Abstract Submitted
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A second order Lagrangian Eulerian momentum bounded method for multiphase flows[1] VINCENT LE CHENADEC, HEINZ PITSCH, Center for Turbulence Research, Stanford University — A Lagrangian Eulerian framework relying on both Level Set and Volume of Fluid methods is presented in the context of multiphase flow computations. The resulting interface capturing scheme is shown to preserve planarity, and to conserve mass exactly for solenoidal and linear velocity fields. A novel fractional step approach for the incompressible Navier Stokes equation is also presented. The proposed scheme relies on a consistent transport of volume fraction and momentum fields, which also preserves velocity boundedness. A sharp interface projection step is derived accordingly. The algorithm is shown to conserve momentum exactly for solenoidal linear velocity, and to lead to robust computations.

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