

* Electronic Address: scheel@umn.edu

¹ University of Minnesota

Invasion and resonance

Arnd Scheel^{1*}

I will present recent joint work with M. Holzer and G. Faye on characterizations of invasion speeds in dissipative equations. The key observation is that spreading into unstable state can be understood as a resonant interaction between spatio-temporal modes through linear or nonlinear terms. Other than invasion by “pushed” fronts, speeds are determined by the linearization, only. The mechanism requires the presence of resonant coupling terms, but is independent of the strength. We illustrate our results near a Turing-steady-state mode interaction in a neural field model.