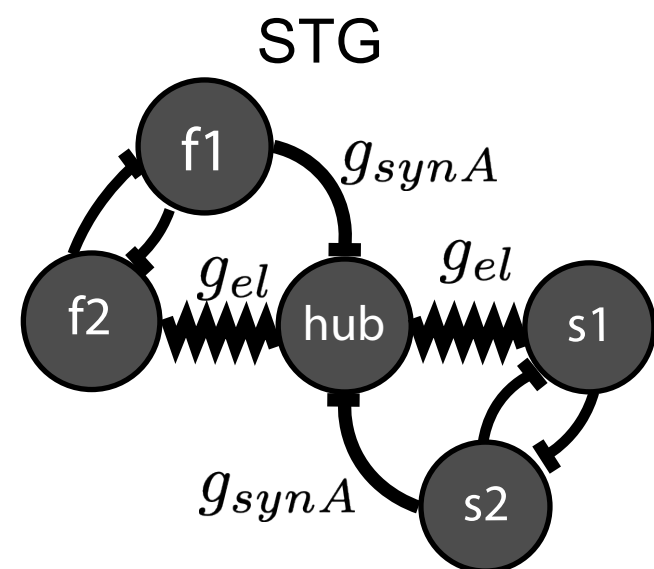
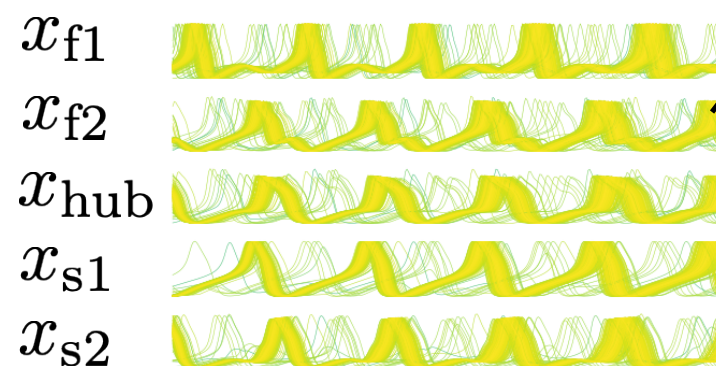


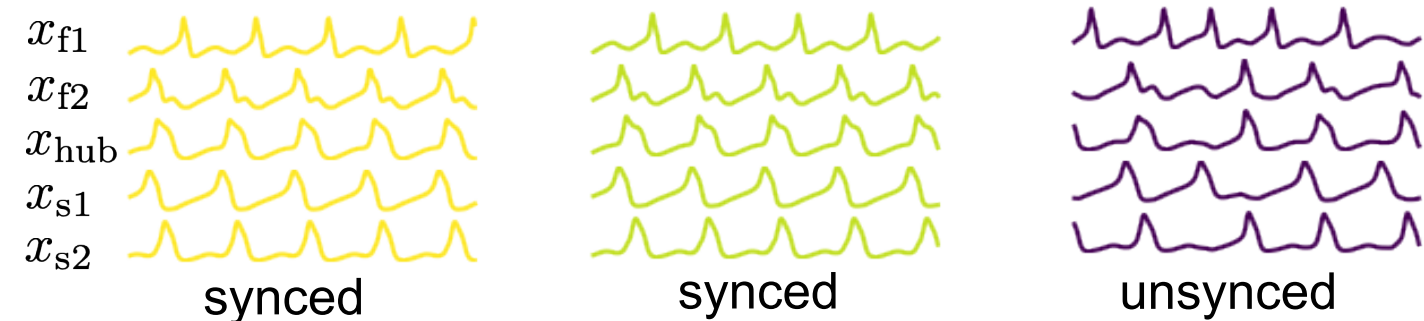
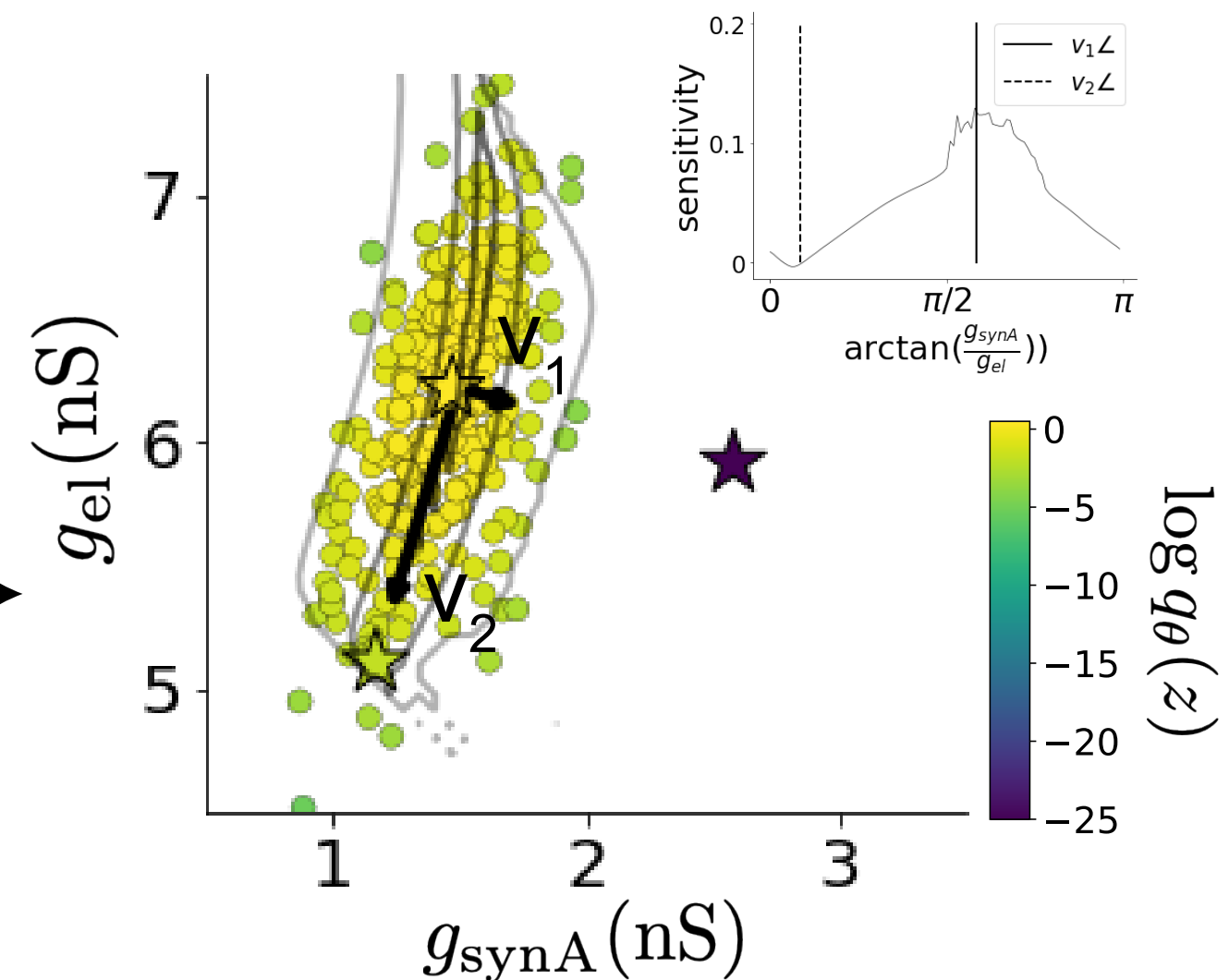
A

biological  
model

network syncing

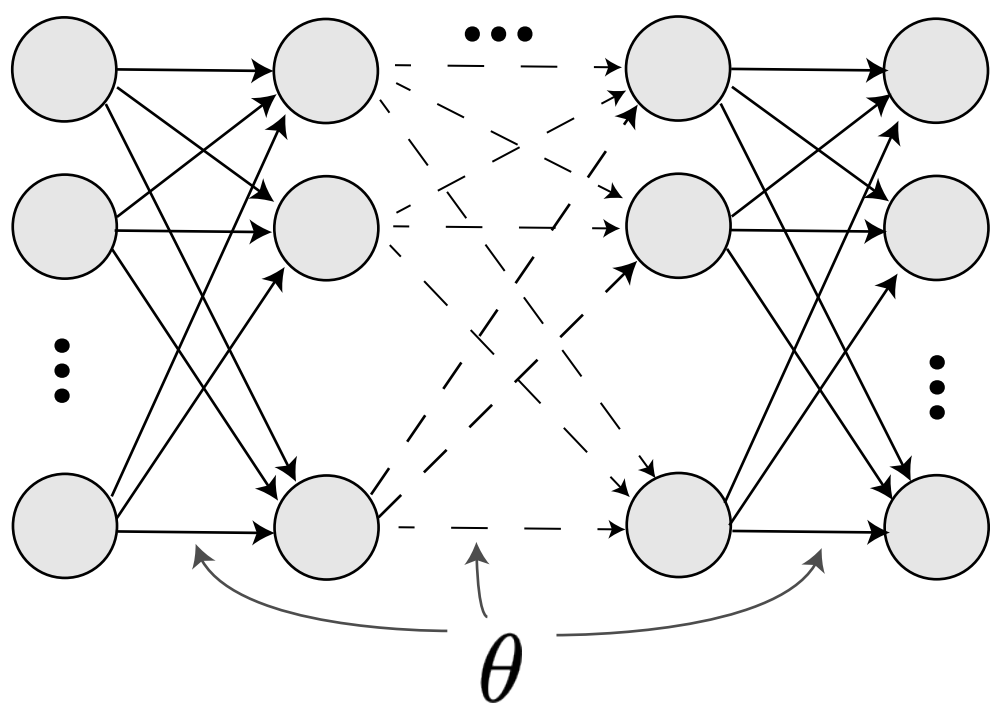
emergent  
propertyEmergent property  
inference (EPI)

B



C

deep probability distribution

random input  
samples  
 $\omega \sim q_0$ inferred distribution  
samples  
 $z \sim q_\theta$ 

D

$$\operatorname{argmax}_{q_\theta \in \mathcal{Q}} H(q_\theta(z))$$

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