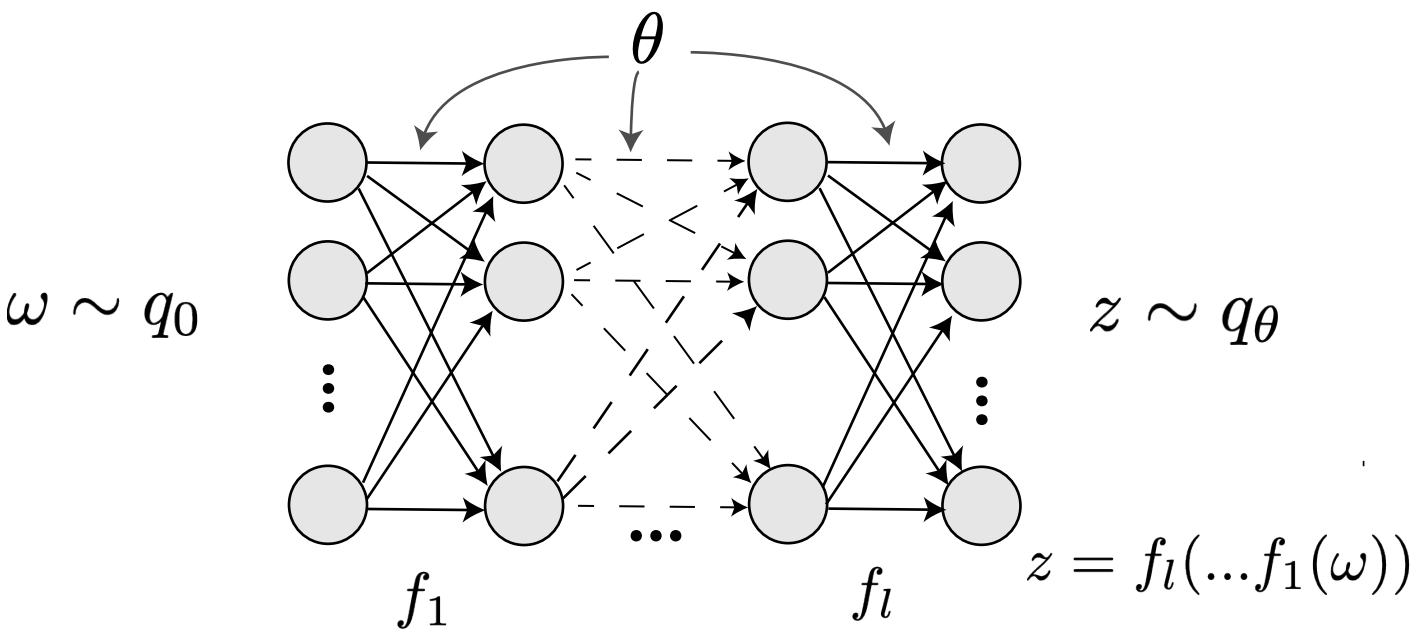


# A Deep probability distribution



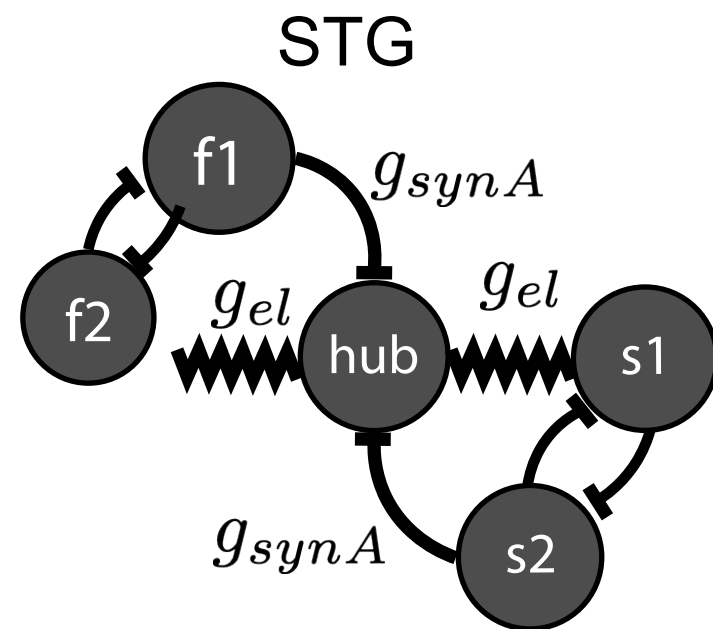
# B Emergent property inference (EPI) training objective

$$q_\theta^* = \arg \max_{q_\theta \in Q} H(q_\theta)$$

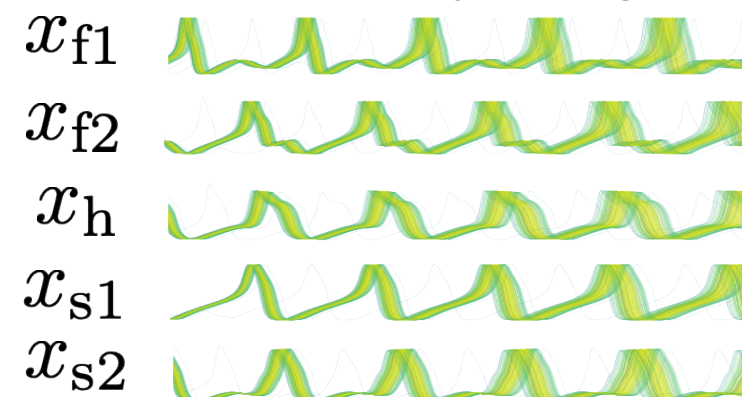
$$\text{s.t. } \underbrace{E_{z \sim q_\theta}}_{\text{model parameter samples}} \left[ \underbrace{E_{x \sim p(x|z)}}_{\text{model simulations}} \left[ \underbrace{T(x)}_{\text{emergent property statistics}} \right] \right] = \underbrace{\mu}_{\text{emergent property constraints}}$$

# C

biological model



network syncing



emergent property

