Christian Kahle

Instantaneous control of a Cahn-Hilliard Navier-Stokes system
(joint with M. Hintermüller and M. Hinze)

We present a nonlinear model predictive framework for closed-loop control of two-phase flows governed by the Cahn-Hilliard Navier-Stokes system. For this we adapt the concept for instantaneous control to construct distributed closed-loop control strategies for two-phase flows. The simulation of the Cahn-Hilliard Navier-Stokes system is performed by a reliable and efficient adaptive finite elements method. Using this we provide numerical investigations which indicate that distributed instantaneous control is well suited to stabilize the Cahn-Hilliard Navier-Stokes system.