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Category Number and Subject: 5.6.2. DIII-D Tokamak

[ ] Theory [X] Experiment

ELMs Triggered From Deuterium Pellets Injected into DIII-D* L.R. Baylor, T.C. Jernigan, N. Commaux, S.K. Combs, *Oak Ridge National Laboratory*, T.E. Evans, P.B. Parks, *General Atomics,* M.E. Fenstermacher, *LLNL,* R.A. Moyer, J.H. Yu, *UCSD* – Fueling pellets have been injected into DIII-D plasmas from 5 different locations and under different plasma H-mode conditions. ELMs have been triggered from pellets injected from all locations and under all the H-mode scenarios. Pellets injected into plasmas with ELMs suppressed by a resonant magnetic perturbation have also been observed to trigger one or more small ELM like events. Experimental details of the pellet triggering of ELMs show that they are triggered before the fueling pellets reach the top of the H-mode pedestal, implying that small shallow penetrating pellets are sufficient to trigger ELMs. To test this idea a pellet dropper has been installed on DIII-D for ELM pacing studies. Initial results from 1mm pellets dropped at 10 m/s into the edge plasma show a strong toroidal deflection. Details of the pellet penetration results from the dropper will be presented and plans to improve the penetration and resulting ELM triggering will be discussed.

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