Inductive Plasma Accelerator (IPA) TIMOTHY ZIEMBA, MSNW, JOHN SLOUGH, RICHARD MILROY, University of Washington — The Inductive Plasma Accelerator (IPA) is a plasma accelerator/interaction experiment currently under construction at MSNW. The accelerator will be capable of launching a Field Reversed Configuration (FRC) plasmoid having a mass of up to 0.2 mg with a diameter no larger than about 10 cm. In addition, the accelerator will be designed to attain plasma/plasmoid velocities up to 300 km/s while maintaining high uniformity and purity. Two IPAs will be arranged on a test bed to perform FRC merging experiments. In addition, an interaction chamber will be constructed to produce and implode a plasma liner for enhanced compression experiments on the merged FRCs thus providing the first experimental test of the plasma liner fusion concept. 2D MHD simulations show expected densities of \( >10^{22} \text{ m}^{-3} \) with ion temperatures in excess of 800 eV for the merging FRCs. The status of design and construction of the experiment and additional simulation results will be presented.

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