

Abstract Submitted
for the DPP96 Meeting of
The American Physical Society

Sorting Category: 5.1.1.2 (experimental)

Pellet Injection on DIII-D¹ T.C. JERNIGAN, L.R. BAYLOR, S.K. COMBS, S.L. MILORA, M.R. WADE, *Oak Ridge National Laboratory*, T.E. EVANS, D.A. HUMPHREYS, M.A. MAHDAVI, J.C. PHILLIPS, R.T. SNIDER, *General Atomics*, R. MAINGI, *Oak Ridge Associated Universities* — During the past year pellet injection experiments have concentrated on testing density limits and mitigation of disruptions with pellets. For the density limit experiments, the effective gas injection rate was doubled to 160 Torr-liter/s for the 4 mm barrel and 90 Torr-liters/s for the 2.7 mm barrel. In these experiments n_e exceeded the Greenwald density limit by more than 30% for extended periods while transient excursions of more than two times the density limit were obtained. Impurity pellets of neon, argon, and deuterium-neon mixtures have been used for tests to benignly terminate disruptions. In tests with triggered vertical displacement events (VDE) marked reductions in poloidal halo current amplitudes and toroidal peaking factors, plasma vertical velocity, and plasma current decay rate were obtained. The induced vertical motion in the vacuum vessel was reduced by a factor of 2. Most of the plasma thermal energy is dissipated during the pellet ablation process.

¹Research supported in part by U.S. DOE contracts DE-AC05-96OR22464 and DE-AC03-89ER51114.

Prefer Oral Session
 Prefer Poster Session

T.C. Jernigan
jernigantc@ornl.gov
Oak Ridge National Laboratory

Special instructions: P-1-19

Date submitted: February 20, 1997

Electronic form version 1.1