

Stable moving patterns in the 1-D and 2-D Gray-Scott Reaction-Diffusion System

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The cubic autocatalysis reaction model of Gray and Scott has been used in many reaction-diffusion pattern formation studies; much existing work shows spot and stripe "solitons", replicating spots and self-sustaining spiral waves. This talk concerns a recent survey of the Gray-Scott parameter space, and several new pattern types that it revealed. Localized single and multi-spot patterns will be shown, exhibiting stability, linear motion, rotation and a variety of complex interactions. There will be some discussion of similarities to non-moving patterns in other simulation models and in physical experiments, the 1-dimensional case, and possible future research.