Phase-field models for multiphase complex fluids: modeling, numerical analysis and simulations

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10:00 am – 11:00 am
SEB 2251

Abstract

I shall present some recent work on phase-field model for multiphase incompressible flows. We shall pay particular attention to situations with large density ratios as they lead to formidable challenges in both analysis and simulation.

I shall present unconditionally energy stable, decoupled numerical schemes which only require solving a sequence of linear elliptic equations at each time step for solving this coupled nonlinear system, and show ample numerical results which not only demonstrate the effectiveness of the numerical schemes, but also validate the flexibility and robustness of the phase-field model.

Graduate Students are encouraged to attend.