$$p(z_t|z_{t-1}) = \Big(\mathcal{N}(z_t|z_{t-1},1) + \mathcal{N}(z_t|z_{t-1}+1,1) + \mathcal{N}(z_t|z_{t-1}+2,1)\Big)/3 \quad \text{// Transition model}$$

$$p(x_t|z_t) = \Big(\mathcal{N}(x_t|z_t,1) + \mathcal{N}(x_t|z_t-1,1) + \mathcal{N}(x_t|z_t+1,1)\Big)/3 \quad \text{// Emission model}$$

$$p(z_1) = Uniform(0,100) \quad \text{// Initial model}$$