

# MULTISCALE ANALYSIS FOR TWO-PHASE FLOW WITH MOVING CONTACT LINES

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## ABSTRACT

Two phase flow with moving contact lines is very difficult to model and simulate due to its multi-scale nature. The slipness of the fluid molecules on solid substrates must be taken into account near the contact line in a continuum model since the standard no slip boundary condition induces infinite energy dissipations. The microscopic roughness and inhomogeneity of the substrates make the problem even more challenging. In this talk, we will present some recent efforts to develop coarse-graining boundary condition and efficient numerical methods on the problem. In particular, we show that the Onsager principle can be used as an approximation tool to derive effective models for the dynamical multiscale problem.

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