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Diffused interface ghost fluid method for incompressible multiphase, phase change simulations MOON SOO LEE, AMIR RIAZ, University of Maryland — Sharp interface methods for simulating multiphase flow often suffer from unstable pressure and velocity fluctuations for problems involving mass transfer. An improved sharp interface method is developed for multiphase flow with phase change using both sharp and diffused interfacial properties. The approach is based on defining continuous, phase averaged velocity and density fields within a diffused interfacial region while using the sharp treatment for the implementation of the jumps in the pressure and the temperature gradient. The method implements interface advection with diffused and stable velocity field but can represent accurate movement of the sharp interface. Two-dimensional film boiling problems are solved on a horizontal surface to demonstrate the performance of the new approach.

Moon Soo Lee
University of Maryland

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