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Multi-Fluid Effects and Open Boundaries in FRC Translation Simulations ERIC MEIER, V.S. LUKIN, RICHARD MILROY, URI SHUMLAK, PSI-Center, U. Washington, PSI-CENTER COLLABORATION — Multi-fluid effects are important in modeling many plasma physics phenomena. In particular, predictive modeling of Emerging Concept and Innovative Confinement Concept experiments often requires multi-fluid physics because of the relatively cool, often weakly-magnetized nature of the plasmas. To meet this need, neutral fluid effects and phenomenological Chodura resistivity have been added to the SEL code [Reference: V.S. Lukin, Ph.D. Dissertation, Princeton University (2007)]. This multi-fluid capability is now available in both visco-resistive MHD and Hall MHD models. Comparative results from FRC translation simulations with multi-fluid effects are shown. To simulate truncated domains without disruptive boundary effects, “open” boundary capability is under development and progress is presented.

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