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[ ] Theory [X] Experiment

Particle Assimilation Study During Shattered Pellet Injection on DIII-D,* N. Commaux, L.R. Baylor, T.C. Jernigan, *Oak Ridge National Laboratory*; D.A. Humphreys, N.W. Eidietis, P.B. Parks, J.C. Wesley, *General Atomics*; C.J. Lasnier, *LLNL*; E.M. Hollmann, V.A. Izzo, R.A. Moyer, *UCSD* – Disruptions are an important issue for ITER. One of the most promising mitigation techniques is shattered pellet injection (SPI). SPI involves the injection of a massive frozen pellet (~3000 torr.L D_2) that is shattered just before entering the plasma into sub-millimeter solid fragments by bouncing on hard surfaces. The fragments are expected to penetrate deeper in the plasma than gas — thus rapidly increasing the density. Previous experiments have shown that SPI enables better assimilation of the particles by the plasma than gas injection but still lower than expected if the assimilation was adiabatic. The goal of this experiment is to study the influence of the MHD activity on particle assimilation during the injection by scanning q_{95}. MHD activity, particle assimilation and toroidal transport are studied using fast magnetics and spectroscopic measurements.

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