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Optimization and Control of Nonsmooth and Complementarity-Based Systems: Theory and Numerics

Optimal control of a semi-discrete Cahn–Hilliard/Navier–Stokes system with variable densities

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Abstract: In this talk a time discretization of the Cahn–Hilliard/Navier–Stokes system with variable densities by Abels–Garcke–Grün is considered and an associated optimal control problem is studied. The focus lies on the non-smooth double-obstacle potential and distributed control action. Existence of minimizers are shown and first-order optimality conditions are derived by a Yosida type approximation. The resulting stationarity system corresponds to a function space version of C-stationarity.