Abstract Submitted
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Numerical simulations of pendant droplets[1] CARLOS PENA, Universitat Jaume I, Spain, LYES KAHOUADJI, OMAR MATAR, Imperial College London, JALEL CHERGUI, DAMIR JURIC, LIMSI-CNRS, SEUNGWON SHIN, Hongik University, Republic of Korea — We simulate the evolution of a three-dimensional pendant droplet through pinch-off using a new parallel two-phase flow solver called BLUE. The parallelization of the code is based on the technique of algebraic domain decomposition where the velocity field is solved by a parallel GMRes method for the viscous terms and the pressure by a parallel multigrid/GMRes method. Communication is handled by MPI message passing procedures. The method for the treatment of the fluid interfaces uses a hybrid Front Tracking/Level Set technique which defines the interface both by a discontinuous density field as well as by a local triangular Lagrangian mesh. This structure allows the interface to undergo large deformations including the rupture and coalescence of fluid interfaces.

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