Abstract Submitted
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D_2 pellet ELM triggering toward ITER-relevant conditions in DIII-D[1] ROBERT WILCOX, Oak Ridge National Laboratory, ALESSANDRO BORTOLON, Princeton Plasma Physics National Laboratory, LARRY BAYLOR, Oak Ridge National Laboratory, IGOR BYKOV, University of California, San Diego, STEPHANIE DIEM, Oak Ridge National Laboratory, CHARLES LASNIER, Lawrence Livermore National Laboratory, DAISUKE SHIRAKI, Oak Ridge National Laboratory — While the operational availability of RMP ELM suppression and/or ELM-free scenarios are being explored, ITER will use hydrogenic pellet ELM triggering to increase ELM frequency and mitigate transient heat fluxes to material surfaces in the divertor. In order to understand the physics of this triggering and extrapolate the mechanism and heat fluxes to ITER, experiments have been performed using both pacing-sized (1.3 mm) and fuelling-sized (1.8 mm) pellets in DIII-D discharges for the first time with low collisionality pedestals ($\upsilon^* < 0.7$) in order to push towards the more peeling-limited pedestal conditions expected in ITER. Changes to target heat and particle flux patterns have been documented, including a shift in the peak heat flux from the inner to the outer strike point when ELMs were triggered by LFS pellets compared to ELMs that occurred due to natural pedestal evolution.

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