



Activator-Inhibitor system of FitzHugh-Nagumo type

$$\begin{cases} u_t = \varepsilon^2 u_{xx} + f(u) - v, & t > 0, x \in (0,1) \\ \tau v_t = d_v v_{xx} + u - \gamma v \end{cases} \quad \begin{array}{l} f(u) : \text{odd symmetry} \\ \text{Neumann B.C. :} \end{array} \quad \text{EX. } f(u) = u(1 - u^2)$$

$d_v \rightarrow \infty$ ↓

$$\begin{cases} u_t = \varepsilon^2 u_{xx} + f(u) - \xi, & t > 0, x \in (0,1) \\ \tau \xi_t = \int_0^1 u(t,x) dx - \gamma \xi \end{cases}$$

Shadow system Cf. single layer solution is stable for any coefficients (Nishiura 1990)

$u_1^+(x)$

