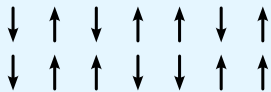


MICROSCOPIC MODEL

MACROSCOPIC BISTABILITY

NUCLEATION THEORY

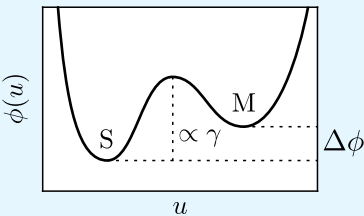
Ising spins



$$\mathcal{H} = -J \sum_{\langle \mathbf{x}, \mathbf{y} \rangle} \sigma_{\mathbf{x}} \sigma_{\mathbf{y}} - h \sum_{\mathbf{x}} \sigma_{\mathbf{x}}$$

reversible

Energy landscape



$$\begin{array}{c} \Delta\phi \\ \updownarrow \\ c \quad D \end{array}$$

Metacommunity



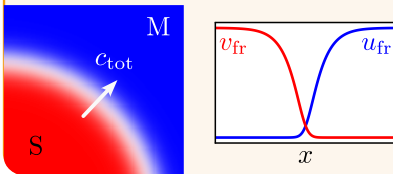
$$\partial_t \mathbf{u} = D \Delta \mathbf{u} + \mathbf{f}_{\mathbf{p}}(\mathbf{u}) + \sqrt{2TG(\mathbf{u})} \boldsymbol{\eta}$$

$$\mathbf{f}_{\mathbf{p}} = (u(1-u-av), v(1-v-bu))$$

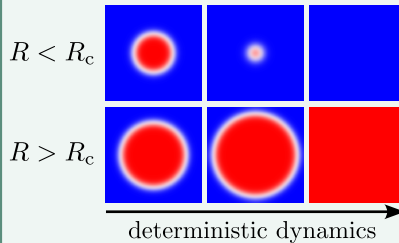
irreversible

Invasion front

$$c_{\text{tot}} = c - D\kappa + \sqrt{2Tg\xi}$$



Critical radius



Quasipotential

