

Gradient dynamics approach to chemically reacting sessile liquid drops

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We present a gradient dynamics approach to thin-film models with chemical reactions. In particular, we treat sessile liquid drops that are covered by two species of autocatalytically reacting surfactants. The gradient dynamics form is then broken by introducing external chemostats such that the system is rendered active. We analyze the resulting dynamics using numerical continuation and time simulations and find, inter alia, different modes of drop oscillation (symmetric, anti-symmetric, asymmetric with respect to parity) and self-propelled drops.

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Sitzung Einordnung: Short Talks