UCRL-JC-124687 Abs.

38th Annual Meeting, APS Division of Plasma Physics
11-15 November 1996, Denver, CO

ABSTRACT SUBMITTAL FORM

Deadline: Wednesday, 10 July 1996

Subject Classification Category 7.5 Pinches ☒ Theory ☐ Experiment

Non-LTE Effects in Imploding Z-Pinches* J. S. De Groot[1,2,3], C. Deeney[2], J. L. Eddleman[1], K. G. Estabrook[1], J. H. Hammer[1], T. W. L. Sanford[2], R. B. Spielman[2], and A. Toor[1]; [1]Lawrence Livermore National Laboratory, [2]Sandia National Laboratories, [3]UC Davis. Distributed fill gas puff loads on the SATURN accelerator at SNL are observed to be more stable than annular loads. Strong growth of the magneto-Rayleigh-Taylor (MRT) instability is seen in 2-D rad-hydro calculations of these experiments. The ions are strongly shock heated in the distributed fill loads so that finite gyro radius and ion viscosity reduce the growth rate of the MRT instability. The ionic atomic levels are not in LTE so the radiation rate is reduced from LTE calculations and the electrons are hotter, reducing the ion-electron coupling. The ions are therefore hot in the region where the magnetic field accelerates the plasma and the MRT growth is reduced for distributed fill loads.

*Work performed under the auspices of the U.S. DOE by the LLNL under Contract W-7405-ENG-48.

☒ Prefer Poster Session
☐ Prefer Oral Session
☐ Place in the following grouping:
☐ (Specify the order)

☐ Special Audiovisual Requests
(e.g., VCR/monitor, movie projector)

☐ Other Special Requests
(e.g. Supplemental session, additional subject categories)

Submitted by:

Signature of APS Member

John DeGroot
Member Name Typewritten

Lawrence Livermore Nat'l. Lab.
Affiliation

(510) 422-8288 (510) 423-9208
Phone/Fax

Jdegroot@ucdavis.edu
Email Address

A faxed copy is NOT acceptable. This form, or a computer-generated form, plus ONE COPY, must be received by **Wednesday, 10, July 1996** at the following address.

Attn: Meetings Department, DPP96
The American Physical Society
One Physics Ellipse
College Park, MD 20740-3844
phone: (301) 209-3286