

AMS 268 - Homework #3

Raquel Barata

3/12/2018

Data

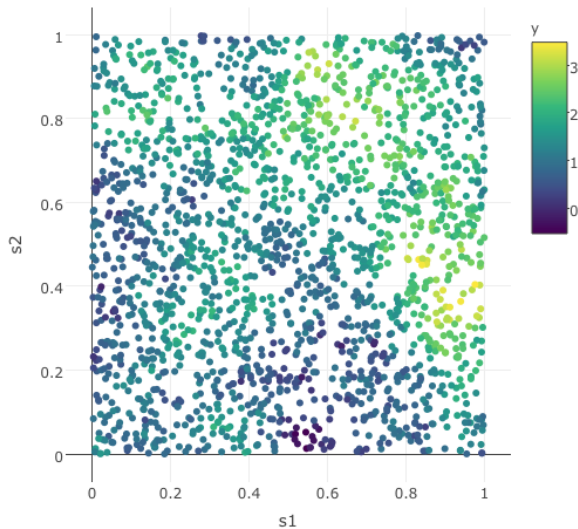


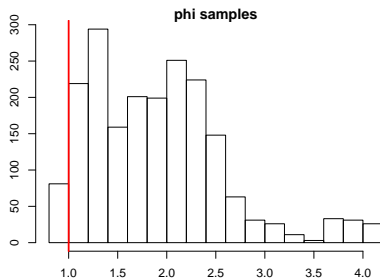
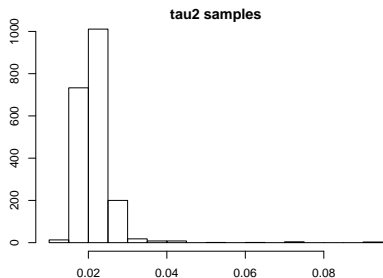
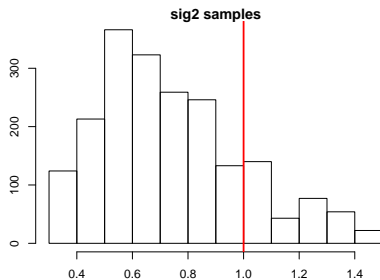
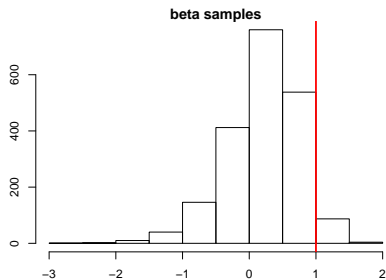
Figure 1:

Priors

- ▶ flat prior on beta
- ▶ uniform(0.5, 4.5) prior for ϕ
- ▶ inverse gamma priors on both τ^2 and σ^2

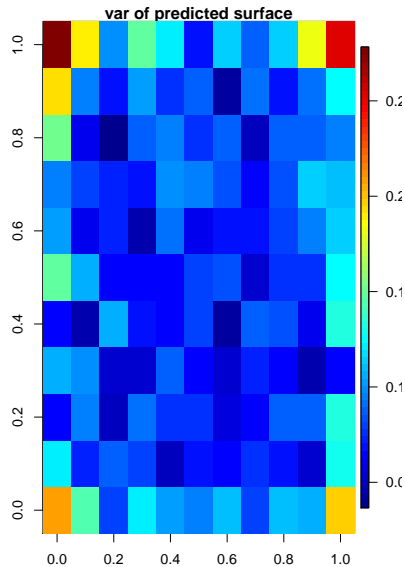
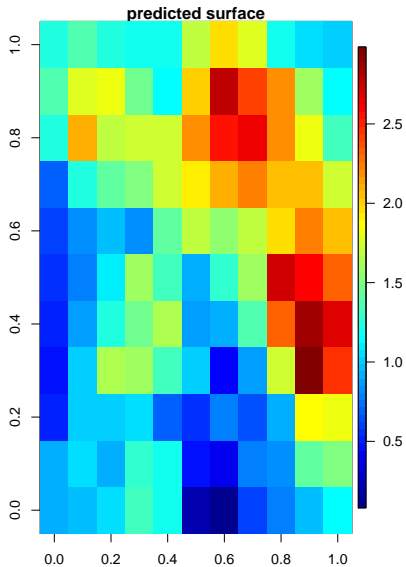
Modified Predictive Process

- posterior samples, true values marked in red

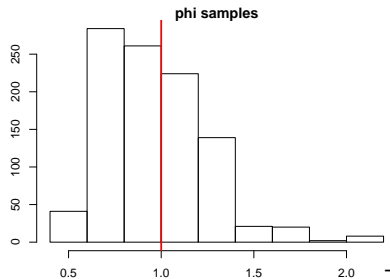
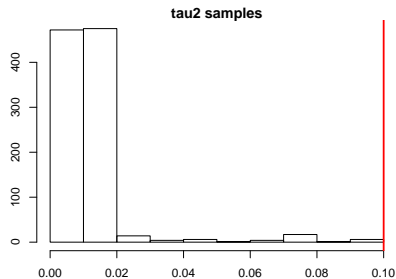
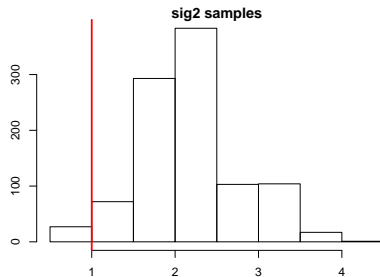
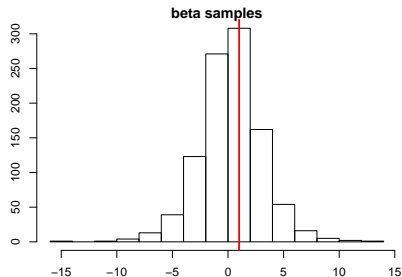


Modified Predictive Process

- in-sample $MSPE = -4.14 \times 10^{-4}$

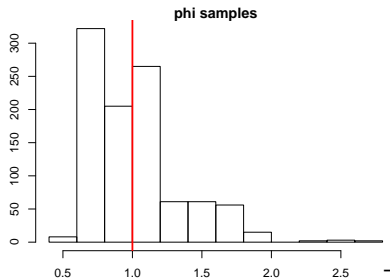
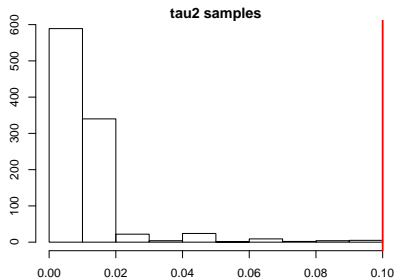
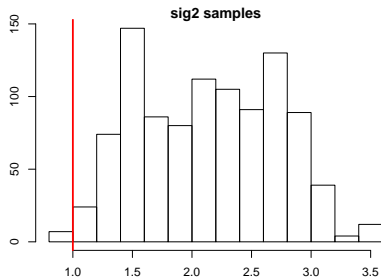
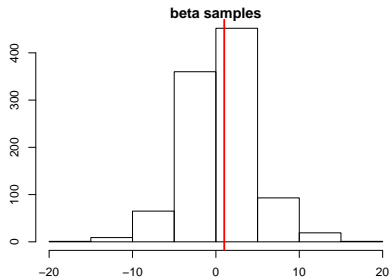


Tapered GP - $\nu = \sqrt{2}$



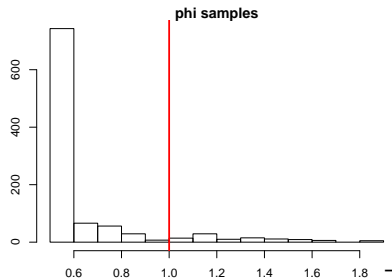
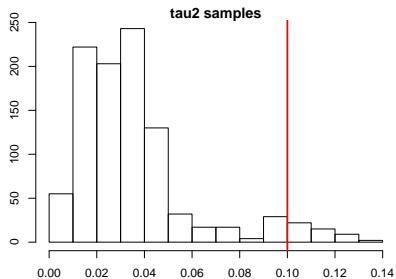
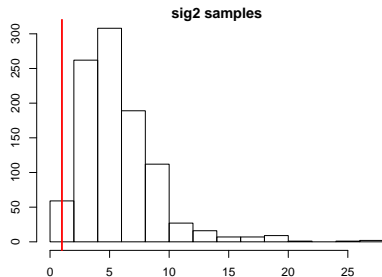
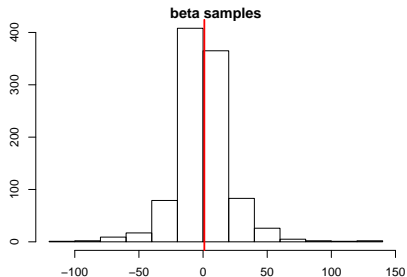
in-sample $MSPE = 1.172797$

Tapered GP - $\nu = 1$



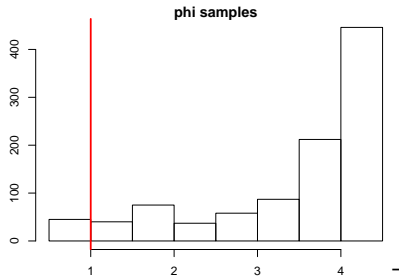
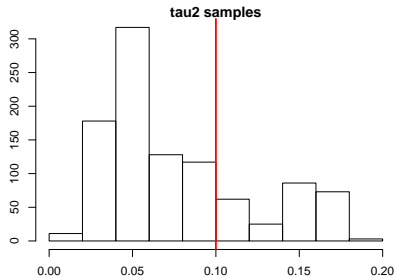
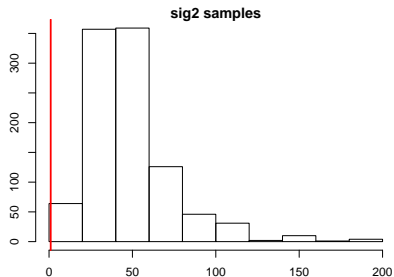
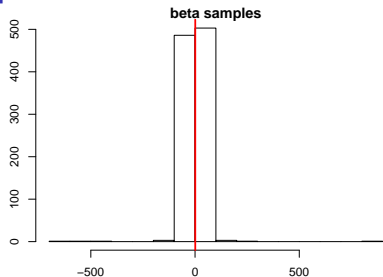
in-sample $MSPE = 0.901571$

Tapered GP - $\nu = 0.2$



in-sample $MSPE = 0.376271$

Tapered GP - $\nu = 0.05$



in-sample

$MSPE = 2.351256$