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Theory Experiment

Examination of the Evolution of Edge Profiles and Ion Transport Between ELMs on DIII-D,* J.-P. Floyd, W.M. Stacey, S.C. Mellard, *Georgia Tech*; R.J. Groebner, *General Atomics* – The measured edge profile evolution between edge-localized modes (ELMs) of DIII-D H-mode discharge 144977 is analyzed with a fine time resolution in order to understand the evolution of diffusive (inferred thermal diffusivities and ion diffusion coefficients) and non-diffusive (particle pinch velocities) transport properties in the edge, using the momentum balance methodology of Ref. [1]. The evolution of the density, temperature, rotation, and radial electric field profiles in the edge pedestal between ELMs provides information of these diffusive and non-diffusive transport processes in the pedestal of H-mode plasmas. This methodology is incorporated into the GTEDGE code developed for DIII-D data interpretation. Using a smaller integration time for the charge-exchange-recombination measurements than past analyses allows a more detailed examination of the time evolution of the ion temperature and rotation velocities.

[1] W.M. Stacey and R.J. Groebner, *Nucl. Fusion* **51**, 063024 (2011).

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