Priors on $u(x)$, $f(x)$

+

Noisy data on $f(x)$

Posterior on $u(x)$

A

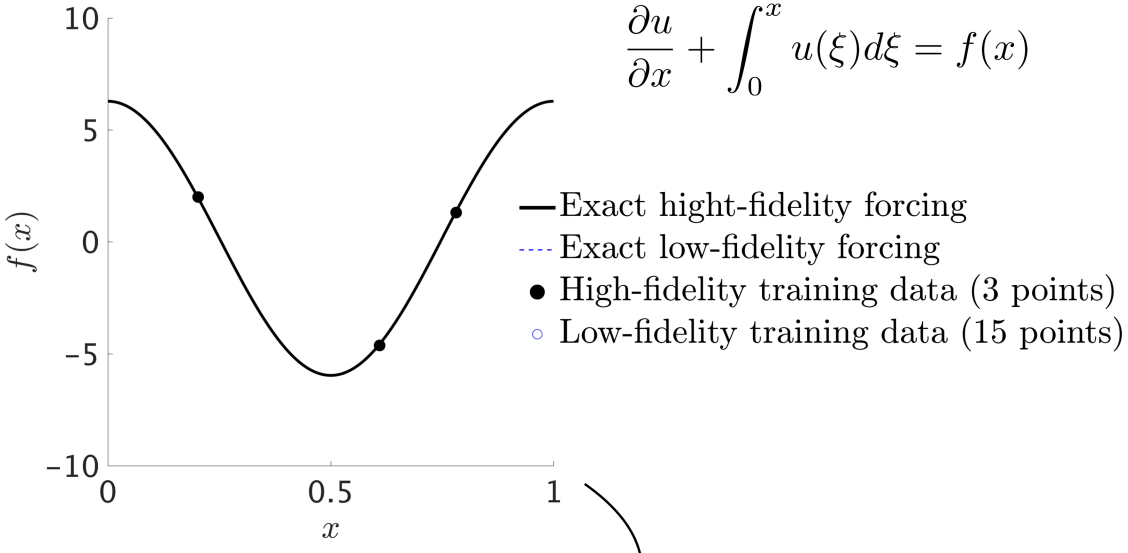
$$\left\{ \begin{array}{c} u(x) \sim \mathcal{GP}(0, g(x, x'; \theta)) \\ \mathcal{L}_x u(x) = f \sim \mathcal{GP}(0, k(x, x'; \theta)) \\ k(x, x'; \theta) = \mathcal{L}_x \mathcal{L}_{x'} g(x, x'; \theta) \end{array} \right\}$$

B

Single-fidelity regression

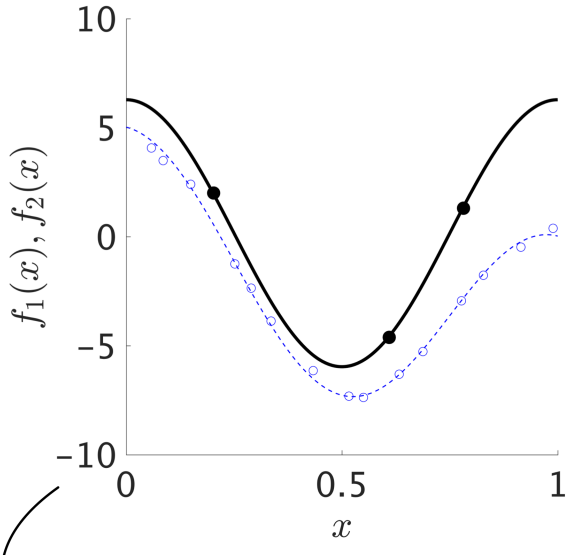
1D example:

$$\frac{\partial u}{\partial x} + \int_0^x u(\xi) d\xi = f(x)$$

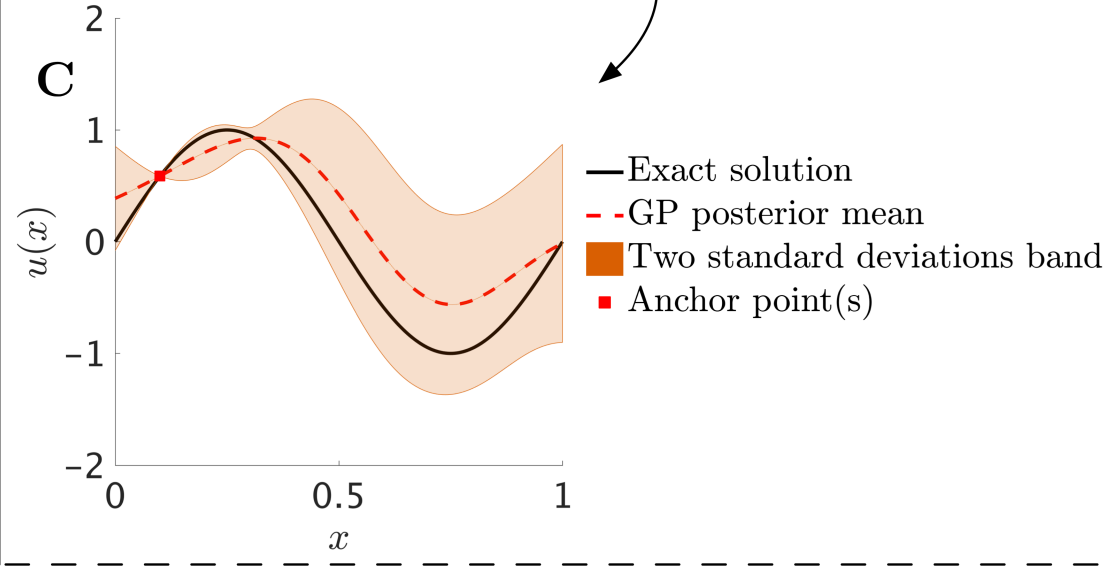


D

Multi-fidelity regression



C



E

