ORAL

Spot patterns and travelling waves in oscillatory systems with time-delayed feedback

In oscillatory reaction-diffusion systems, spatial coupling can render uniform oscillations unstable and can lead to spatio-temporal chaos. The application of time-delay terms then can stabilize a range of different, including novel, regular solutions. We study the complex Ginzburg-Landau equation in one-dimensional space subjected to a local timedelayed feedback term and investigate the onset and stability of localized spot patterns. These patterns are characterized by a change of oscillation amplitude and constant phase shift between the background oscillations and the inside of the localized pattern. We investigate the stability area in parameter space, the spatial extension of spots as function of the feedback parameters and the main instabilities. We also discuss a travelling wave solution observed in a slightly modified system.

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Topic 1: Pattern Formation

SESSSION: _____