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Rotating Magnetic Field FRC Formation Studies using the Multi-Fluid Plasma Model EDER SOUSA, Erc, Air Force Research Lab, HAI LE, UCLA — The multi-fluid plasma model equations are derived by taking velocity moments of the Boltzmann equation for each of the components in a plasma, and each species mass density, momentum density and total energy are evolved in time. This model is used to study field-reversed configuration (FRC) formation dynamics using a Rotating Magnetic Field (RMF) as an electron current drive. Particular interest is placed on the coupling of the RMF to the plasma and collisional effects between the electron, ion and neutral fluids, and some consideration to ionization effects. The simulations are designed such that they can be compared to experimental results using collisional-radiative (CR) models developed at the Air Force Research Laboratory. Distribution A: Approved for public release; distribution unlimited, AFTC/PA clearance No. 15399

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