

Abstract Submitted
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Interpretation of thermal conductivity in DIII-d, taking into account. JONATHAN ROVETO, WESTON STACEY, Georgia Institute of Technology — The Georgia Tech GTEDGE edge transport interpretation code, with improved Ion Orbit Loss (IOL) models for neutral beam and thermalized ions in the edge plasma, is being applied to DIII-D shots to facilitate comparisons of various theoretical particle and thermal diffusivity models. The code interprets the thermal diffusivity while correcting for non-diffusive phenomena, including IOL, convection, viscous heating, rotational energy, and work done by the flowing plasma against the pressure tensor. These experimental results are being compared with various theoretical models, including paleoclassical, neoclassical, ITG, drift ballooning mode, TEM, and ETG. We also interpret viscous drag and a pinch velocity using IOL-corrected particle fluxes. Analysis of shot #166606 shows that significant decreases in thermal conductivity are be found in the edge plasma when non-diffusive effects are taken into account.

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