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Overview of the NRL DPF program: Experiment and Modeling¹ A. S. RICHARDSON, S. L. JACKSON, J. R. ANGUS, J. L. GIULIANI, S. B. SWANEKAMP, J. W. SCHUMER, Naval Research Lab, D. MOSHER, Syntek/Icarus — Charged particle acceleration in imploding plasmas is an important phenomenon which occurs in various natural and laboratory plasmas. A new research project at the Naval Research Laboratory (NRL) has been started to investigate this phenomenon both experimentally—in a dense plasma focus (DPF) device—and theoretically using analytical and computational modeling. The DPF will be driven by the high-inductance (607 nH) Hawk pulsed-power generator, with a rise time of 1.2 μ s and a peak current of 665 kA. In this poster we present an overview of the research project, and some preliminary results from fluid simulations of the m = 0 instability in an idealized DPF pinch.

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