

b True cusp bifurcation dynamics :

$$\dot{x} = \phi_1 + \phi_2 x - x^3$$

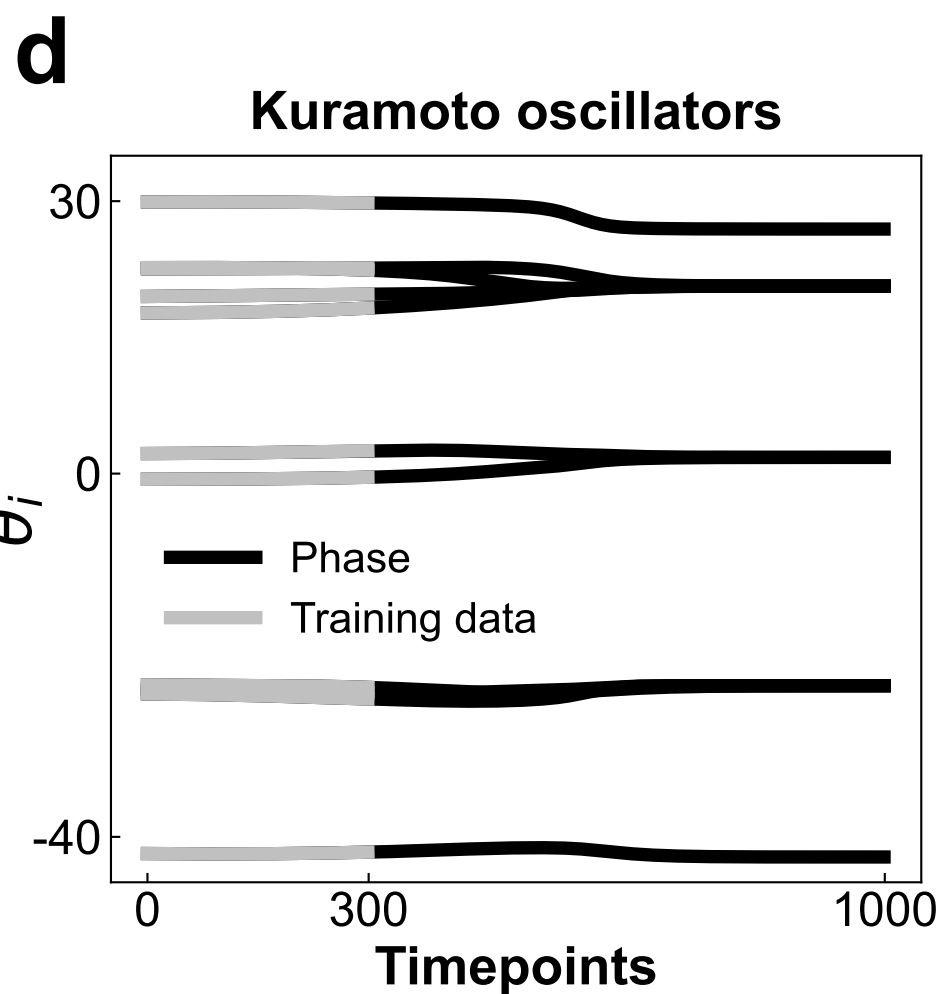
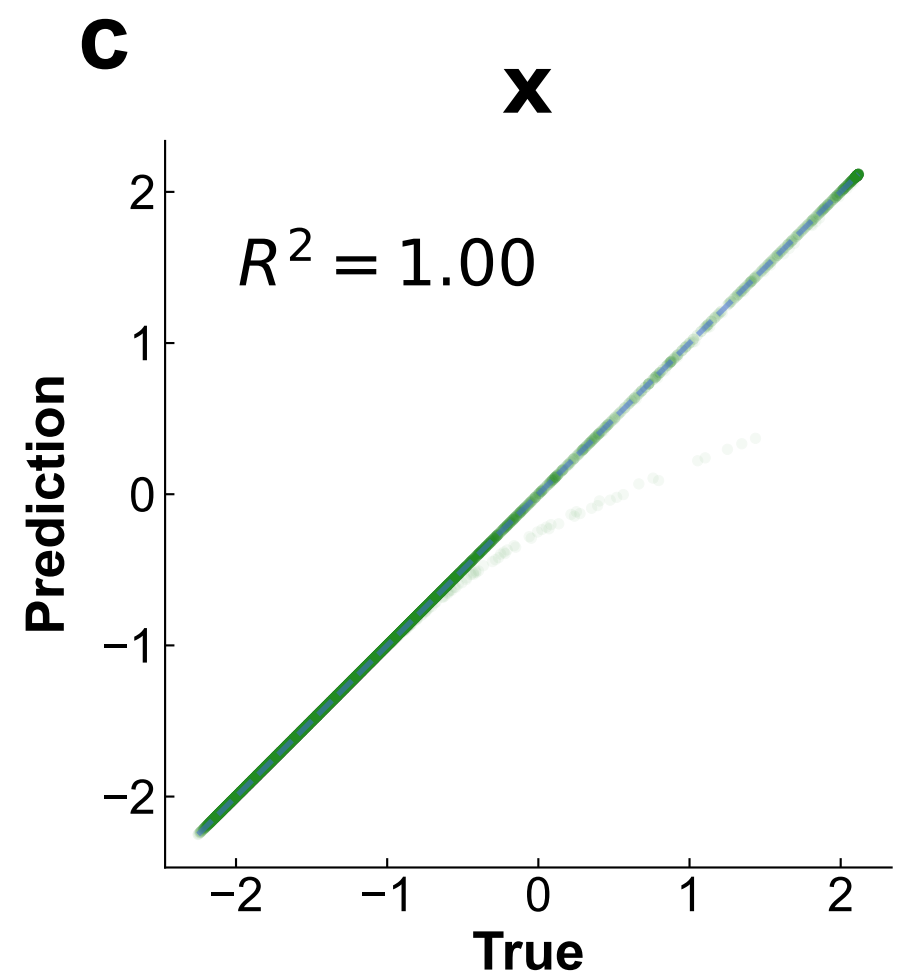
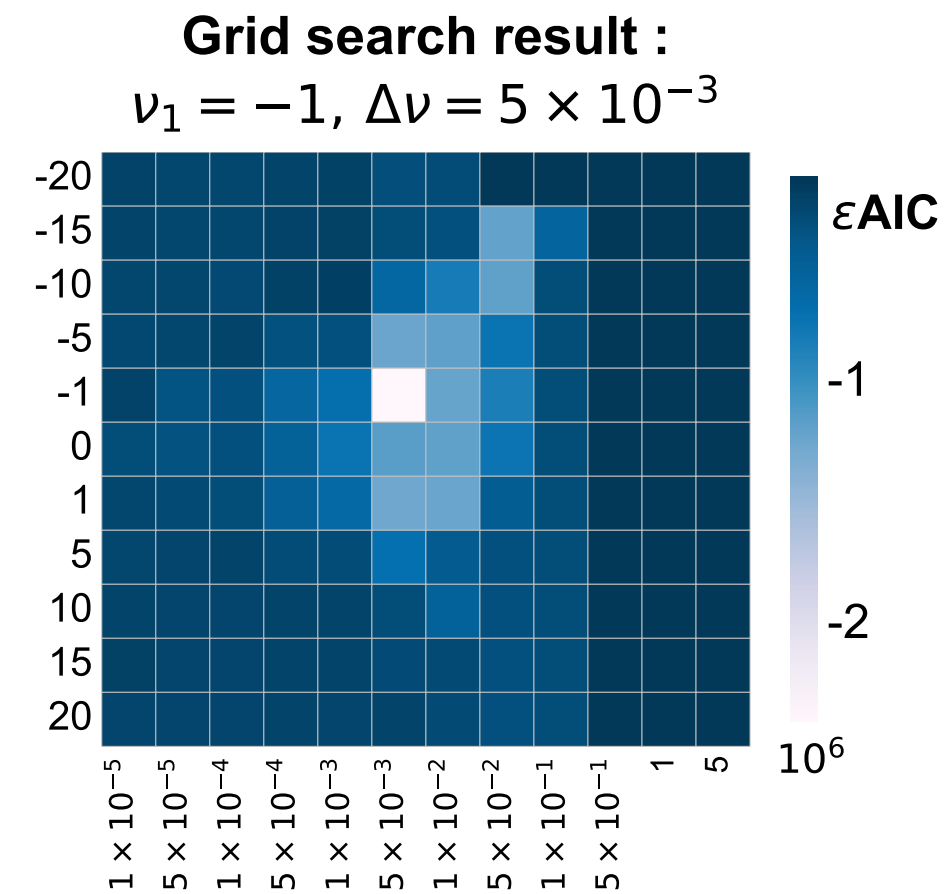
$(\phi_1, \phi_2) : (1, 4) \rightarrow (3, 3)$

↕

Inferred equation :

$$\dot{x} = (1.4 + 0.4\nu) + (3.8 - 0.2\nu)x - x^3$$

$\nu : -1 \rightarrow 4$



e True Kuramoto oscillators dynamics :

$$\dot{\theta}_i = \omega_i + \sigma \sum_{j=1}^N A_{ij} \sin(\theta_j - \theta_i)$$

$\sum_{i=1}^N \omega_i = 0, \sigma : 0 \rightarrow 1$

↕

Inferred equation :

$$\dot{\theta}_i = (0.0127 + 0.0202\nu) \sum_{j=1}^N A_{ij} \sin(\theta_j - \theta_i)$$

$\nu : -1 \rightarrow 49$

