

$$\mathcal{L} = \mathbb{E}_{Q(Z_{1:T} | \mathbf{y}, \mathbf{x})} \left[\log p(\mathbf{x} | \mathbf{y}, Z_{1:T}) - \sum_{t=2}^T \text{D}_{\text{KL}} (Q(Z_t | Z_{1:t-1}, \mathbf{y}, \mathbf{x}) || P(Z_t | Z_{1:t-1}, \mathbf{y})) \right]$$