

The Cahn-Hilliard equation with dynamic boundary conditions and non-smooth potentials

Prof. Dr. Hao Wu (Fudan University Shanghai)

In this talk, we present recent progress in the study of a class of Cahn-Hilliard equations with dynamic boundary conditions, which model short-range interactions between a binary mixture and a solid boundary. For the initial boundary value problem with physically relevant singular potentials, we address the following aspects: (1) Well-posedness, (2) regularity and the separation property of solutions, (3) long-time behavior, (4) asymptotic limits concerning the boundary diffusion coefficient and the kinetic rate. Finally, we will discuss extensions to the nonlocal Cahn-Hilliard equation with nonlocal dynamic boundary conditions.