Fitted ALE scheme for Two-Phase Navier–Stokes Flow

Marco Agnese

October 14, 2018

ABSTRACT

We present a novel fitted ALE scheme for two-phase Navier–Stokes flow problems that uses piecewise linear finite elements to approximate the moving interface. The meshes describing the discrete interface in general do not deteriorate in time, which means that in numerical simulations a smoothing or a remeshing of the interface mesh is not necessary. We present several numerical experiments for our numerical method, which demonstrate the accuracy and robustness of the proposed algorithm.

Link: *http://www.mit.jyu.fi/scoma/cmam2016/*

References

[1] M. Agnese and R. Nürnberg, Fitted Finite Element Discretization of Two-Phase Stokes Flow, Int. J. Numer. Meth. Fluids, 2016.