

Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Influence of Gas Injection on the Characteristics of the ZaP Flow Z-Pinch S.D. KNECHT, U. SHUMLAK, R.P. GOLINGO, B.A. NELSON, University of Washington, ZAP TEAM — The ZaP Flow Z-Pinch is a basic plasma physics experiment at the University of Washington that uses sheared flows to stabilize an otherwise unstable configuration. Recent results with a larger inner electrode (16 cm vs. 10 cm diameter) show a long-lived stable period for the pinch that ends when the current pulse goes to zero. The centroid of the current during this stable period does not move away from the axis by more than 0.7 cm. CFD simulations of neutral-gas injection show differences in the initial gas distribution in the acceleration region between the previous and modified inner electrode. The influence of the initial gas injection on the characteristics of the pinch is investigated with a goal of approaching similar initial conditions to that of the previous configuration. The results of this investigation with particular emphasis on the ion and electron temperatures will be reported.

S.D. Knecht
University of Washington

Date submitted: 20 Jul 2008

Electronic form version 1.4