Structure of the attractor of the Cahn-Hilliard equation on the Square

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Abstract

We describe the structure of the attractor of the Cahn-Hilliard equation on two-dimensional square domains in certain parameter ranges. This is accomplished by combining numerical results on the set of equilibrium solutions due to Maier-Paape and Miller with algebraic Conley index techniques such as connection matrices and transition matrices. In particular, we discuss the possibility of saddle – saddle connections. This is joint work with K. Mischaikov (Georgia Tech) and T. Wanner (George Mason Univ.).