

## The effect of an insoluble surfactant on the deformation of drop in simple shear flow

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The front tracking approach is implemented for investigating the effect of an insoluble surfactant on the deformation around a two-dimensional drop with arbitrary viscosity in simple shear flow. The diffuse-interface approximation is used to represent the step discontinuity in the fluid properties. The generalized Navier-Stokes equation incorporating the jump in the interfacial traction is solved by a finite-difference method, while the interface surfactant transport equation is solved by a finite-volume method. Numerical computation shows the effect of the surfactant on the drop deformation and the possibility of interface immobilization due to Marangoni traction even for mild variations in the surfactant concentration.