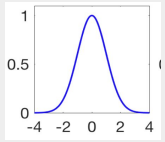
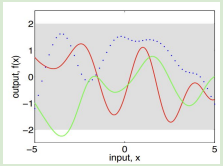
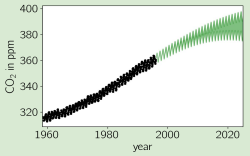
select k, guess HPs



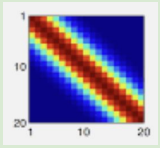
GP Prior



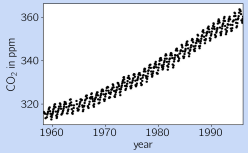
GP Posterior



Covariance matrix



get data



Likelihood

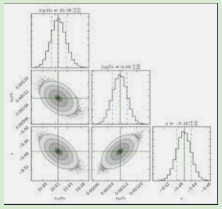
$$\log p(\mathbf{y}|X) = -\tfrac{1}{2}\mathbf{y}^\top (K+\sigma_n^2 I)^{-1}\mathbf{y} - \tfrac{1}{2}\log|K+\sigma_n^2 I| - \tfrac{n}{2}\log 2\pi.$$

Optimize

Posterior

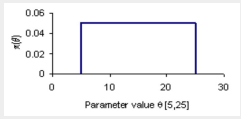
$$P(\theta|\mathcal{D}) = \frac{P(D|\theta)P(\theta)}{P(\mathcal{D})}$$

HP Posteriors

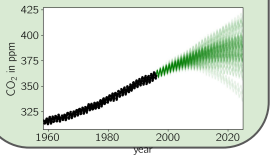


Sample

Select prior on HPs



Posterior samples



Legend

- Given
- User decision
- Compute