

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Dependence of ELM Size on Rotation at High-Triangularity and High Beta-Poloidal in the DIII-D Tokamak¹ B. HUDSON, ORISE, R.J. GROEBNER, T.H. OSBORNE, P.B. SNYDER, GA — The effect of rotation on edge localized mode (ELM) size and frequency was studied in the DIII-D tokamak. The regime chosen was one where JT60-U, ASDEX-U and JET reported evidence of rotational dependence to ELM stored energy loss (ΔW_{ELM}) and frequency (f_{ELM}), changing from low-frequency, high heat-flux Type-I at high-rotation to the high-frequency, low-heat flux “grassy” ELMs at low rotation. In DIII-D the experiments were performed at triangularity (δ) > 0.7, β_p > 1.6, q_{95} > 6 and with a broad edge rotation scan (+90 to -70 km/s). In the DIII-D experiments, the ELM frequency was found to be weakly dependent on rotation and the ELMs appeared to be always Type-I ELMs. Comparison of ΔW_{ELM} and f_{ELM} to discharge parameters (P_{aux} , δ , β_p , q_{95}) and with other grassy ELM experiments, will be presented. The stability to peeling-ballooning modes and the pedestal height for the ELMs in the rotation scan will be calculated by the ELITE and EPED1 codes. Future grassy ELM experiments in DIII-D based on this analysis will be outlined.

¹Work supported by the US DOE under DE-AC05-06OR23100 and DE-FC02-04ER54698.

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Date submitted: 16 Jul 2010

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