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Verification Studies for Multi-Fluid Plasma Algorithms with Applications to Fast MHD Physics JOE BECKER, AMMAR HAKIM, JOHN LOVERICH, PETER STOLTZ — In this paper we present a series of verification studies for finite volume algorithms in Nautilus, a numerical solver for fluid plasmas. Results include a set of typical Euler, Maxwell, MHD and Two-fluid benchmarks. In addition results and algorithms for a set of hyperbolic gauge cleaning schemes that can be applied to the MHD and Two-fluid systems using finite volume type methods will be presented. Finally we move onto applications in field reversed configuration (FRC) plasmas.

Joe Becker

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