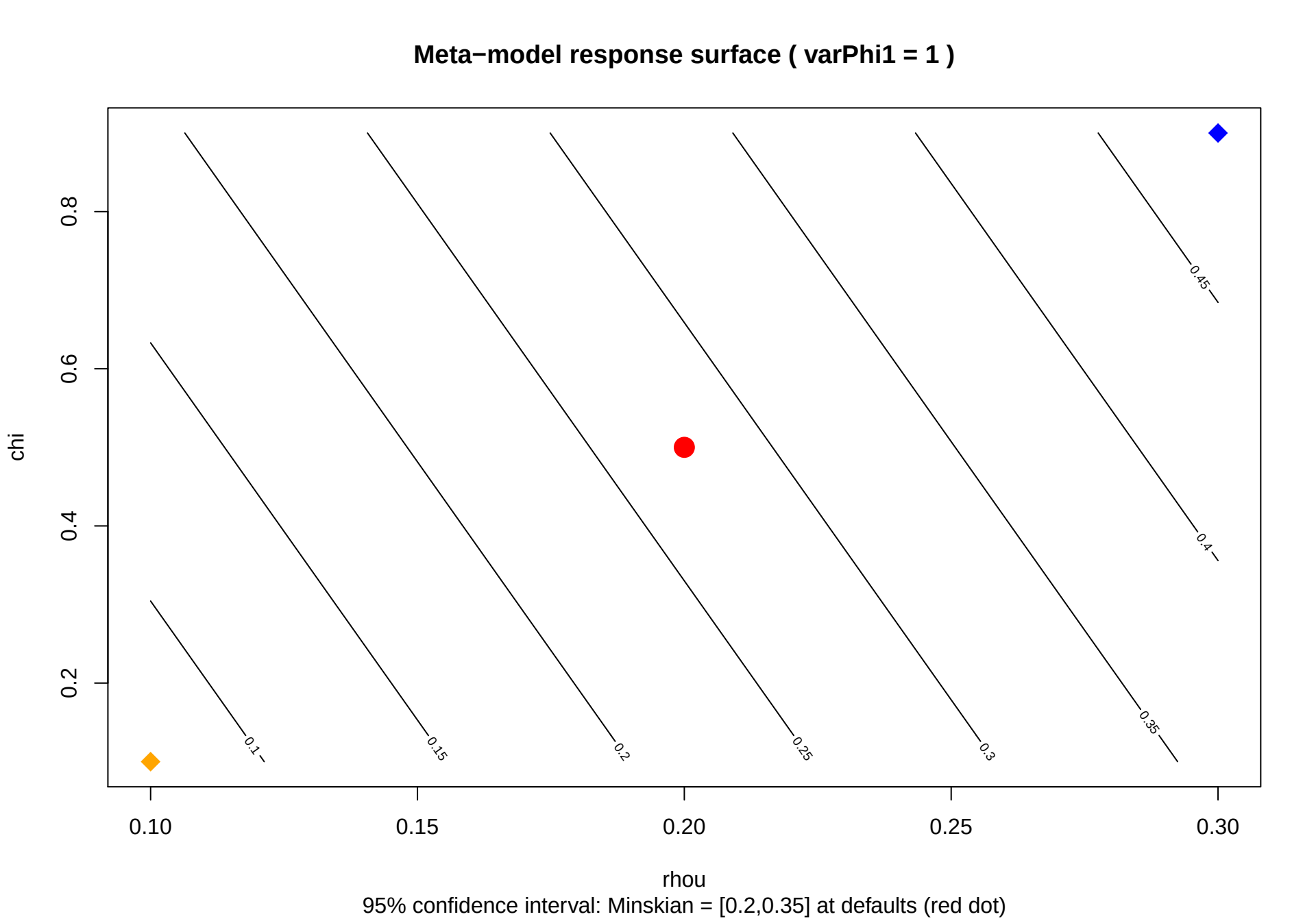

Meta−model response surface (varPhi1 = 0.5)
Minskian
0.4
0.3
0.2
0.1
rhou
0.10
0.15
0.20
0.25
0.30
chi
0.2
0.4
0.6
0.8
All other parameters are at default settings

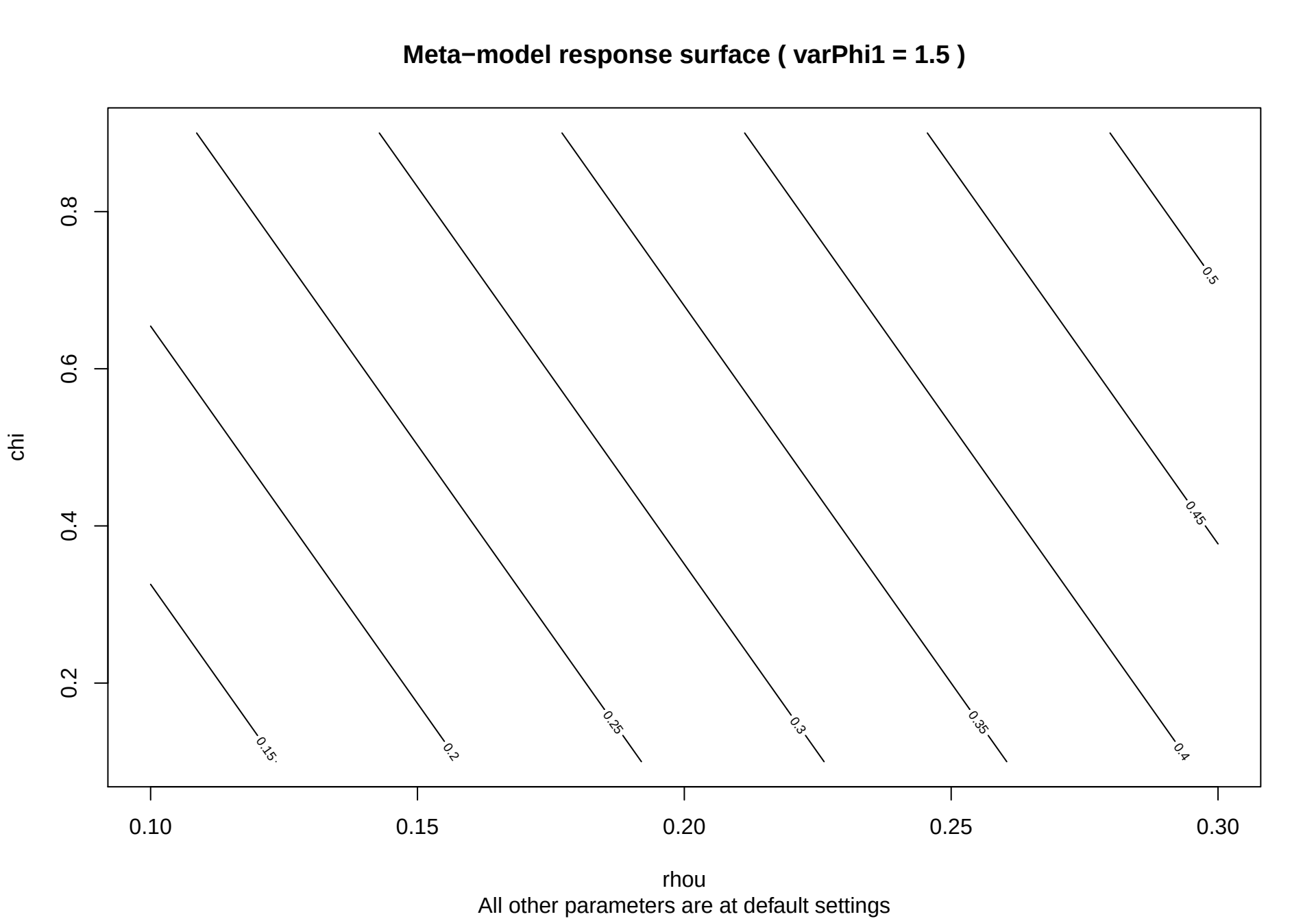


95% confidence interval: Minskian = [0.2,0.35] at defaults (red dot)


Meta−model response surface (varPhi1 = 1.5)
Minskian
0.5
0.4
0.3
0.2
rhou
0.10
0.15
0.20
0.25
0.30
chi
0.2
0.4
0.6
0.8
All other parameters are at default settings


Meta−model response surface (varPhi1 = 0.5)
chi
0.2
0.4
0.6
0.8
0.10
0.15
0.20
0.25
0.30
rhou
All other parameters are at default settings
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4


Meta−model response surface (varPhi1 = 1)
chi
rhou
0.2
0.4
0.6
0.8
0.10
0.15
0.20
0.25
0.30
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
95% confidence interval: Minskian = [0.2,0.35] at defaults (red dot)


Meta−model response surface (varPhi1 = 1.5)
chi
0.2
0.4
0.6
0.8
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.10
0.15
0.20
0.25
0.30
rhou
All other parameters are at default settings