

Local well-posedness of the the Cahn-Hilliard-Biot system

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In this talk, we will establish local-in-time well-posedness for a diffuse interface model describing the flow of a fluid through a deformable porous medium consisting of two phases. The system non-linearly couples Biot's equations for poroelasticity, including phase-field dependent material properties, with the Cahn–Hilliard equation to model the evolution of the solid. The proof utilizes maximal regularity theory to reduce the problem to a fixed-point equation, which is subsequently solved through the application of a contraction principle. This is a joint project with Helmut Abels.