

Something Other than the Usual Kind of Instability and Spatial Patterns

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Abstract

We introduce non-standard notions of instability and spatial patterns and discuss their robustness. In fact, these notions correspond to what is really usually done in numerical computations or in a laboratory. We describe situations when our patterns evolve due to the newly introduced instability of the basic homogeneous steady state even if it is stable and even if heterogeneous stationary solutions do not exist.

This is a joint work with Prof. M. Kučera (Institute of Mathematics, Czech Academy of Sciences, Prague, Czechia), V. Klika (Czech Technical University, Prague, Czechia) and M. Fencl (University of West Bohemia, Pilsen, Czechia).

References

- [1] M. Kučera, V. Klika, M. Fencl and J. Eisner, A new concept of instability and spatial patterns. *Nonlinear Analysis: Real World Applications*, 87:104445, 2026.