

Abstract Submitted
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Comparison of Experimental and Theoretical Thermal Diffusivities in the DIII-D Edge Plasma¹ J.J. ROVETO, W.M. STACEY, T.M. WILKS, GA Tech — The capability of the Georgia Tech GTEDGE edge transport interpretation code has been upgraded to include improved ion-orbit-loss models for neutral beam and thermalized ions in the edge plasma.² We are undertaking a new comparison of various theoretical thermal diffusivity models with the improved interpretation of experimental edge transport now possible. The initial effort is examining two DIII-D shots, #123302, a reference ELMing H-mode shot, and #123301, a matched RMP shot. The improved interpretation leads to quite different experimental thermal diffusivity profiles in the edge than previously reported when ion-orbit-loss effects are included. The experimental values are being compared with various theoretical models, including paleoclassical, neoclassical, ITG, drift ballooning mode, TEM, and ETG.

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²T. M. Wilks et al., Transport Task Force Workshop 2015.

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