

Markus Schmidtchen

Pattern formation in non-local systems with cross-diffusion

Multi-agent systems in nature oftentimes exhibit emergent behaviour, i.e. the formation of patterns in the absence of a leader or external stimuli such as light or food sources. We present a non-local two species cross-interaction model with cross-diffusion and explore its long-time behaviour. We observe a rich zoology of behaviours exhibiting phenomena such as mixing and/or segregation of both species and the formation of travelling pulses.