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Physics issues relevant during stagnation phase of the Z pinch[1]

EDMUND YU, Sandia National Labs — Wire-array Z pinches are the most powerful laboratory x-ray sources. However, the physics driving the stagnation phase, during which the pinch collapses on axis and subsequently radiates, remains somewhat mysterious. In particular the stagnated pinch resists undergoing radiative collapse, and the radiated energy is several times the kinetic energy of the imploding plasma. In recent years, a number of theories, as well as direct 3D numerical simulation, have been developed to address these phenomena. This work will highlight some of the physics issues relevant during this complicated phase of the Z pinch. Possibilities for future work will be discussed, and, with a little luck, performed.

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