

Hausdorff School



Nonlinear evolutions: Kinetic equations and defect dynamics

Dates: July 13-17, 2015

Organizers: Barbara Niethammer, Christian Seis, Juan J. L. Velázquez

Location: Mathematik-Zentrum, Lipschitz Lecture Hall, Endenicher Allee 60, Bonn

The aim of this school is to introduce Ph.D. students and young researchers to some contemporary and ongoing research directions in the analysis of nonlinear partial differential equations. The main focus will be on kinetic equations and defect dynamics. Kinetic equations, such as Boltzmann or Smoluchowski equations, describe the relaxation of large particle systems towards its equilibrium states or serve as models for coagulation or population dynamics. Defects are ubiquitous in physical problems, e.g., as vortices in the fluids or superfluids.

Main lectures:

Robert L. Jerrard (Toronto): *Dynamics of defects in conservative nonlinear evolution equations*

Stéphane Mischler (Paris-Dauphine):
Spectral analysis of hypocoercive semigroups and applications

