Comparison of alternative kriging models

	Matern 5/2	Matern 3/2	Gaussian	exponent.	power exp.
Q2 constant trend	0.7896	0.7615	0.8503	0.4955	0.7697
Q2 1st order poly. trend	0.7636	0.6931	0.5582	0.5890	0.7891
RMSE constant trend	0.0303	0.0303	0.0303	0.0303	0.0303
RMSE 1st order poly. trend	0.0113	0.0113	0.0113	0.0113	0.0113
MAE constant trend	0.0249	0.0249	0.0249	0.0249	0.0249
MAE 1st order poly. trend	0.0088	0.0088	0.0088	0.0088	0.0088
RMA constant trend	2.9811	2.9811	2.9811	2.9811	2.9811
RMA 1st order poly. trend	1.2601	1.2601	1.2601	1.2601	1.2601

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

Kriging meta−model estimation (standardized)

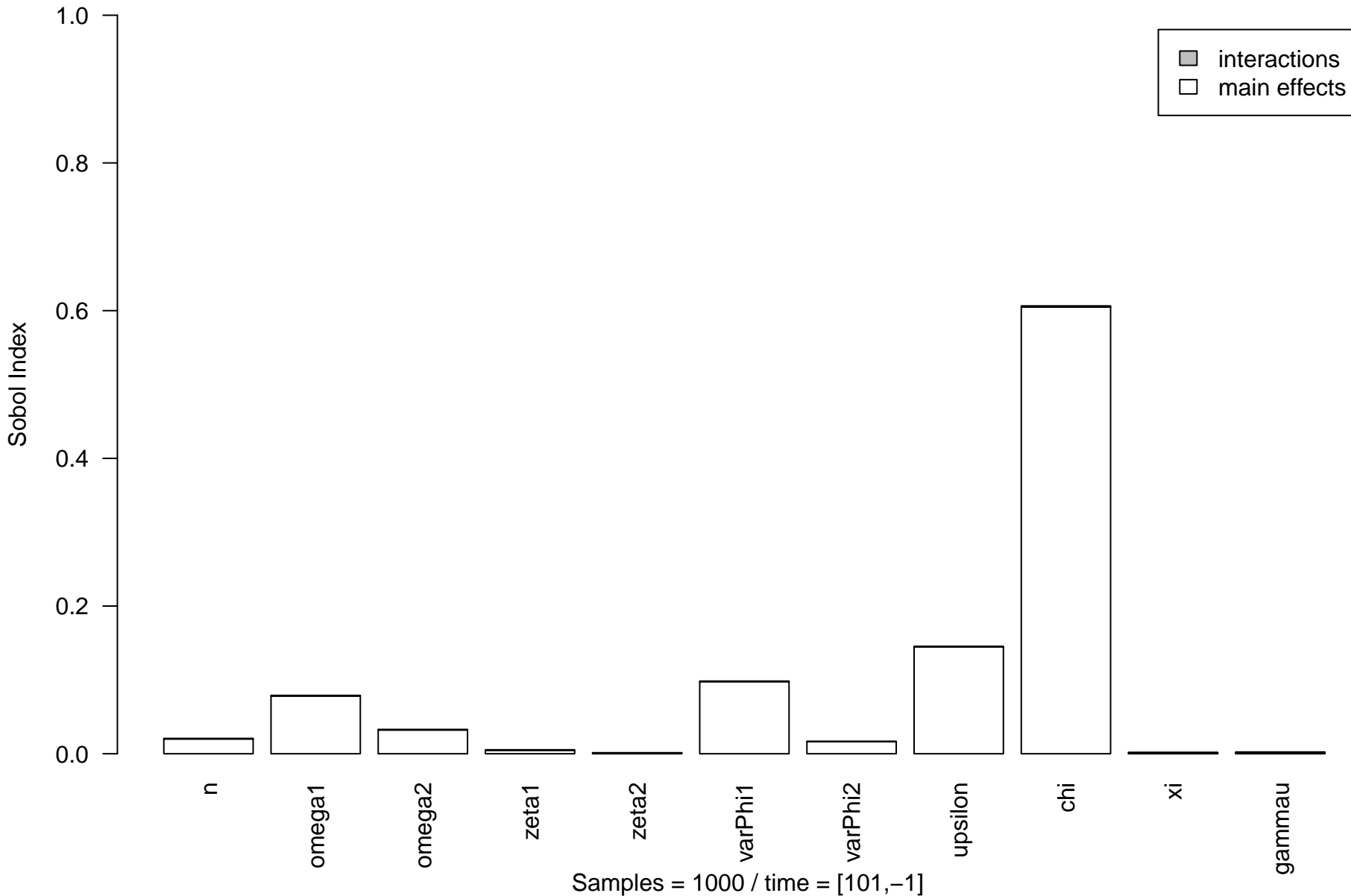|			
trend(intercept)	0.438	Trend specification	1st order poly.
trend(inclination)	0.006	Correlation function	power exp.
theta(n)	0.052	Cross−sample Q2	0.789
theta(omega1)	0.726	External RMSE	0.011
theta(omega2)	0.318	External MAE	0.009
theta(zeta1)	0.013	External RMA	1.260
theta(zeta2)	1.279	DoE samples	65
theta(varPhi1)	0.235	External samples	10
theta(varPhi2)	1.225		
theta(upsilon)	0.662		
theta(chi)	0.595		
theta(xi)	1.219		
theta(gammau)	1.739		

Variables rescaled to [0,1] / Average 95% CI = +/− 0.03
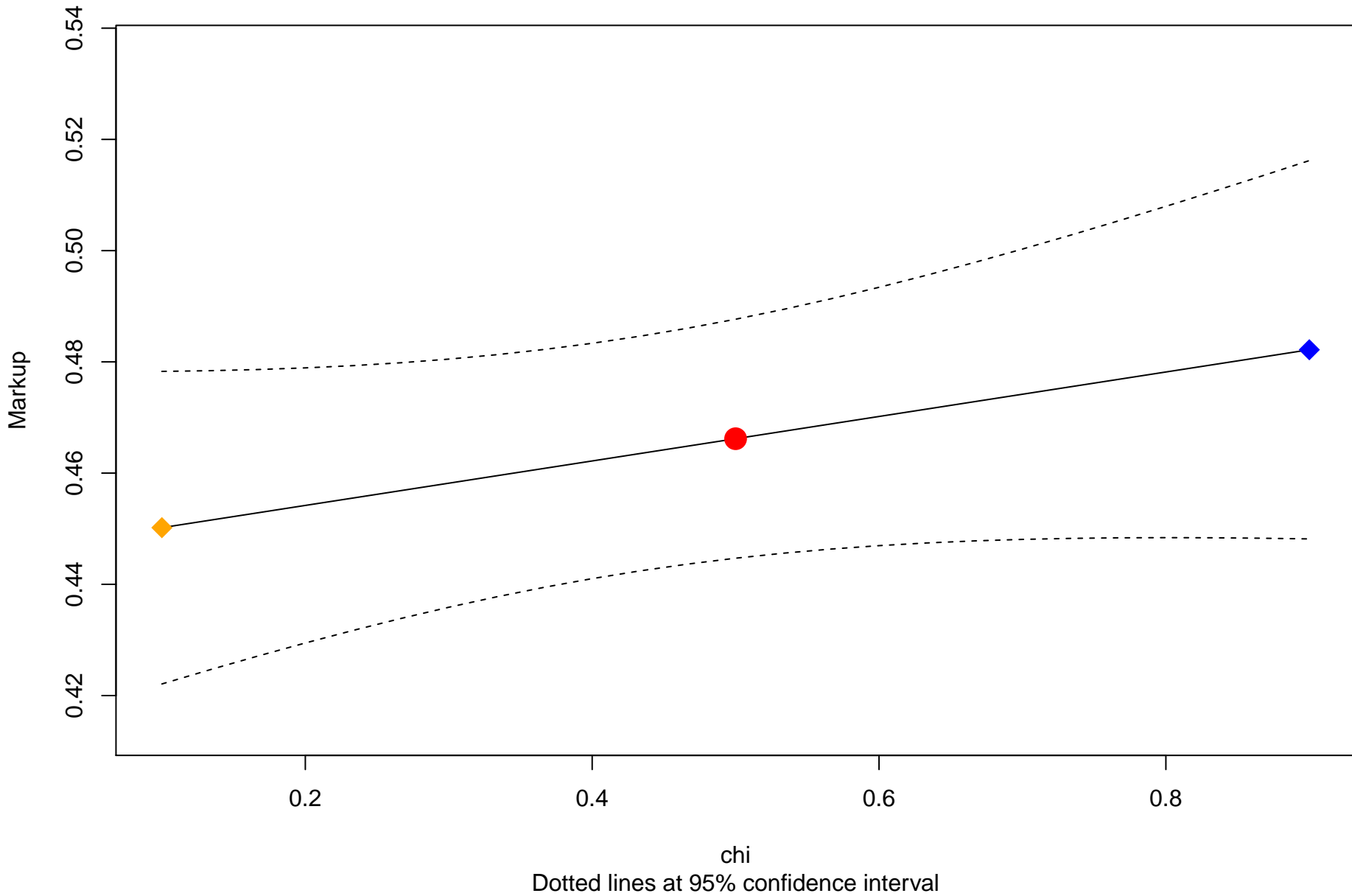Predicted output at defaults: Markup = 0.47, 95% CI = [0.44,0.49], time = [101,−1]

Sobol decomposition indexes (Markup)

	Direct effects	Interactions
n	0.020	0.001
omega1	0.078	0.001
omega2	0.032	0.001
zeta1	0.005	0.001
zeta2	0.001	0.001
varPhi1	0.098	0.001
varPhi2	0.016	0.001
upsilon	0.145	0.001
chi	0.605	0.002
xi	0.000	0.002
gammau	0.001	0.002

Samples = 1000 / time = [101,−1]

Sobol decomposition indexes (Markup)

Sobol Index

interactions
main effects

n   omega1   omega2   zeta1   zeta2   varPhi1   varPhi2   upsilon   chi   xi   gammau

Samples = 1000 / time = [101,−1]

Meta−model response for parameter 'chi'

chi

Dotted lines at 95% confidence interval

Meta−model response for parameter 'upsilon'

Markup

upsilon
Dotted lines at 95% confidence interval
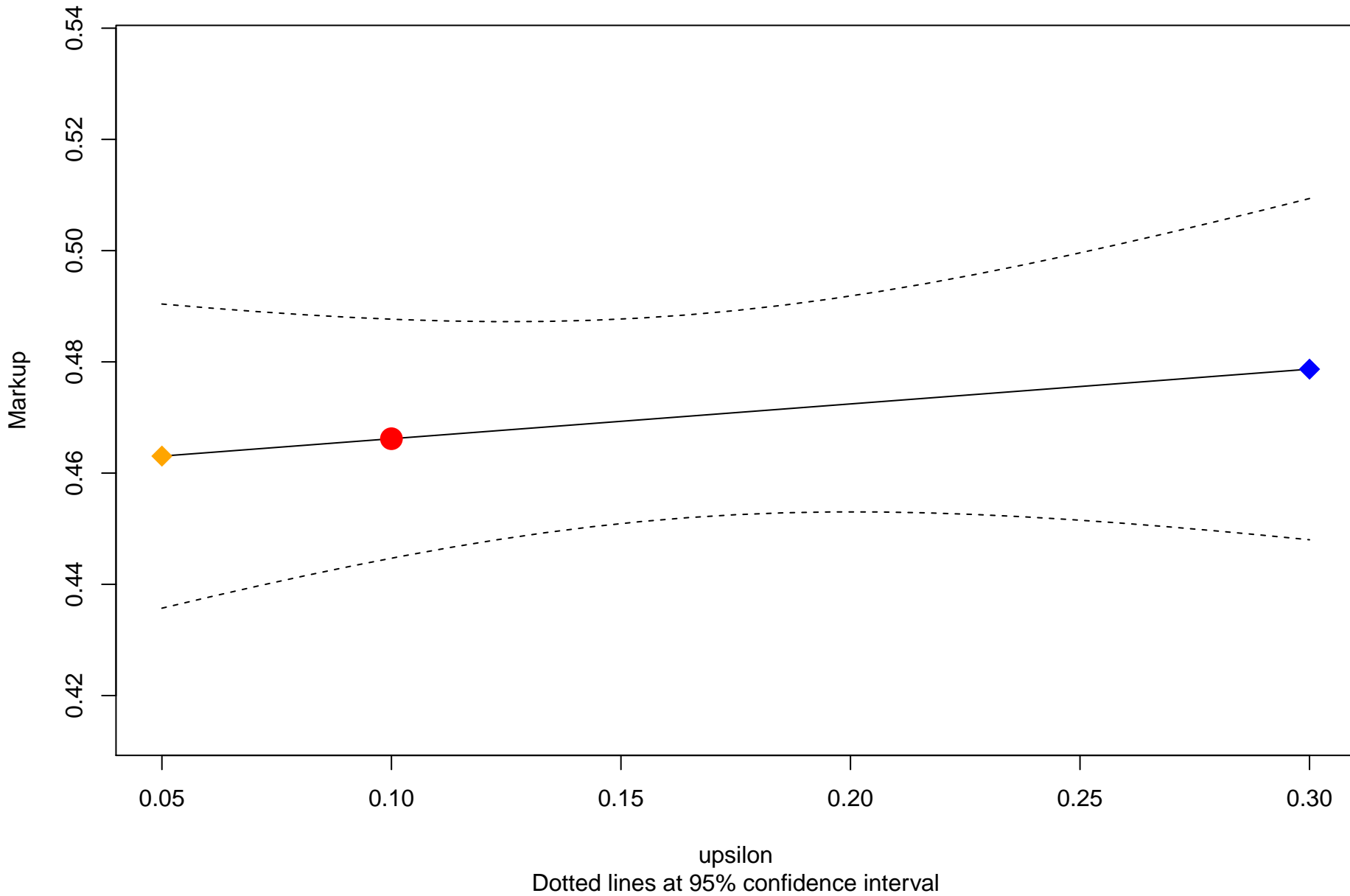
Meta−model response for parameter 'varPhi1'

Markup

varPhi1
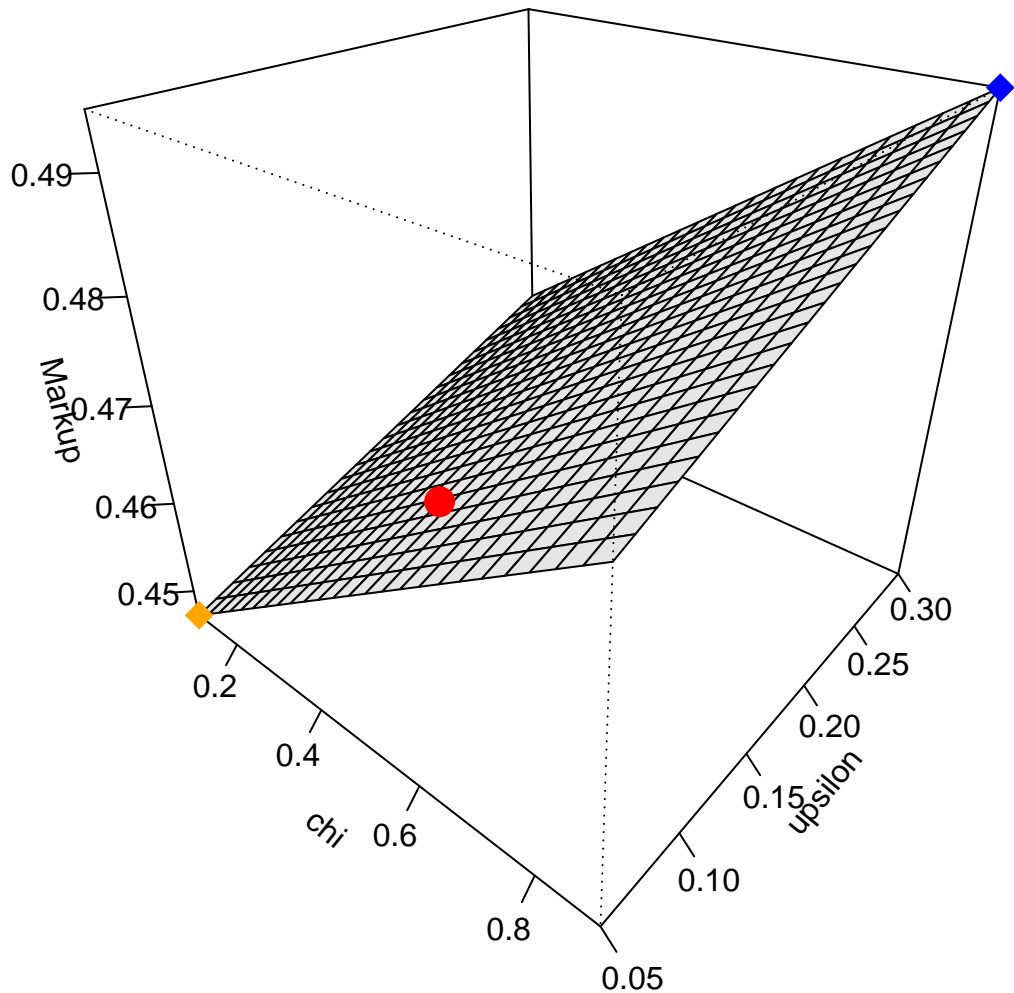
Dotted lines at 95% confidence interval
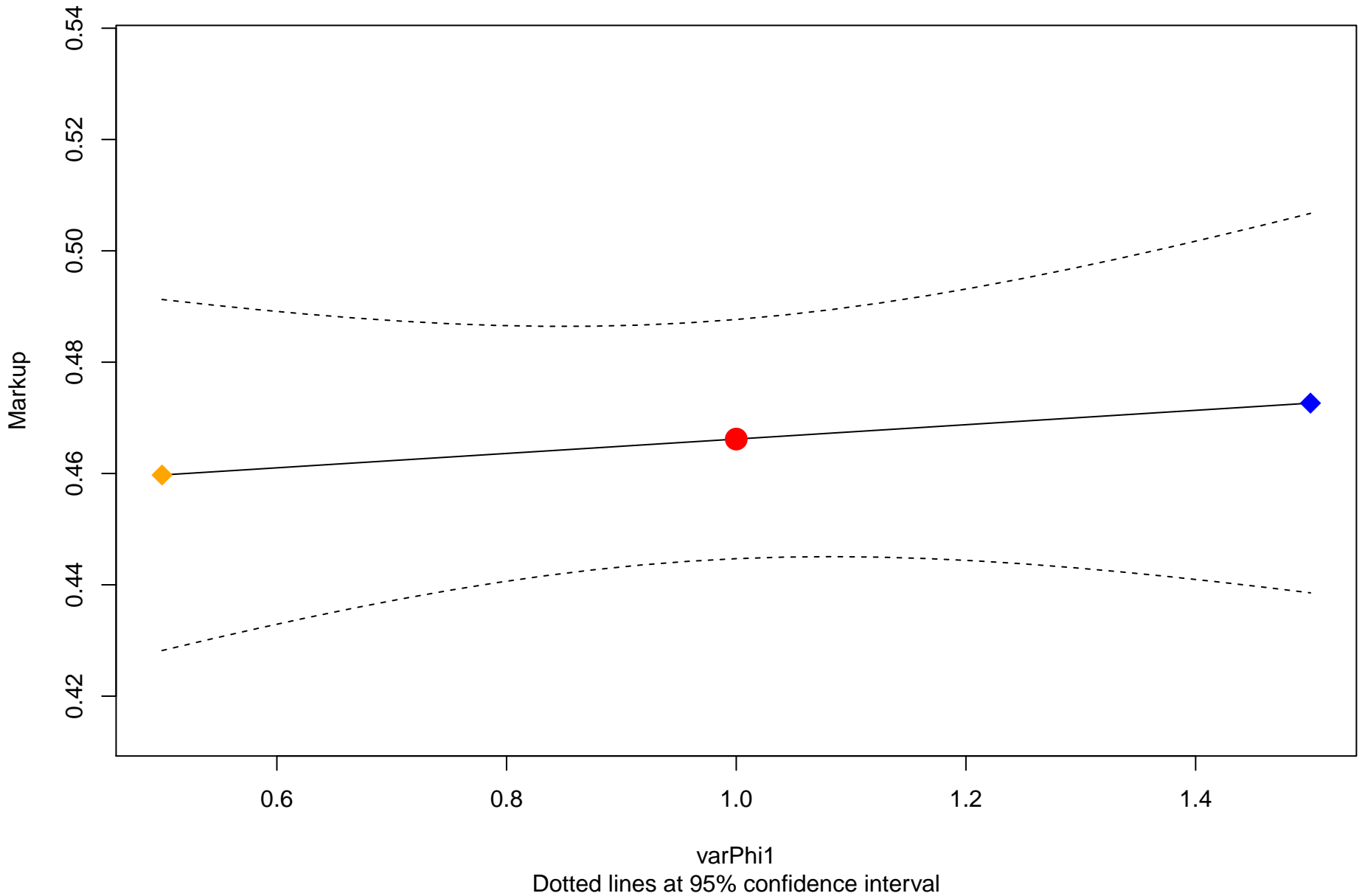
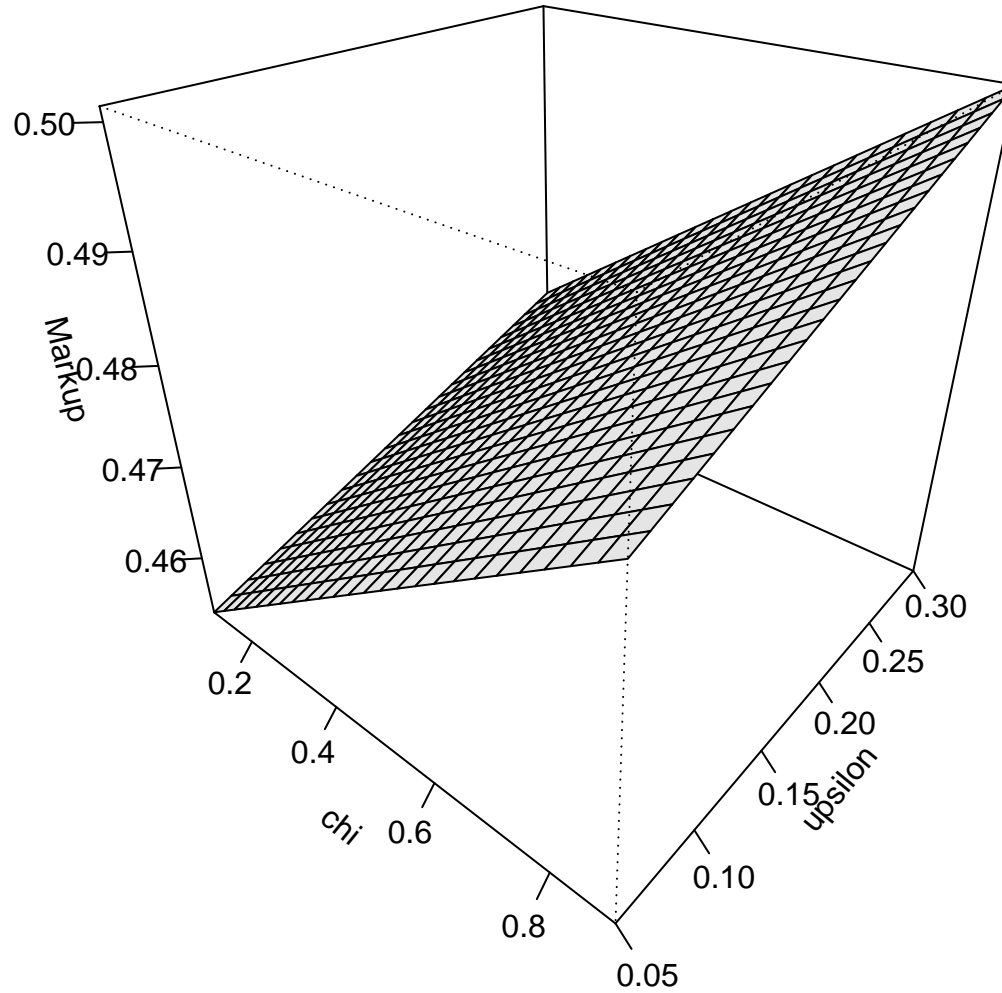**Meta−model response surface (varPhi1 = 0.5)**
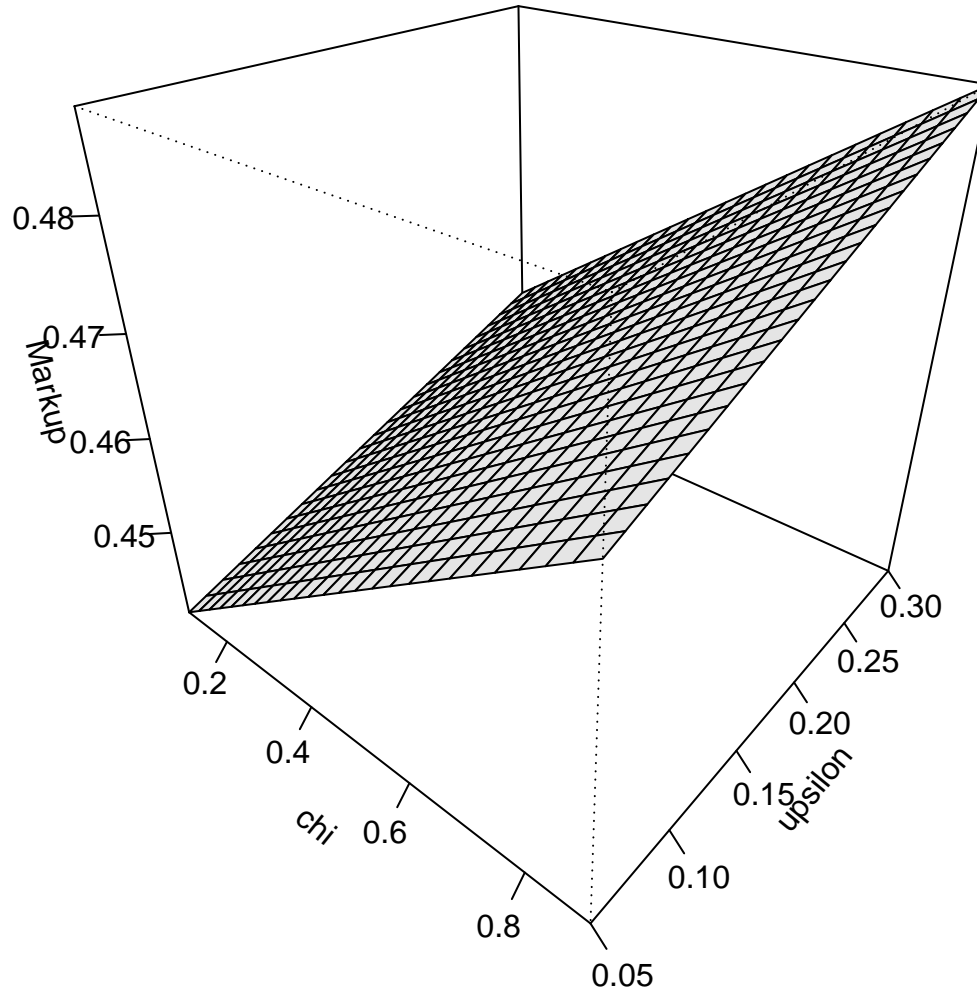
All other parameters are at default settings

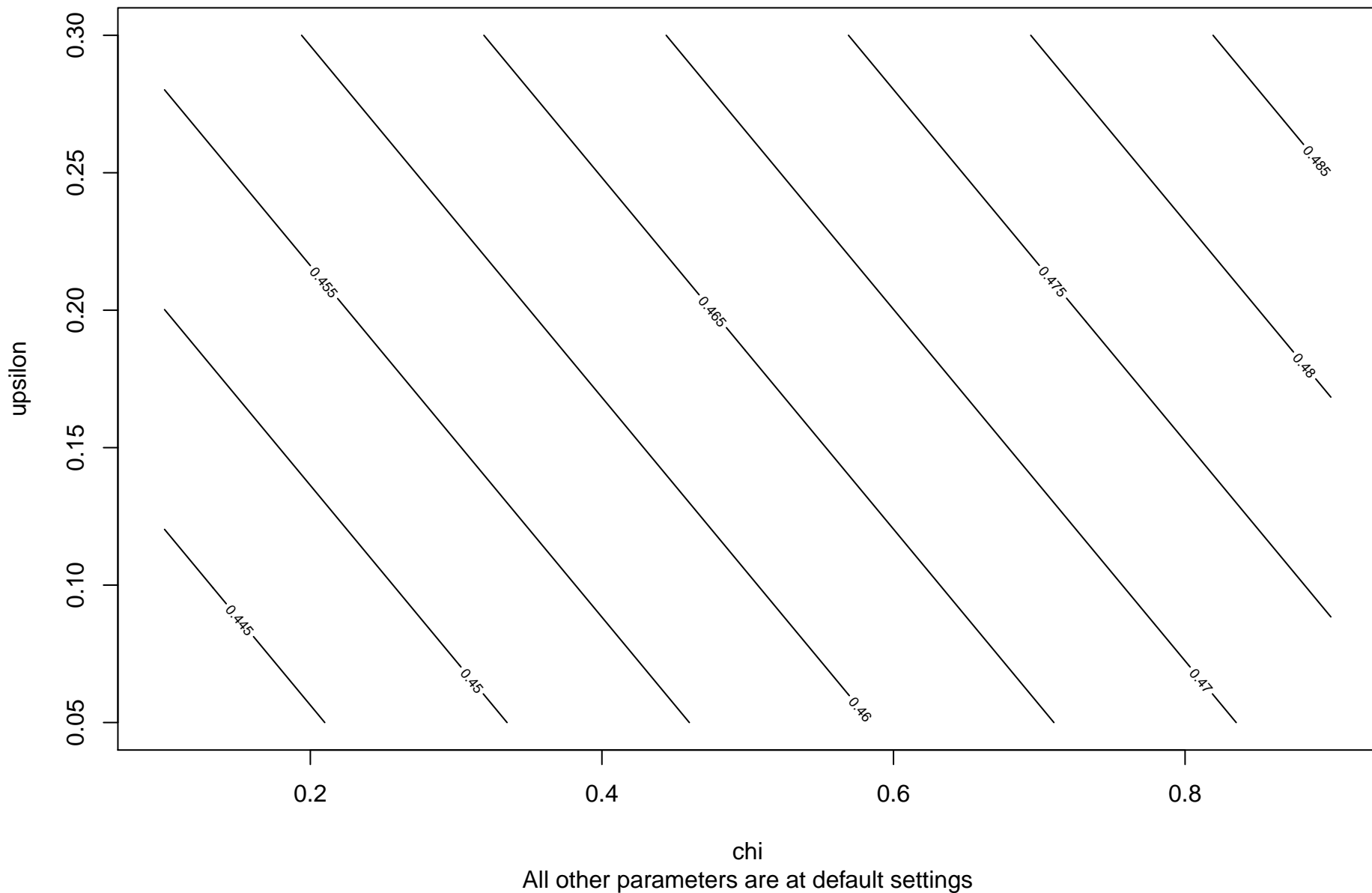# Meta−model response surface (varPhi1 = 1)

95% confidence interval: Markup = [0.44,0.49] at defaults (red dot)

Meta−model response surface (varPhi1 = 1.5)

All other parameters are at default settings

Meta−model response surface (varPhi1 = 0.5)

upsilon

0.485

0.475

0.465

0.455

0.445

0.48

0.47

0.46

0.45

chi

All other parameters are at default settings

Meta−model response surface (varPhi1 = 1)

chi

95% confidence interval: Markup = [0.44,0.49] at defaults (red dot)
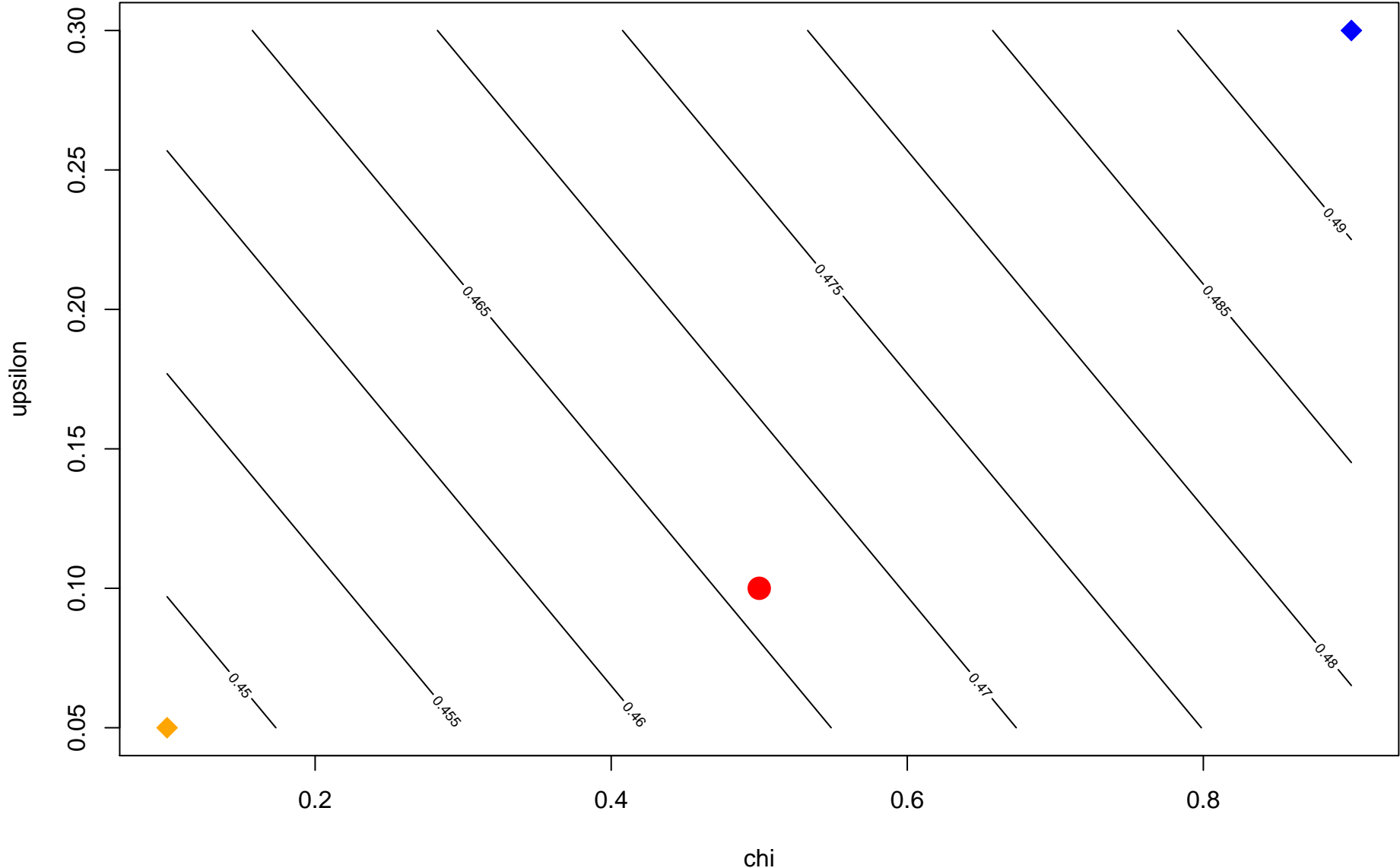
Meta−model response surface (varPhi1 = 1.5)

upsilon

chi
All other parameters are at default settings