Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.6575	0.6603	0.6762	0.5601	0.7076
Q2 1st order poly. trend	0.7022	0.6745	0.6979	0.5926	0.6583
RMSE constant trend	0.0065	0.0065	0.0065	0.0065	0.0065
RMSE 1st order poly. trend	0.0053	0.0053	0.0053	0.0053	0.0053
MAE constant trend	0.0047	0.0047	0.0047	0.0047	0.0047
MAE 1st order poly. trend	0.0035	0.0035	0.0035	0.0035	0.0035
RMA constant trend	2.4151	2.4151	2.4151	2.4151	2.4151
RMA 1st order poly. trend	2.2910	2.2910	2.2910	2.2910	2.2910

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

Kriging meta−model estimation (standardized)

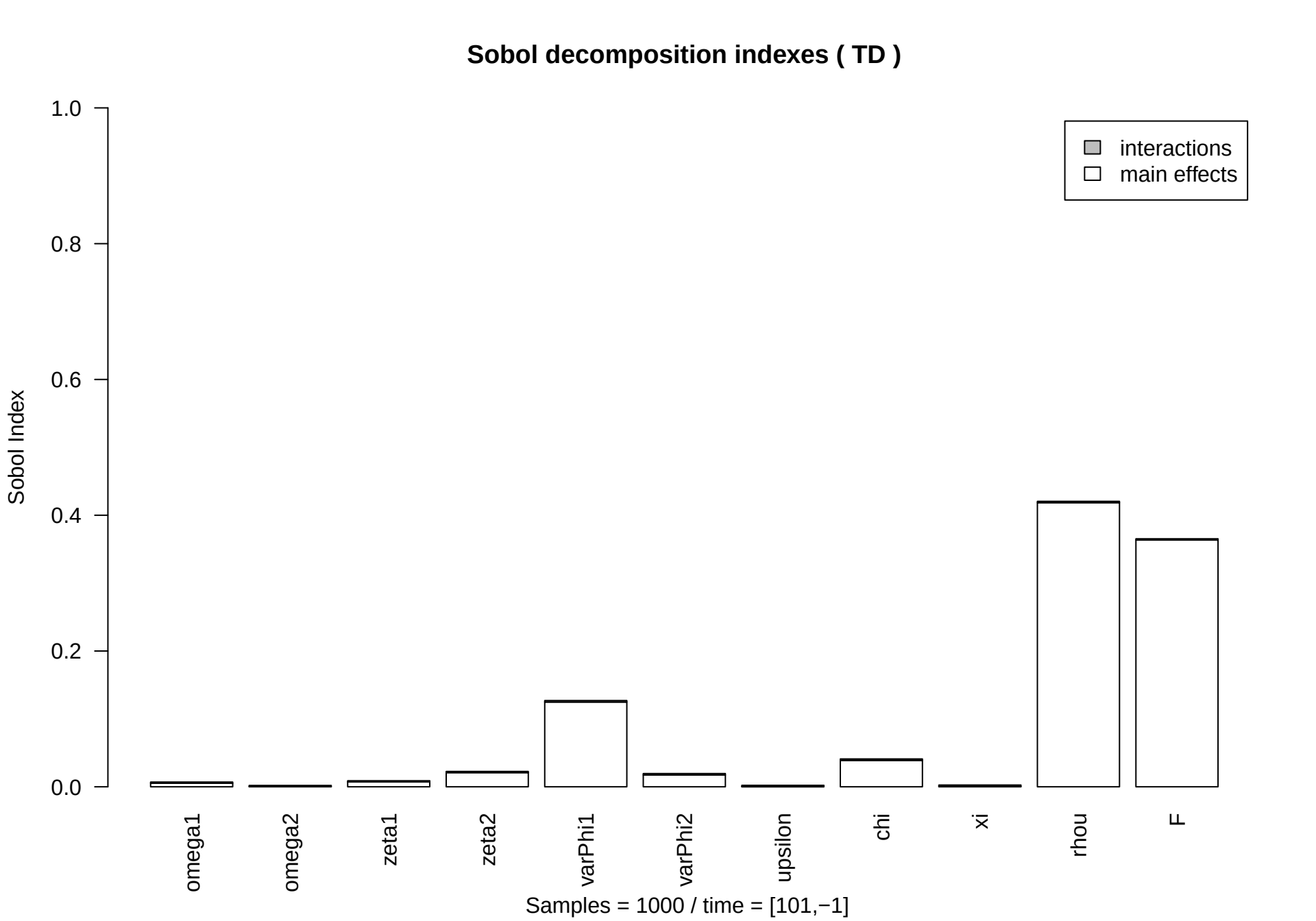
trend(intercept)	0.074	Trend specification	1st order poly.
trend(inclination)	0.001	Correlation function	Matern 5/2
theta(omega1)	0.837	Cross−sample Q2	0.702
theta(omega2)	0.442	External RMSE	0.005
theta(zeta1)	0.768	External MAE	0.004
theta(zeta2)	1.825	External RMA	2.291
theta(varPhi1)	1.232	DoE samples	65
theta(varPhi2)	0.475	External samples	20
theta(upsilon)	1.342		
theta(chi)	1.012		
theta(xi)	1.796		
theta(gammau)	1.218		
theta(n)	1.613		

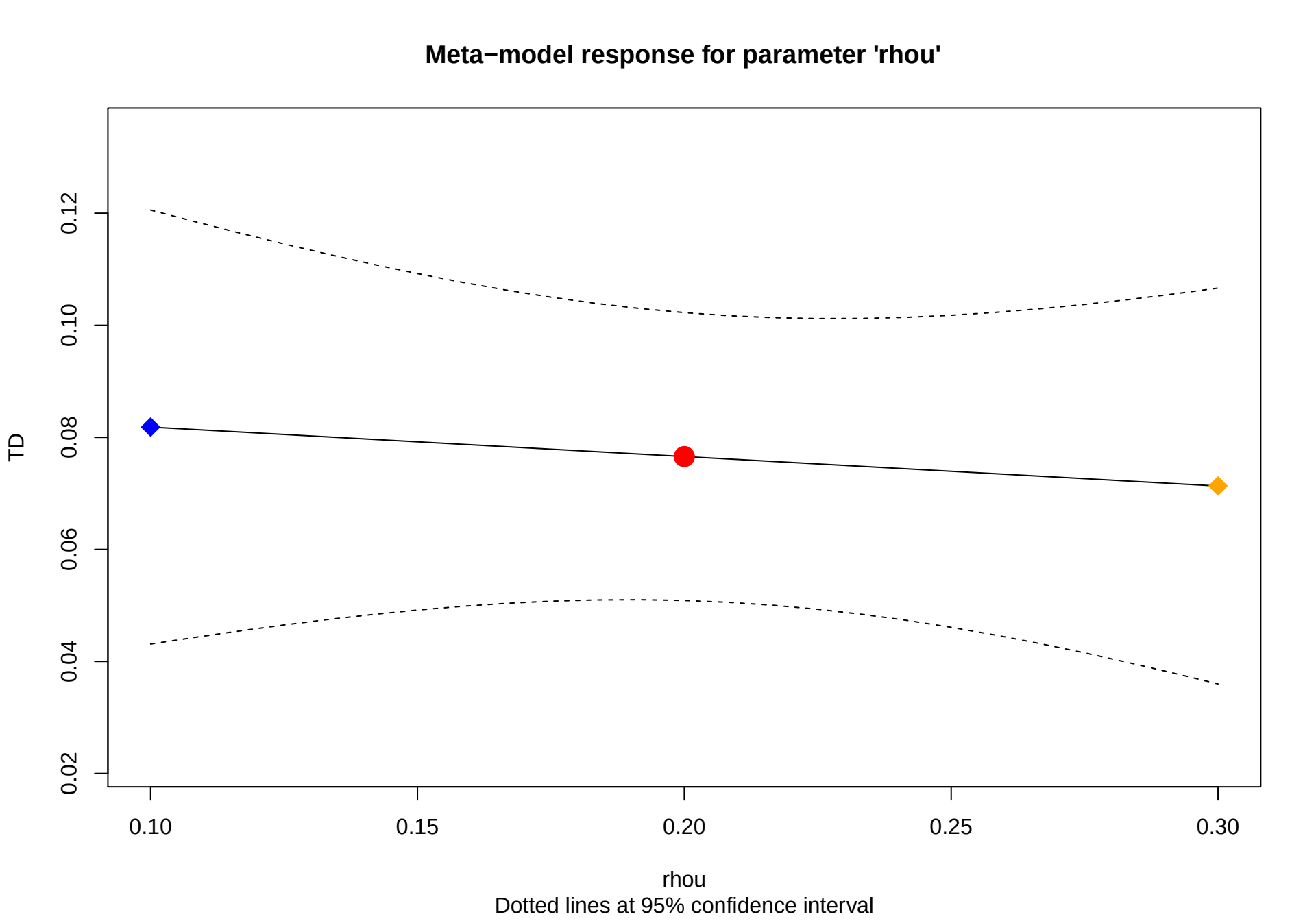
Variables rescaled to [0,1] / Average 95% CI = +/− 0.03
Predicted output at defaults: TD = 0.08, 95% CI = [0.05,0.1], time = [101,−1]

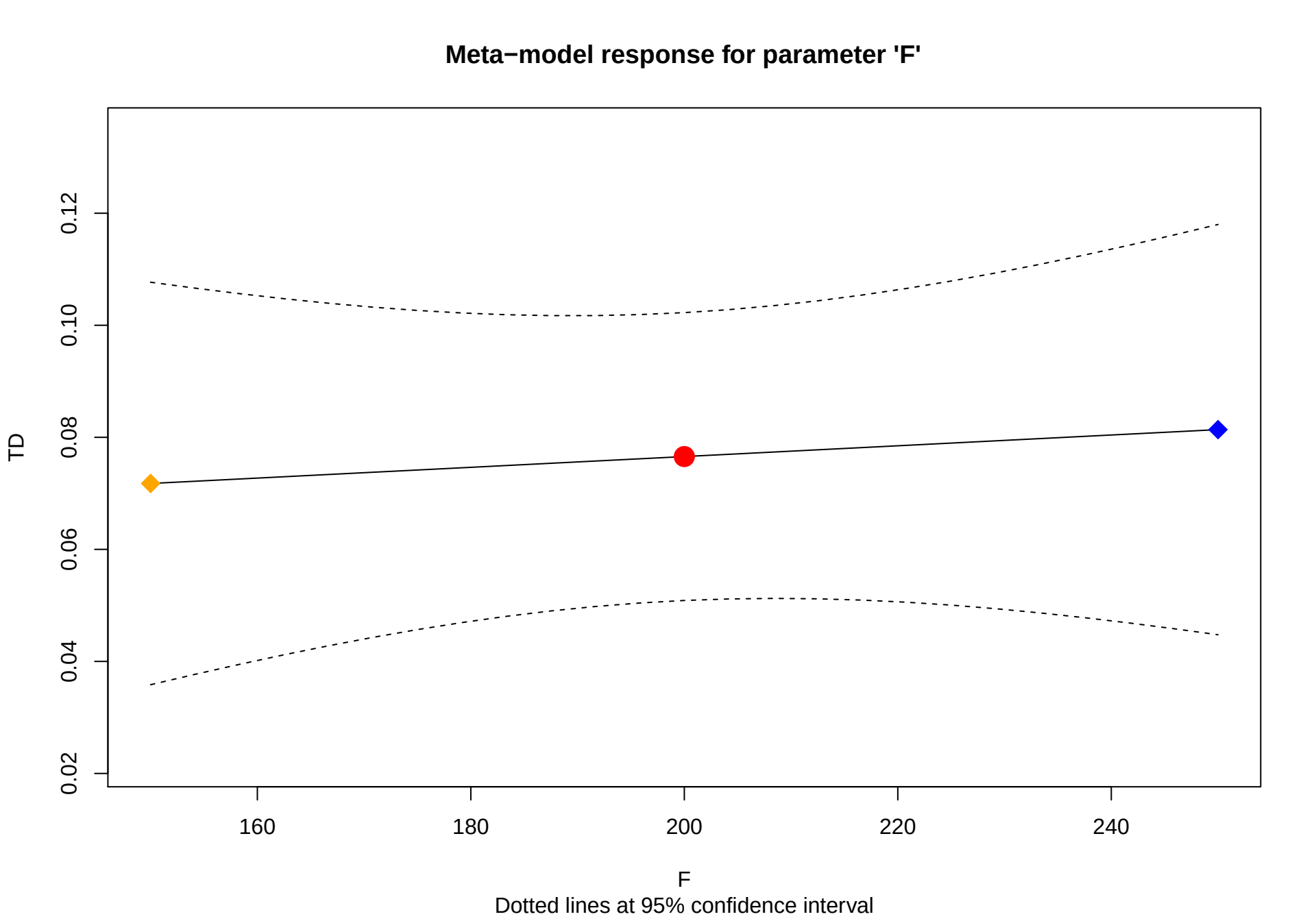
Sobol decomposition indexes (TD)

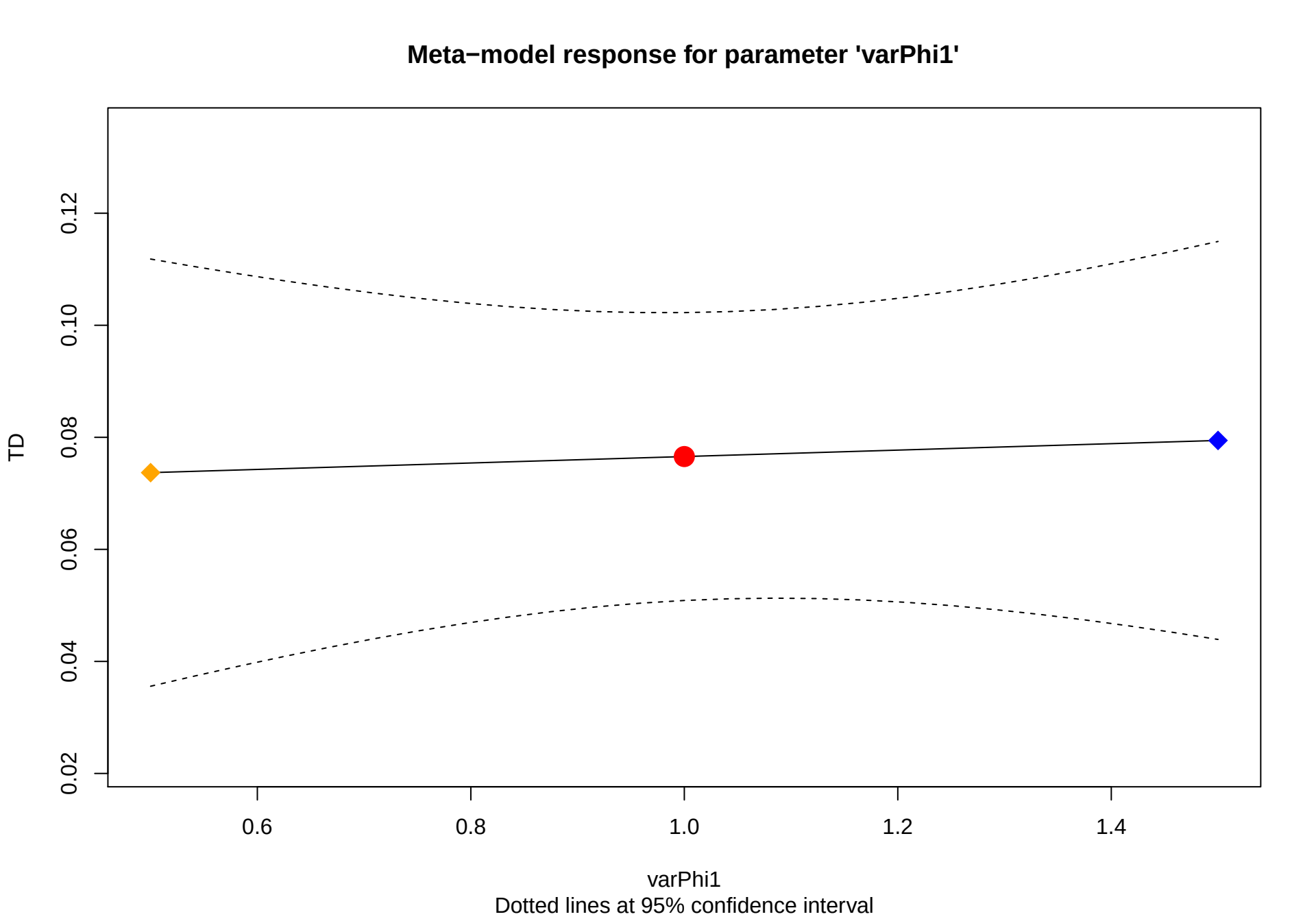
	Direct effects	Interactions
omega1	0.005	0.002
omega2	0.000	0.002
zeta1	0.007	0.002
zeta2	0.021	0.002
varPhi1	0.125	0.002
varPhi2	0.017	0.002
upsilon	0.000	0.002
chi	0.039	0.002
xi	0.000	0.002
gammau	0.418	0.002
n	0.363	0.002

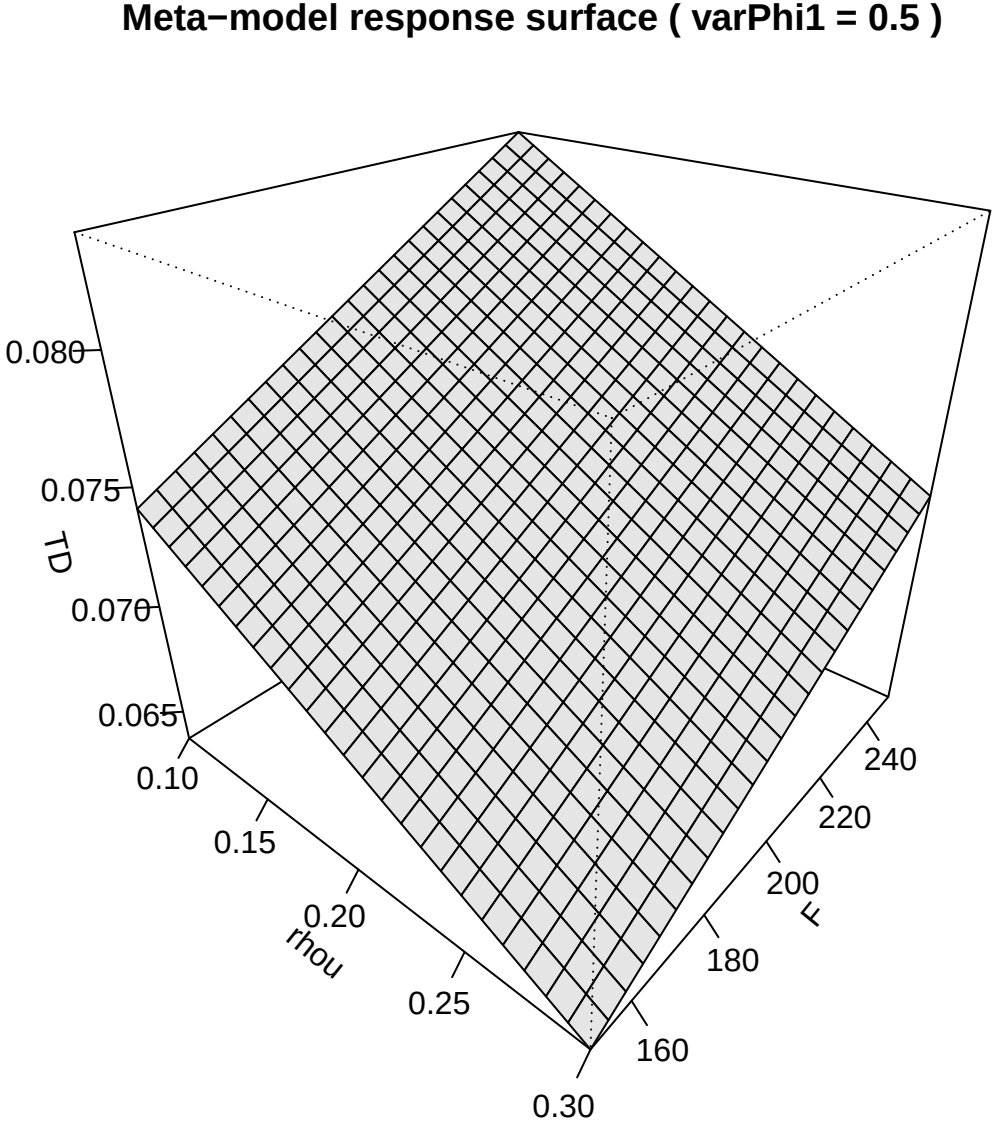
Samples = 1000 / time = [101,−1]

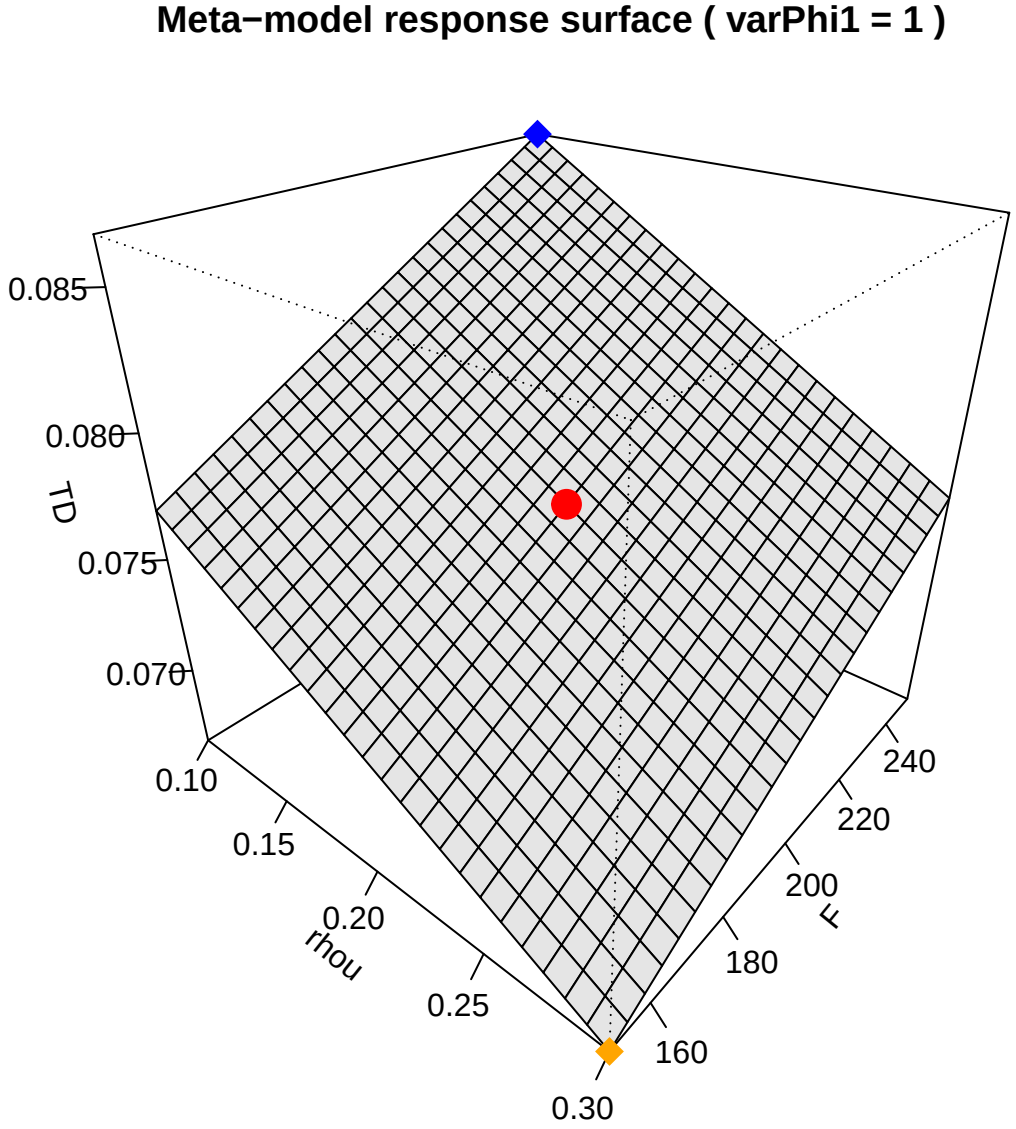

Sobol decomposition indexes (TD)
interactions
main effects
Sobol Index
1.0
0.8
0.6
0.4
0.2
0.0
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
rhou
F
Samples = 1000 / time = [101,−1]


Meta−model response for parameter 'rhou'
TD
0.02
0.04
0.06
0.08
0.10
0.12
0.10
0.15
0.20
0.25
0.30
rhou
Dotted lines at 95% confidence interval

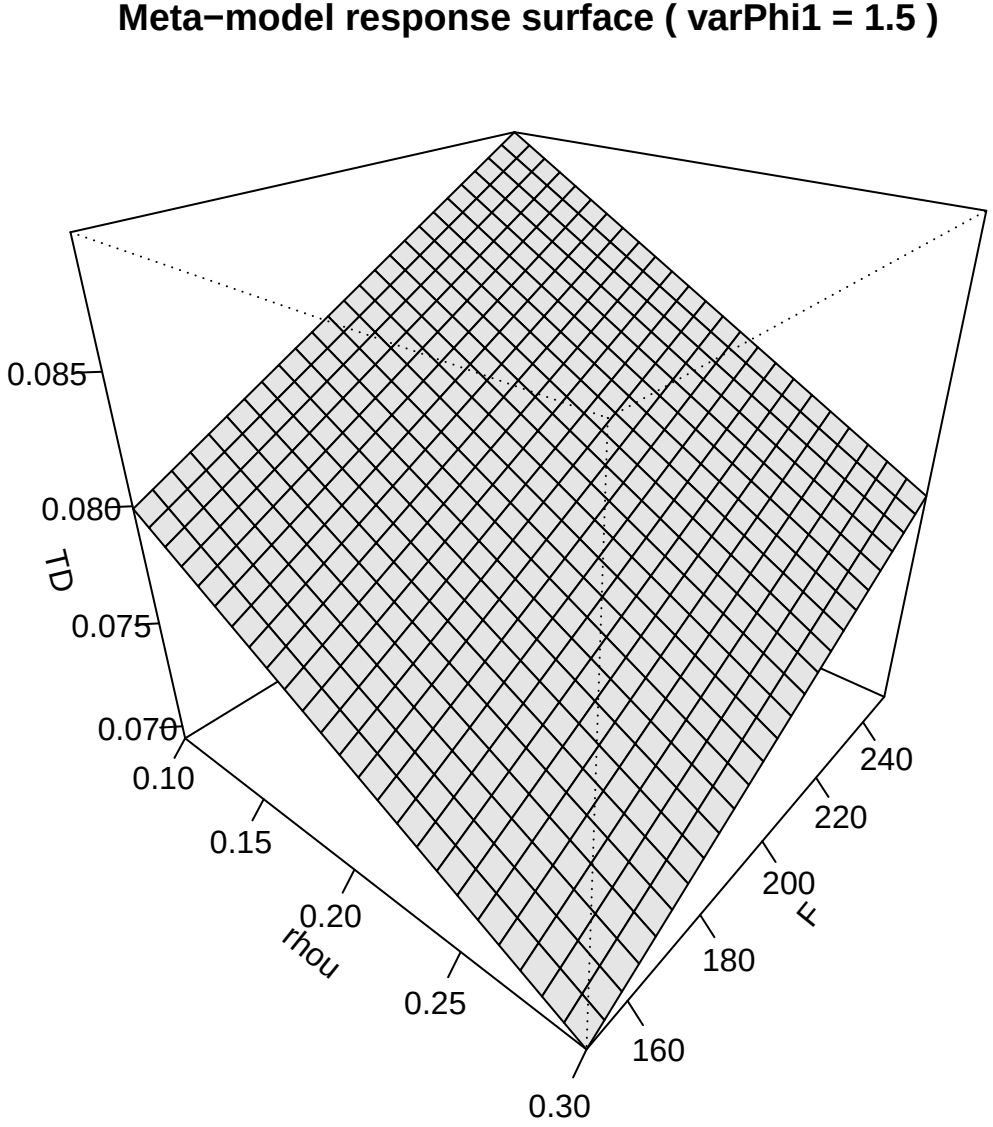

Meta−model response for parameter 'F'
TD
0.02
0.04
0.06
0.08
0.10
0.12
160
180
200
220
240
F
Dotted lines at 95% confidence interval

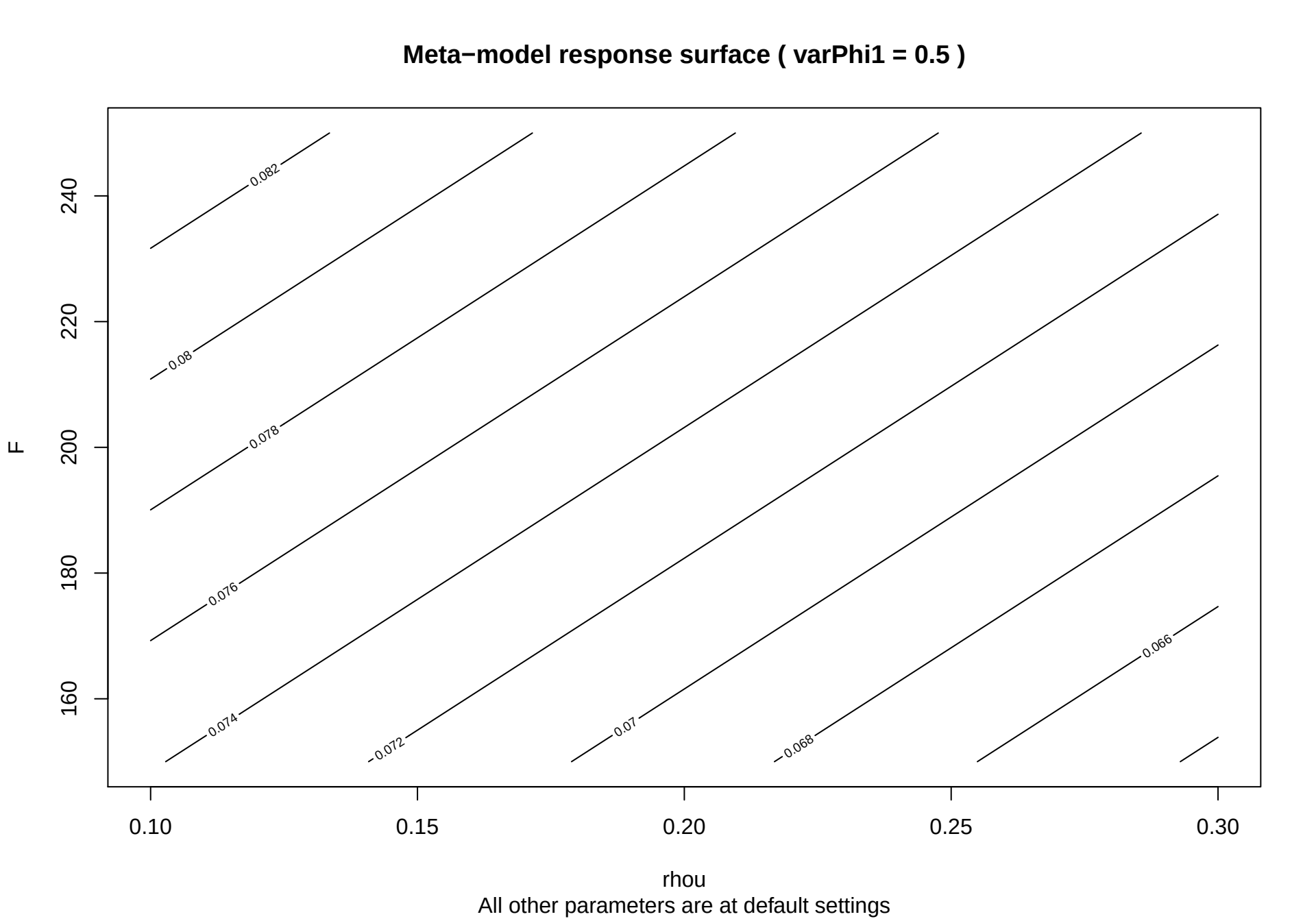

Meta−model response for parameter 'varPhi1'
TD
0.02
0.04
0.06
0.08
0.10
0.12
0.6
0.8
1.0
1.2
1.4
varPhi1
Dotted lines at 95% confidence interval

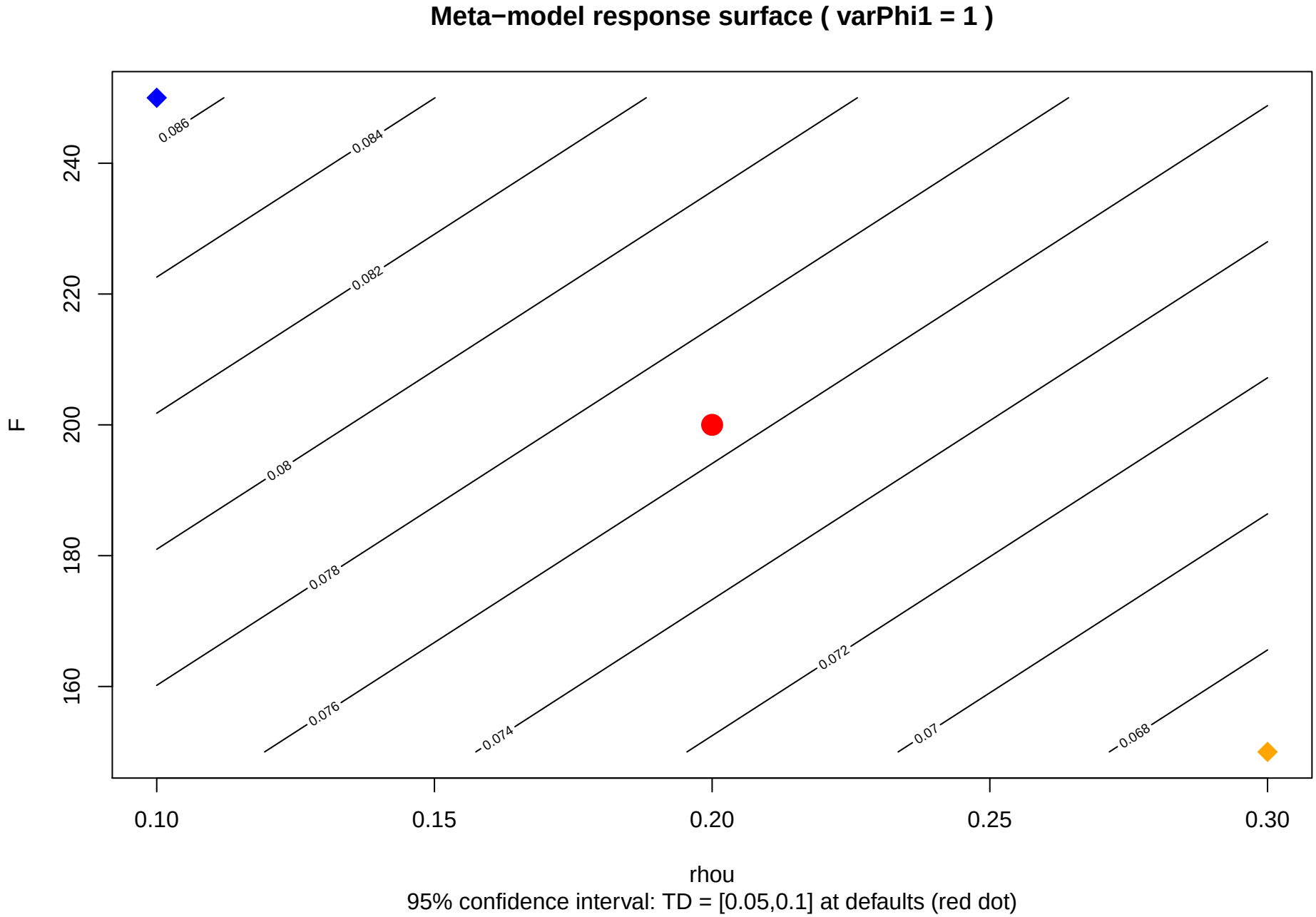

Meta−model response surface (varPhi1 = 0.5)
0.080
0.075
0.070
0.065
TD
0.10
0.15
0.20
0.25
0.30
rhou
160
180
200
220
240
F
All other parameters are at default settings

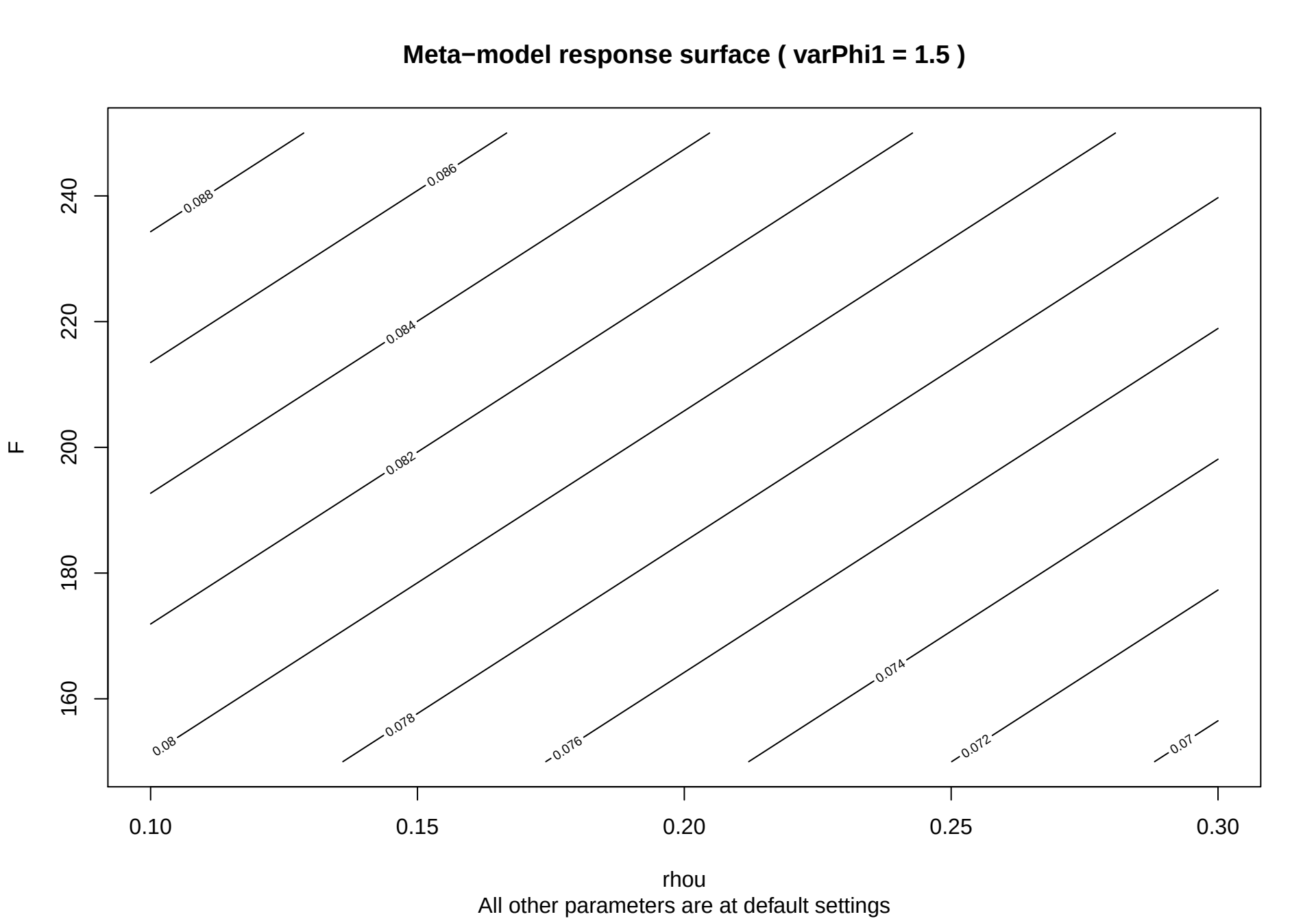


95% confidence interval: TD = [0.05,0.1] at defaults (red dot)


Meta−model response surface (varPhi1 = 1.5)
0.085
0.080
0.075
0.070
TD
0.10
0.15
0.20
0.25
0.30
rhou
160
180
200
220
240
F
All other parameters are at default settings


Meta−model response surface (varPhi1 = 0.5)
F
160
180
200
220
240
0.10
0.15
0.20
0.25
0.30
rhou
All other parameters are at default settings
0.082
0.08
0.078
0.076
0.074
0.072
0.07
0.068
0.066


Meta−model response surface (varPhi1 = 1)
F
240
220
200
180
160
0.086
0.084
0.082
0.08
0.078
0.076
0.074
0.072
0.07
0.068
0.10
0.15
0.20
0.25
0.30
rhou
95% confidence interval: TD = [0.05,0.1] at defaults (red dot)


Meta−model response surface (varPhi1 = 1.5)
F
160
180
200
220
240
0.088
0.086
0.084
0.082
0.08
0.078
0.076
0.074
0.072
0.07
0.10
0.15
0.20
0.25
0.30
rhou
All other parameters are at default settings