

Abstract Submitted
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Phase patterns in finite oscillator networks with insights from the piecewise linear approximation DANIEL GOLDSTEIN, Brandeis Univ — Recent experiments on spatially extend arrays of droplets containing Belousov-Zhabotinsky reactants have shown a rich variety of spatio-temporal patterns. Motivated by this experimental set up, we study a simple model of chemical oscillators in the highly nonlinear excitable regime in order to gain insight into the mechanism giving rise to the observed multistable attractors. When coupled, these two attractors have different preferred phase synchronizations, leading to complex behavior. We study rings of coupled oscillators and observe a rich array of oscillating patterns. We combine Turing analysis and a piecewise linear approximation to better understand the observed patterns.

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