Abstract Submitted
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**Observations of ELM stabilization during neutral beam injection in DIII-D**[1] ALESSANDRO BORTOLON, GERRIT KRAMER, AHMED DIALLO, MATTHIAS KNOLKER, RAJESH MAINGI, RAFFI NAZIKIAN, Princeton Plasma Physisics Laboratory, Princeton, NJ 08543, USA, JOHN DEGRASSIE, THOMAS OSBORNE, General Atomics, San Diego, CA 92121, USA — Edge localized modes (ELMs) are generally interpreted as peeling-ballooning instabilities, driven by the pedestal current and pressure gradient, with other subdominant effects possibly relevant close to marginal stability. We report observations of transient stabilization of type-I ELMs during neutral beam injection (NBI), emerging from a combined dataset of DIII-D ELMy H-mode plasmas with moderate heating obtained through pulsed NBI waveforms. Statistical analysis of ELM onset times indicates that, in the selected dataset, the likelihood of onset of an ELM lowers significantly during NBI modulation pulses, with the stronger correlation found with counter-current NBI. The effect is also found in rf-heated H-modes, where ELMs appear inhibited when isolated diagnostic beam pulses are applied. Coherent average analysis is used to determine how plasma density, temperature, rotation as well as beam ion quantities evolve during a NB modulation cycle, finding relatively small changes (˜3%) of pedestal Te and ne and toroidal and poloidal rotation variations up to 5 km/s. The effect of these changes on pedestal stability will be discussed.

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