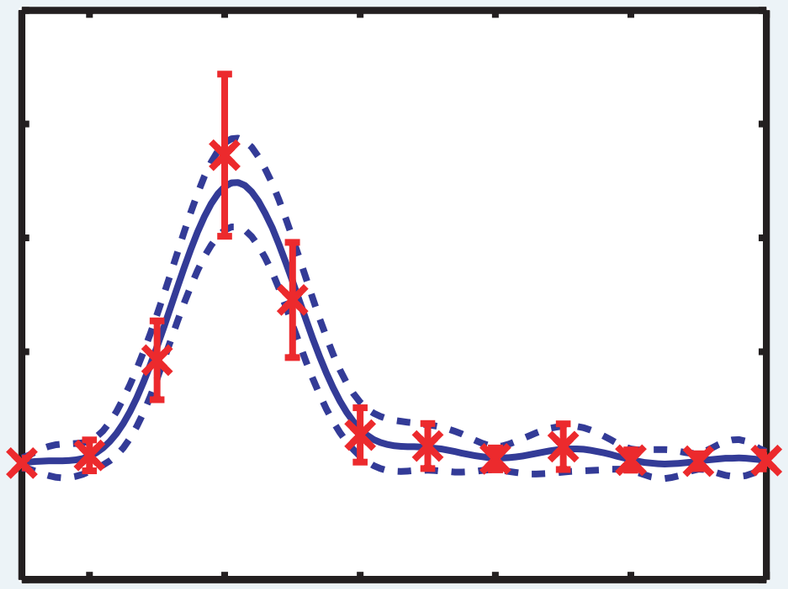
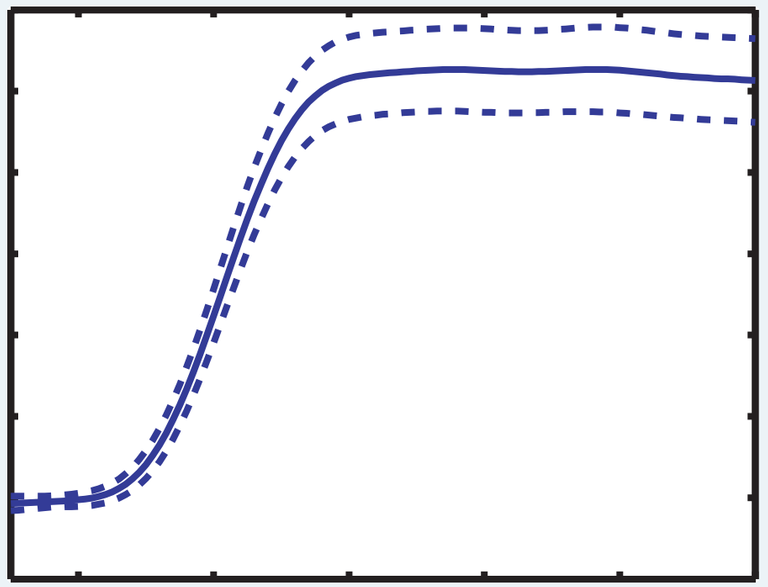
y(t) = TF mRNA profile



f(t) = protein activity profile



$$y(t) \sim \mathcal{GP}(m(t), k(t,t'))$$

$$\frac{\mathrm{d}f(t)}{\mathrm{d}t} = \sigma y(t) - \delta f(t)$$

$$\frac{\mathrm{d}x_j(t)}{\mathrm{d}t} = B_j + S_j f(t) - D_j x_j(t)$$

(Observations are denoted in red, inferred functions in blue.)

x(t) = target expression profile