



Invitation to a PDE talk

by

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on

Think Global, Act Local: Fully Localised 2D Patterns Induced by Spatial Heterogeneities

Abstract:

There has been recent interest in the emergence of coherent structures in PDEs with spatial heterogeneities, both as a mathematical curiosity and as a relevant model for physical phenomena. In this talk I will discuss how the inclusion of a compact region of spatial heterogeneity can result in the emergence of fully localised 2D patterns. Here, the added heterogeneity allows us to prove the existence of these patterns, which remains an open problem in spatially homogeneous models. In particular, we obtain local and global bifurcation results for fully localised patterns both with and without radial or dihedral symmetry. This work is in collaboration with David J.B. Lloyd and Matthew R. Turner (both University of Surrey).

Time: Wednesday, 28th May 2025, 11:30

Location: Seminar room 08, 2nd floor, OMP