Multivariate Normal Distribution

$\mu_Y=0$
$\sigma_Y=2.5$

$X=3.5$

$\mu_{Y|X}=2.8$
$\sigma_{Y|X}=1.5$

Prior Distribution

Length scale

$\mu+2\sigma_f$
$\mu=0$
$\mu-2\sigma_f$

low

high

95% confidence interval — Mean ● Observations

Posterior Distribution

Noise variance

$\sigma_n^2=0$

$\sigma_n^2>0$