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Category Number and Subject: 5.6.2. DIII-D Tokamak

[ ] Theory [X] Experiment

A Pellet Dropper for ELM Pace Making Studies on DIII-D*

L.R. Baylor, C.K. Combs, C.R. Foust, T.C. Jernigan, *Oak Ridge National Laboratory*, P.B. Parks, *General Atomics* – A pellet making device that cuts and drops deuterium or impurity pellets into the edge plasma for triggering ELMs at high repetition rates has been designed at ORNL for use on DIII-D. The device known as a pellet dropper can produce small ~1 mm size cylindrical pellets and drop them at speeds of ~20 m/s. It is under fabrication now and will be installed in late 2006. The design of the device and its initial performance in the laboratory will be presented. Calculations of the dropper pellet penetration in DIII-D H-mode plasmas have been performed based on the neutral gas shielding model [1]. Experimental results of pellets triggering ELMs on DIII-D will be reviewed and compared with the expected performance of the pellet dropper.

[1] P.B. Parks and P. Turnbull, Phys. Fluids, 1735 (1978).

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