

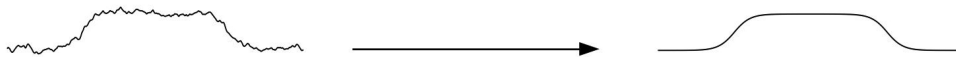
Applied Analysis Seminar

Thursday, January 26th
14:15, SR 9

Institut für Angewandte Mathematik
Mathematikon

Metastability in the one-dimensional Cahn-Hilliard equation

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In this talk we present work in progress on dynamic metastability for the one-dimensional Cahn-Hilliard equation on the torus. For initial data which is order one away from the so-called slow manifold \mathcal{N} , we identify three phases of evolution:

- (1) the solution is attracted at an algebraic in time rate to an algebraically small neighbourhood of \mathcal{N} ,
- (2) the solution is attracted at an exponential in time rate to an exponentially small neighbourhood of \mathcal{N} ,
- (3) the solution is trapped for an exponentially long time exponentially close to \mathcal{N} .

Contrary to previous results, we do not need to assume well prepared initial data. To achieve this, we use a cautious interplay between a general relaxation and a general metastability framework by Otto and Westdickenberg.