

Abstract Submitted
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An iterative two-fluid pressure solver based on the immersed interface method¹ SHENG XU, Southern Methodist University — An iterative solver based on the immersed interface method is proposed to solve the pressure in a two-fluid flow on a Cartesian grid with second-order accuracy in the infinity norm. The iteration is constructed by introducing an unsteady term in the pressure Poisson equation. In each iteration step, a Helmholtz equation is solved on the Cartesian grid using FFT. The combination of the iteration and the immersed interface method enables the solver to handle various jump conditions across a two-fluid interface. This solver can also be used to solve Poisson equations on irregular domains.

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