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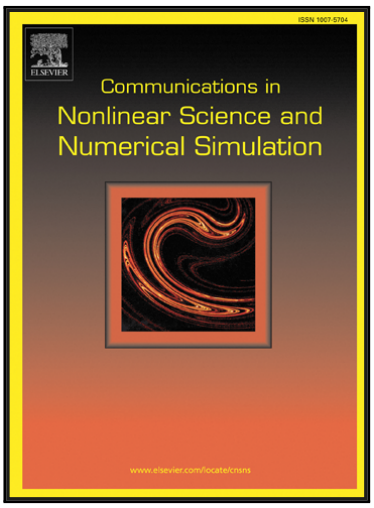

Range of validity and intermittent dynamics of the phase of oscillators with nonlinear self-excitation

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Highlights

- We evaluated the range of values of parameters, for which the *nonlinearly* excited phase equation (an active dissipative PDE) is valid as a particular case of the general (infinite) phase equation.
- The range is compared with the validity range for the Kuramoto-Sivashinsky equation for the same physical system.
- We solved the nonlinearly excited phase equation in forced and unforced versions numerically in two spatial dimensions. Some exact solutions are constructed analytically.
- Irregular dynamics are observed, where periods of fast motion intermit with periods of slow evolution.

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