Spiral and Antispiral Waves in Reaction-Diffusion Systems

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Abstract: Spiral waves are ubiquitous phenomena in nonlinear chemical, physical, and biological systems. But antispiral waves are infrequent to date. The transition between spiral and antispiral waves has been rarely explored. We have analyzed the extended Brusselator model and the extended Oregonator model by linear stability analysis. We have demonstrated that it is possible and plausible to realize the transition between them by control of diffusion coefficient of inactivator from theoretical analysis and numerical simulations.

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