Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.7571	0.7236	0.7899	0.5803	0.7254
Q2 1st order poly. trend	0.8072	0.6844	0.7058	0.6674	0.6717
RMSE constant trend	0.0521	0.0521	0.0521	0.0521	0.0521
RMSE 1st order poly. trend	0.0204	0.0204	0.0204	0.0204	0.0204
MAE constant trend	0.0464	0.0464	0.0464	0.0464	0.0464
MAE 1st order poly. trend	0.0147	0.0147	0.0147	0.0147	0.0147
RMA constant trend	1.9846	1.9846	1.9846	1.9846	1.9846
RMA 1st order poly. trend	0.9033	0.9033	0.9033	0.9033	0.9033

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

Kriging meta−model estimation (standardized)

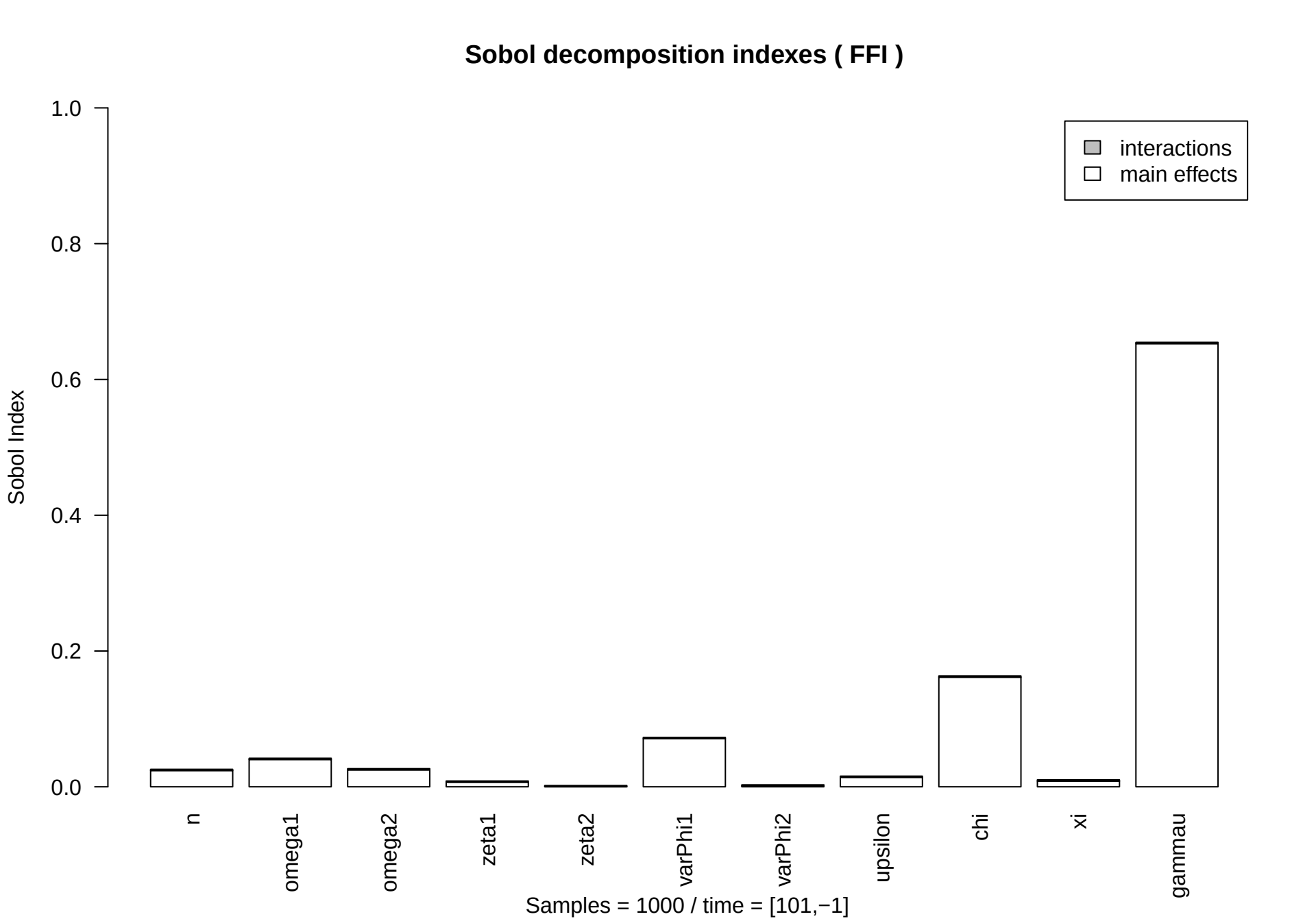
trend(intercept)	0.094	Trend specification	1st order poly.
trend(inclination)	−0.030	Correlation function	Matern 5/2
theta(n)	1.152	Cross−sample Q2	0.807
theta(omega1)	0.063	External RMSE	0.020
theta(omega2)	0.063	External MAE	0.015
theta(zeta1)	1.017	External RMA	0.903
theta(zeta2)	0.379	DoE samples	65
theta(varPhi1)	0.456	External samples	10
theta(varPhi2)	1.048		
theta(upsilon)	0.819		
theta(chi)	1.382		
theta(xi)	0.122		
theta(gammau)	1.533		

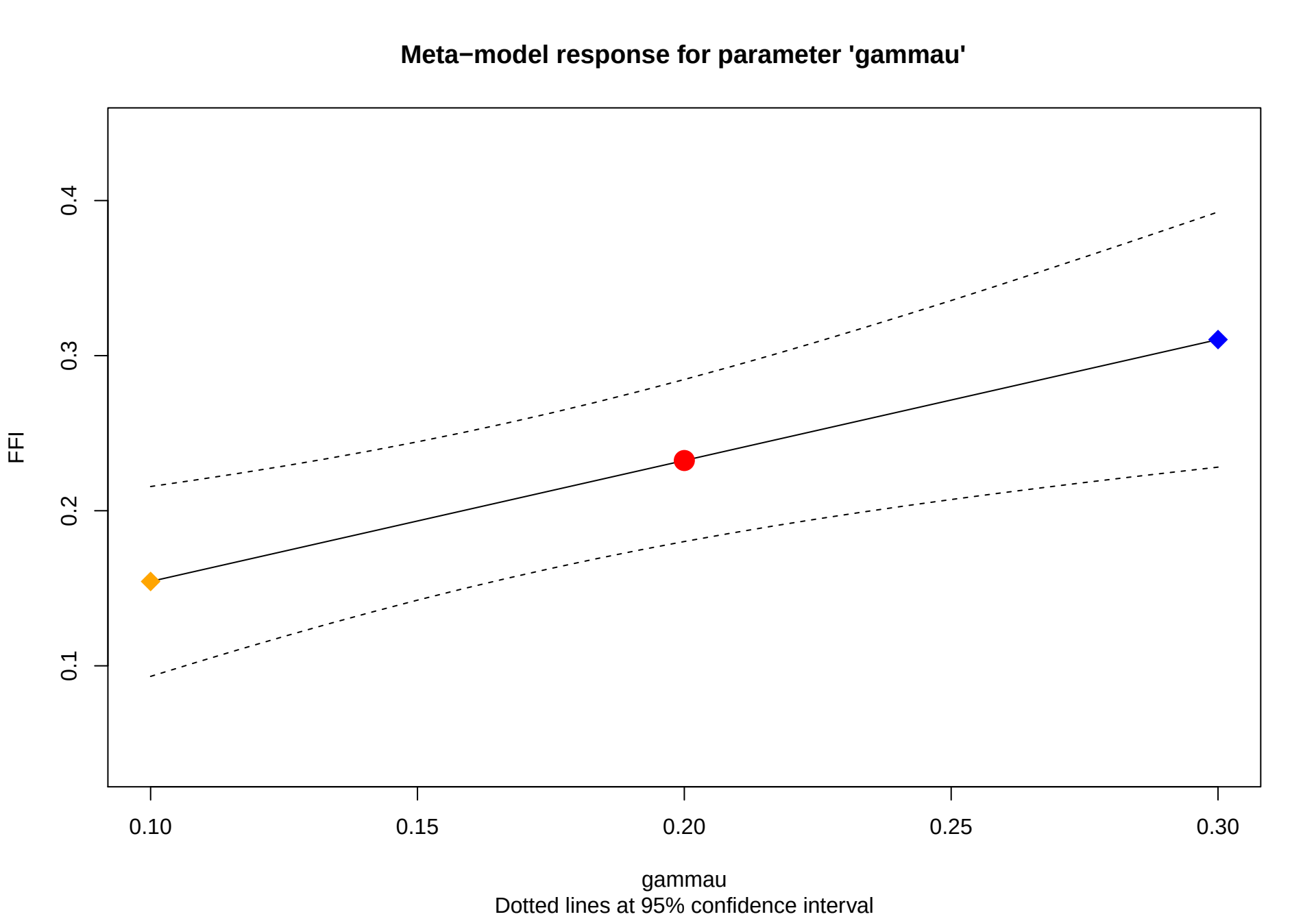
Variables rescaled to [0,1] / Average 95% CI = +/− 0.07
Predicted output at defaults: FFI = 0.23, 95% CI = [0.18,0.28], time = [101,−1]

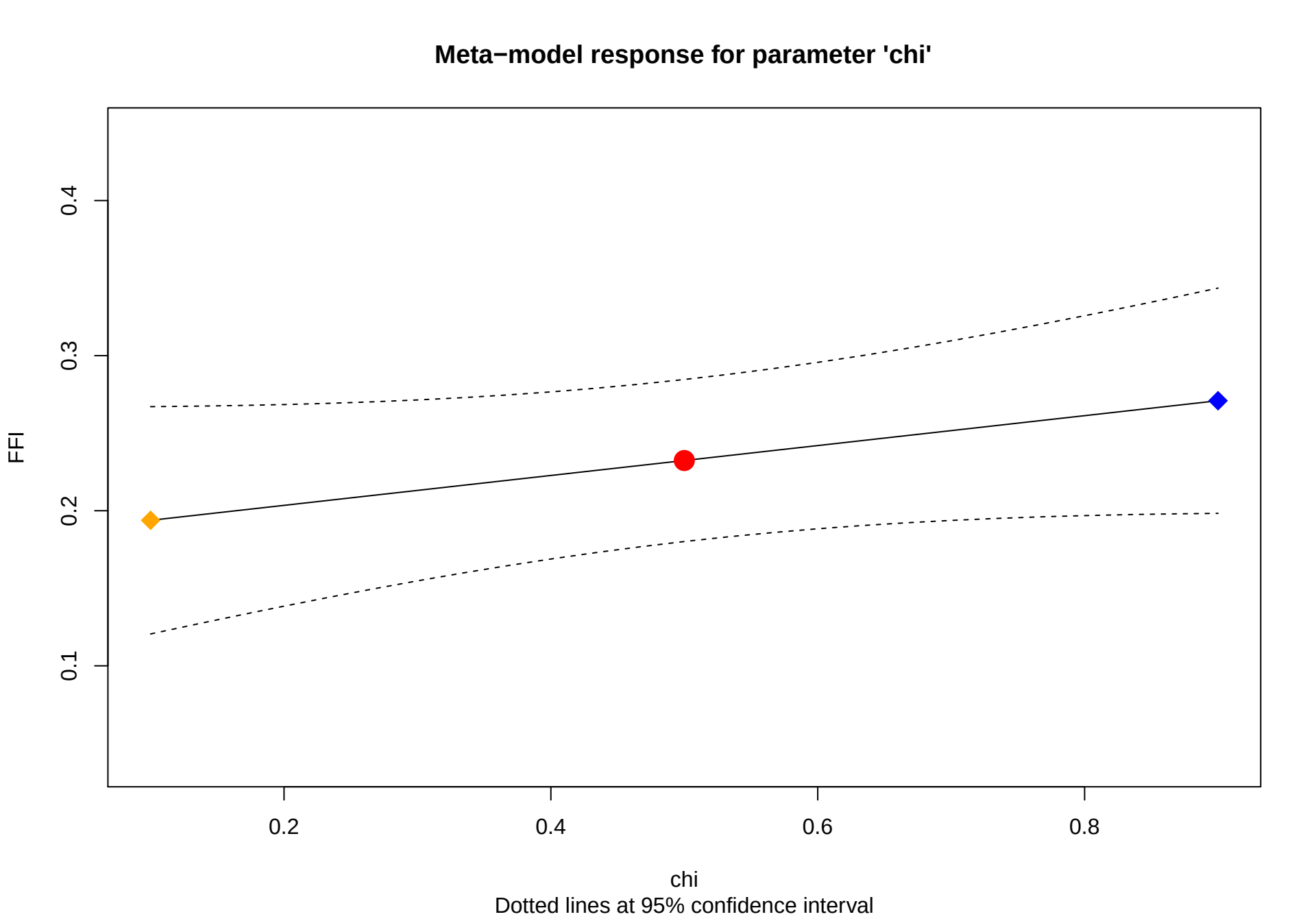
Sobol decomposition indexes (FFI)

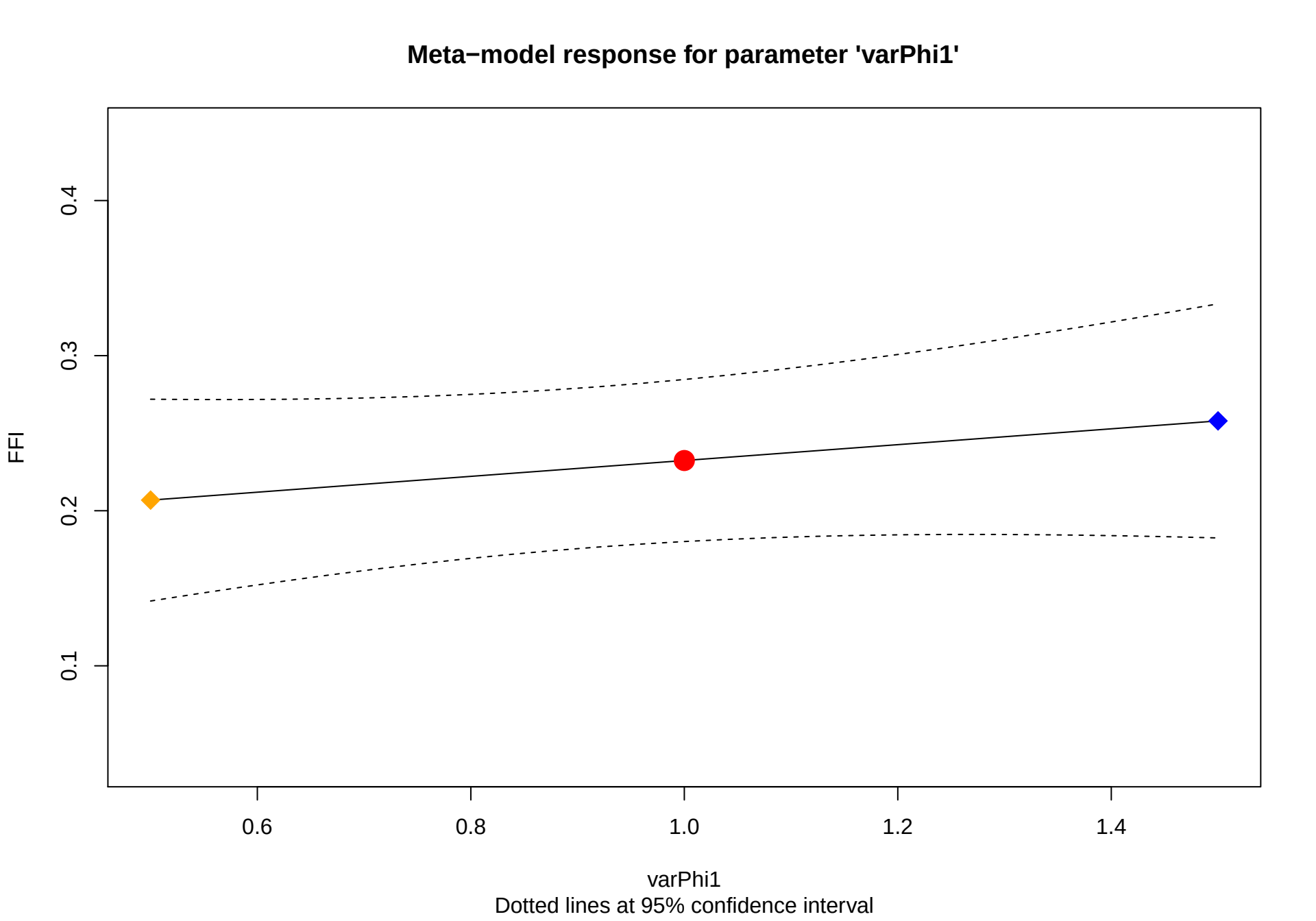
	Direct effects	Interactions
n	0.024	0.002
omega1	0.040	0.002
omega2	0.025	0.002
zeta1	0.007	0.002
zeta2	0.000	0.002
varPhi1	0.071	0.002
varPhi2	0.001	0.002
upsilon	0.014	0.002
chi	0.161	0.002
xi	0.008	0.002
gammau	0.653	0.002

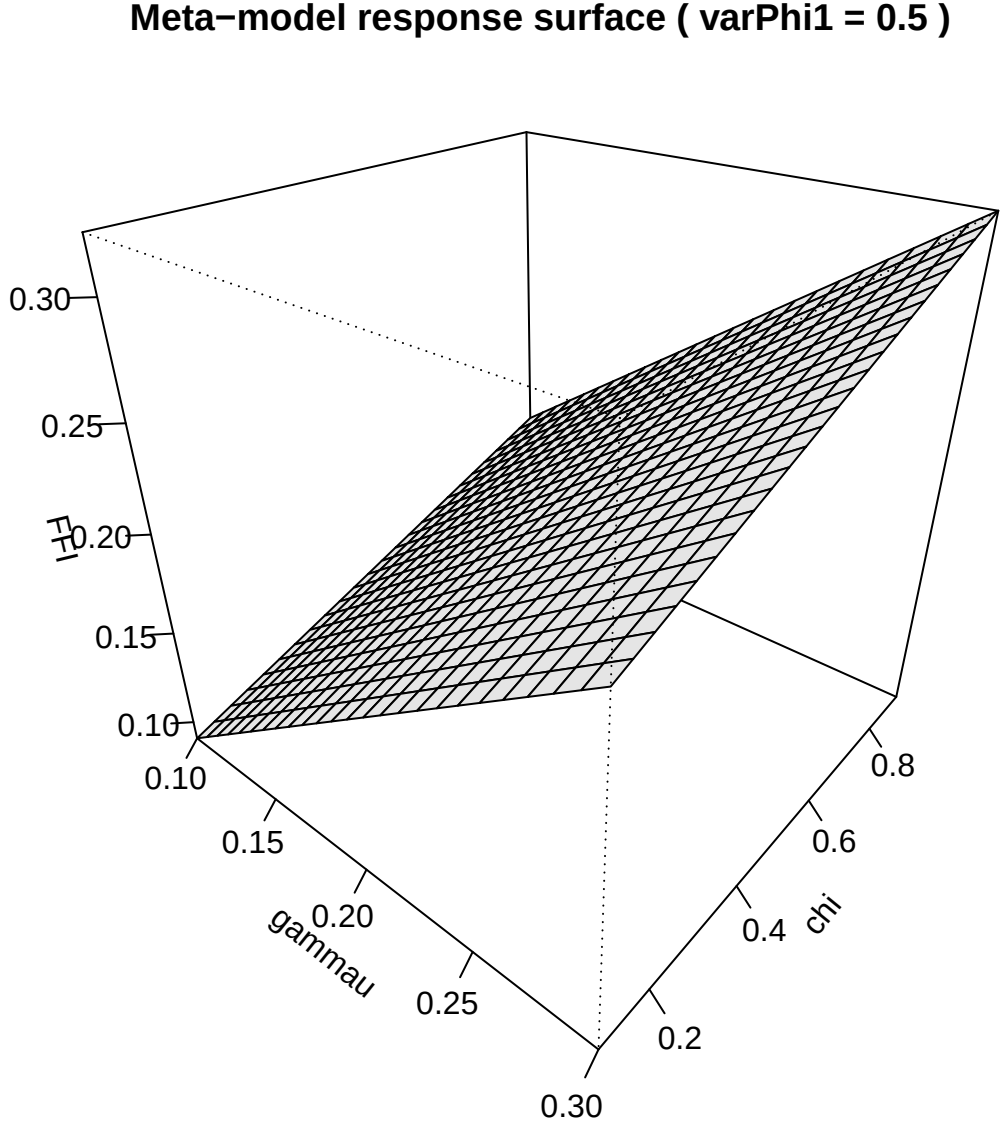
Samples = 1000 / time = [101,−1]

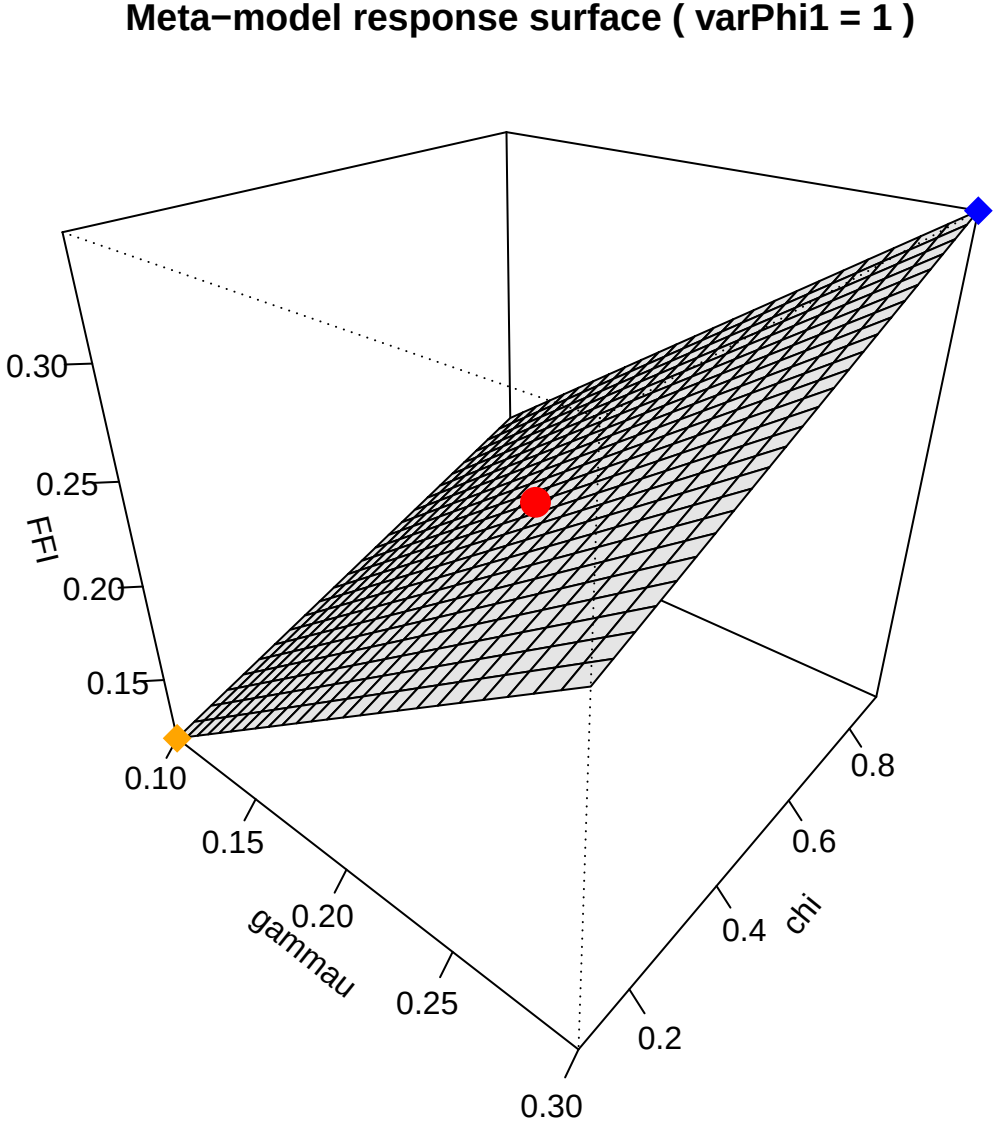

Sobol decomposition indexes (FFI)
interactions
main effects
Sobol Index
1.0
0.8
0.6
0.4
0.2
0.0
n
omega1
omega2
zeta1
zeta2
varPhi1
varPhi2
upsilon
chi
xi
gammau
Samples = 1000 / time = [101,−1]

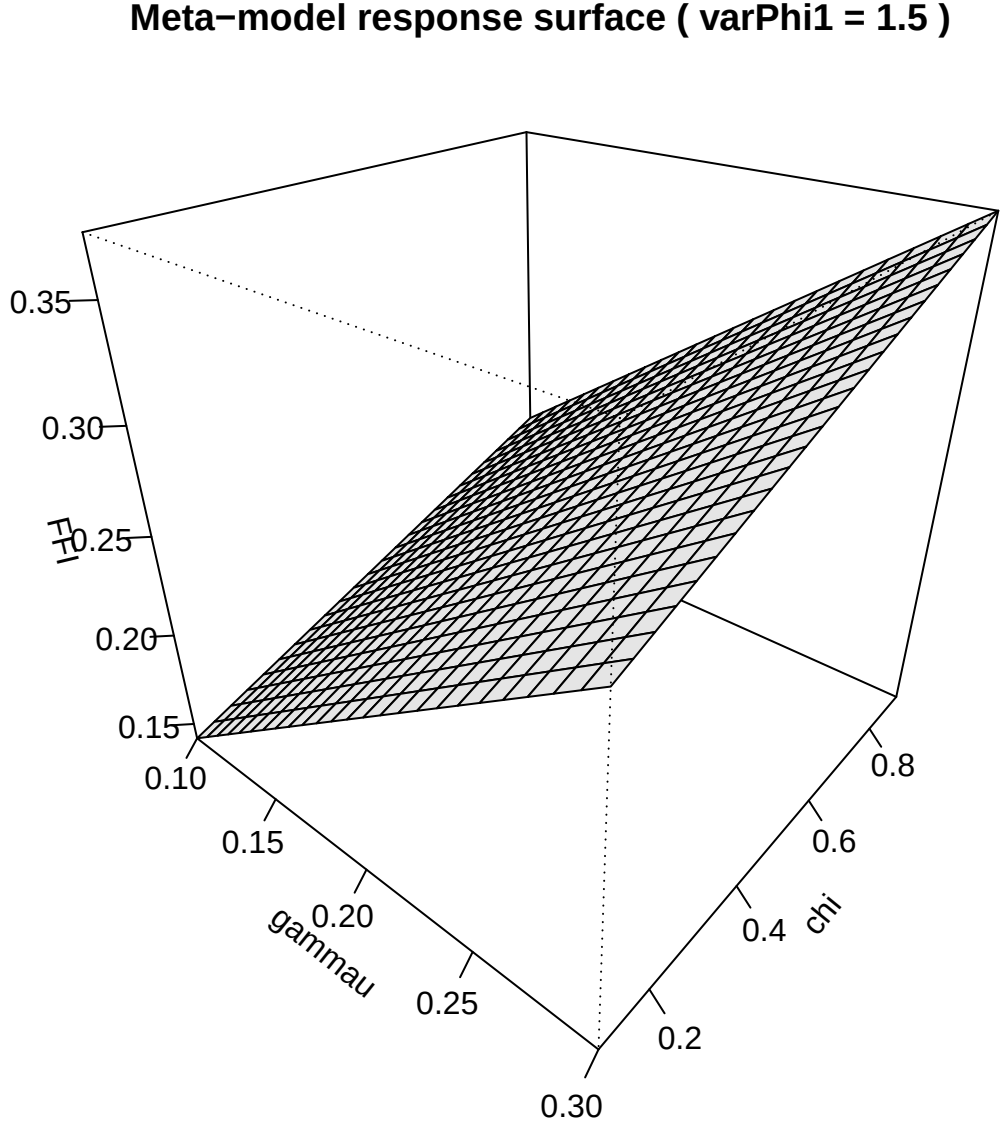

Meta−model response for parameter 'gammau'
FFI
0.1
0.2
0.3
0.4
0.10
0.15
0.20
0.25
0.30
gammau
Dotted lines at 95% confidence interval

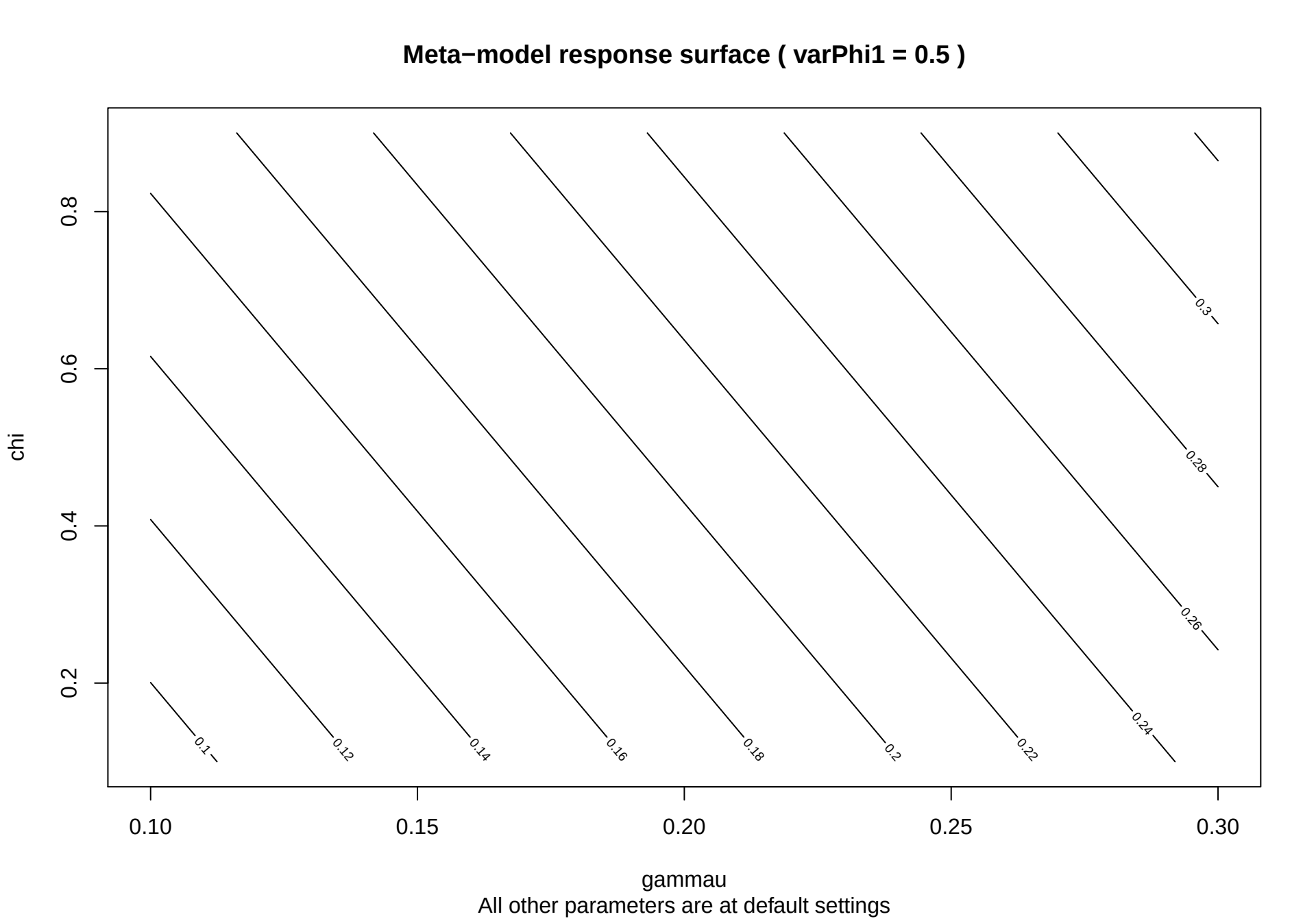

Meta−model response for parameter 'chi'
FFI
0.1
0.2
0.3
0.4
0.2
0.4
0.6
0.8
chi
Dotted lines at 95% confidence interval

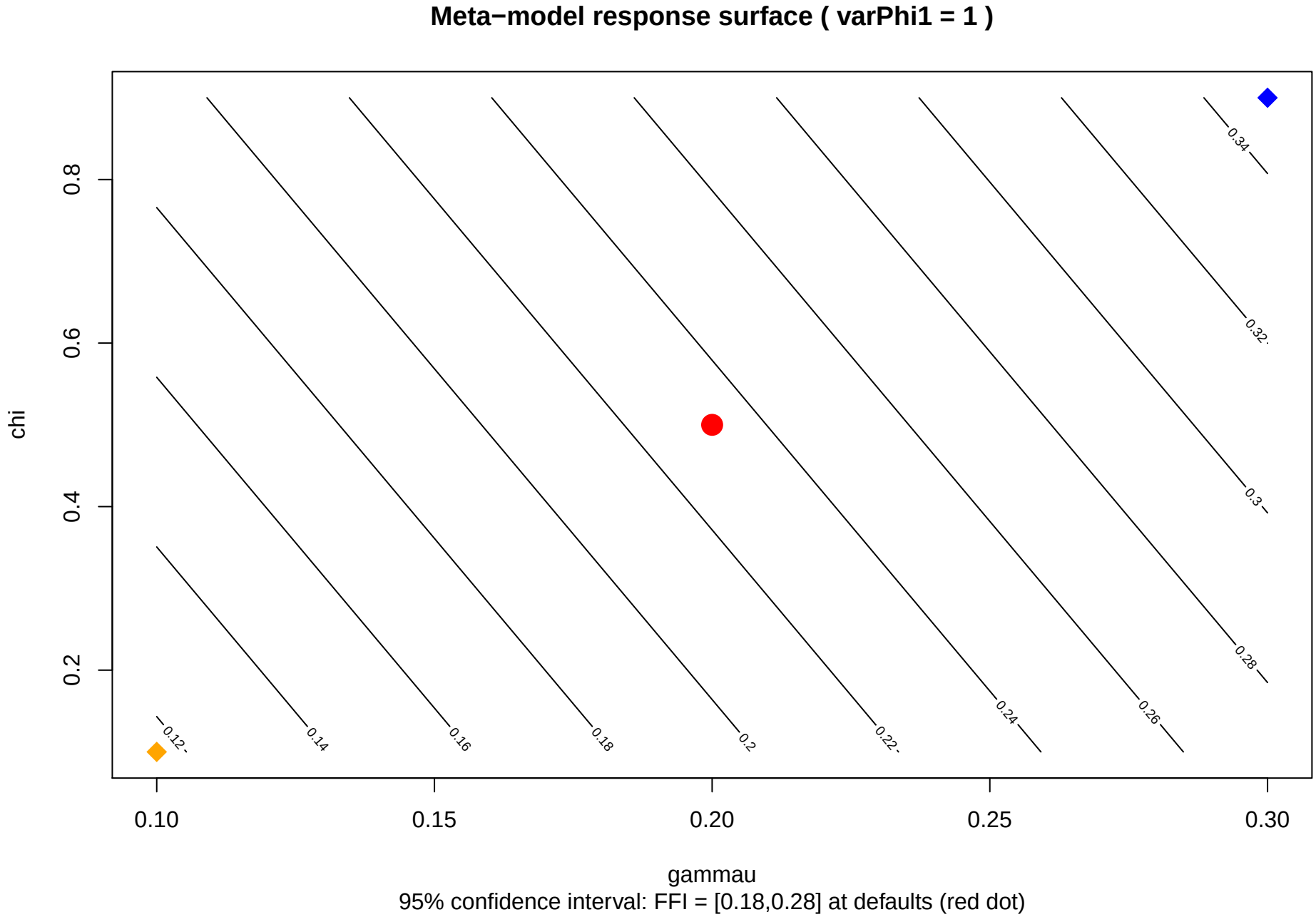

Meta−model response for parameter 'varPhi1'
FFI
0.1
0.2
0.3
0.4
0.6
0.8
1.0
1.2
1.4
varPhi1
Dotted lines at 95% confidence interval

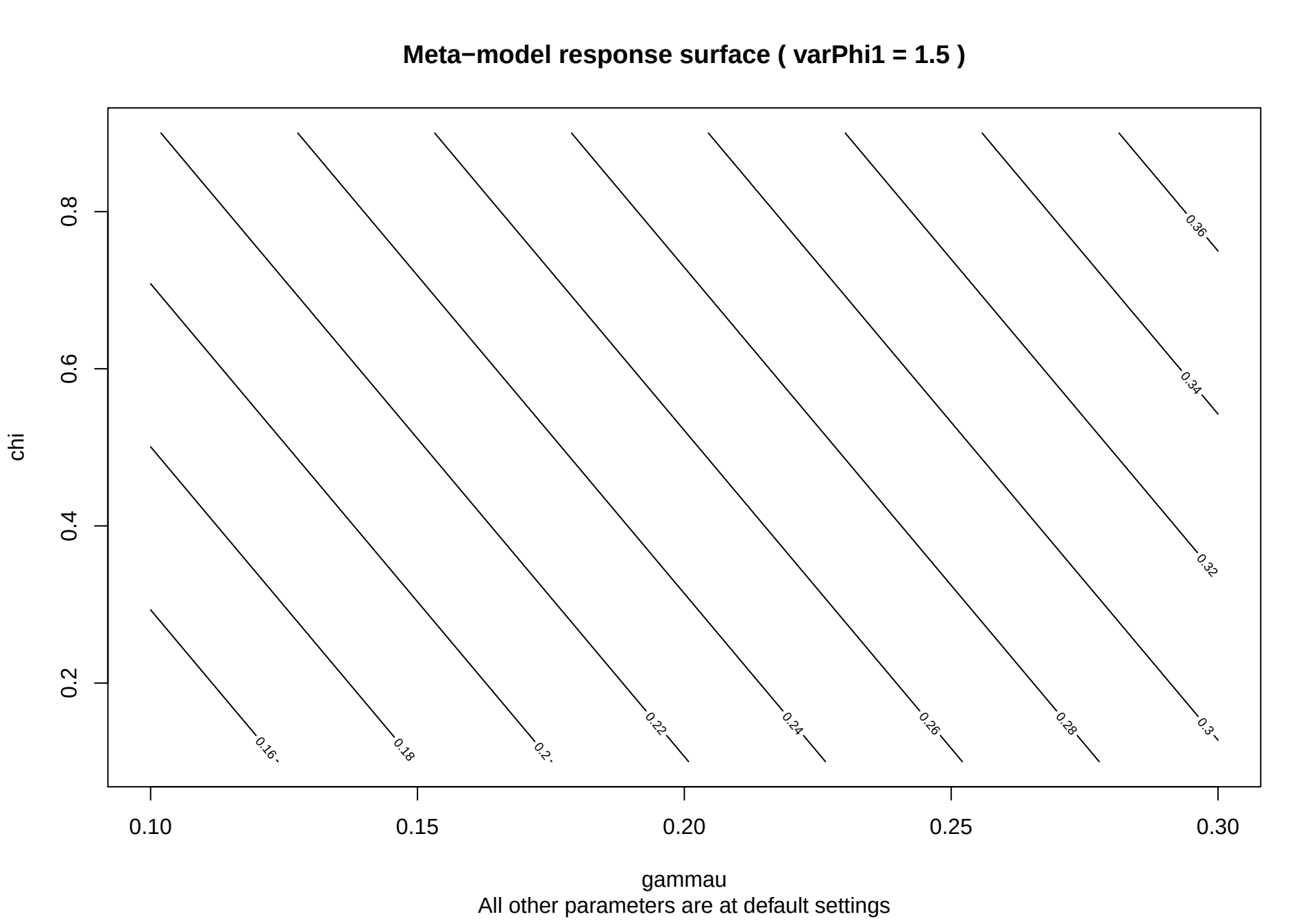

Meta−model response surface (varPhi1 = 0.5)
0.30
0.25
FFI
0.20
0.15
0.10
0.10
0.15
0.20
gammau
0.25
0.30
0.2
0.4
chi
0.6
0.8
All other parameters are at default settings


Meta−model response surface (varPhi1 = 1)
FFI
0.30
0.25
0.20
0.15
gammau
0.10
0.15
0.20
0.25
0.30
chi
0.2
0.4
0.6
0.8
95% confidence interval: FFI = [0.18,0.28] at defaults (red dot)


Meta−model response surface (varPhi1 = 1.5)
FFI
0.35
0.30
0.25
0.20
0.15
gammau
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
gammau
All other parameters are at default settings
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 (varPhi1 = 1)
chi
0.2
0.4
0.6
0.8
0.10
0.15
0.20
0.25
0.30
gammau
0.12
0.14
0.16
0.18
0.2
0.22
0.24
0.26
0.28
0.3
0.32
0.34
95% confidence interval: FFI = [0.18,0.28] at defaults (red dot)


Meta−model response surface (varPhi1 = 1.5)
chi
0.2
0.4
0.6
0.8
0.16
0.18
0.2
0.22
0.24
0.26
0.28
0.3
0.32
0.34
0.36
0.10
0.15
0.20
0.25
0.30
gammau
All other parameters are at default settings