

Process
change:

$$\underbrace{d \begin{bmatrix} \text{eta1} \\ \text{eta2} \end{bmatrix} (t)}_{d\boldsymbol{\eta}(t)} = \left(\underbrace{\begin{bmatrix} -1 & 0.5 \\ 0 & -1 \end{bmatrix}}_{\mathbf{A}} \underbrace{\begin{bmatrix} \text{eta1} \\ \text{eta2} \end{bmatrix} (t)}_{\boldsymbol{\eta}(t)} + \underbrace{\begin{bmatrix} 0 \\ 0 \end{bmatrix}}_{\mathbf{b}} \right) dt + \underbrace{\left\{ \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \right\}}_{\mathbf{G}} \underbrace{d \begin{bmatrix} W_1 \\ W_2 \end{bmatrix} (t)}_{d\mathbf{W}(t)}$$

Observations:

$$\underbrace{\begin{bmatrix} Y1 \\ Y2 \end{bmatrix} (t)}_{\mathbf{Y}(t)} = \underbrace{\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}}_{\mathbf{\Lambda}} \underbrace{\begin{bmatrix} \text{eta1} \\ \text{eta2} \end{bmatrix} (t)}_{\boldsymbol{\eta}(t)} + \underbrace{\begin{bmatrix} \text{mm_Y1} \\ \text{mm_Y2} \end{bmatrix}}_{\boldsymbol{\tau}} + \underbrace{\begin{bmatrix} 0.1 & 0 \\ 0 & 0.1 \end{bmatrix}}_{\boldsymbol{\Theta}} \underbrace{\begin{bmatrix} \epsilon_1 \\ \epsilon_2 \end{bmatrix} (t)}_{\boldsymbol{\epsilon}(t)}$$

Latent noise
per time step:

$$\Delta \left[W_{j \in [1,2]}\right] (t - u) \sim \text{N}(0, t - u)$$

Observation
noise:

$$\left[\epsilon_{j \in [1,2]}\right] (t) \sim \text{N}(0, 1)$$