Abstract Submitted
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ELM Mitigation Using Pellet Injection and Plans for ITER[1] L.R. BAYLOR, N. COMMAUX, S.J. MEITNER, D.A. RASSMUSSEN, ORNL, C.J. LASNIER, M.E. FENSTERMACHER, S.L. ALLEN, LLNL, A.W. LEONARD, T.H. OSBORNE, P.B. PARKS, GA, R.A. MOYER, UCSD, A. LOARTE, G. HUIJSMANS, S. MARUYAMA, ITER — D_2 pellet injection has been used on the DIII-D tokamak to demonstrate the triggering of edge localized modes (ELMs) at a 12x higher rate with much smaller intensity than natural ELMs [1]. The triggering of small ELMs by pellet injection has been proposed as a method to prevent large ELMs that can erode the ITER plasma facing components. The demonstration was made by injecting slow (<200 m/s) 1.3 mm diameter deuterium pellets at up to 60 Hz from the low field side in an ITER similar plasma with 5 Hz natural ELMs resulting in total and peak divertor heat flux reduction by more than 90%. New experiments with smaller pellets and higher rep rates are underway. Determining the minimum size perturbation and the resulting heat flux pattern in the divertor are the subject of these new experiments. The implications of these results for pellet ELM mitigation in ITER and the design of the pellet injection system for ITER will be discussed.

[1] L.R. Baylor et al., Phys. Rev. Lett. **110**, 245001 (2013).

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