

Abstract Submitted
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Improving Database Agreement of Gyrofluid Transport Models with Empirical Adjustments¹ J.E. KINSEY, R.E. WALTZ, General Atomics — The semi-theoretical Multi-mode transport model has obtained the best overall agreement with the ITER Profile Database in comparison with theoretical models fit to gyrokinetic stability and gyrofluid nonlinear simulations. Generally, gyrofluid models such as the IFS/PPPL and GLF23 models contain no empirical fit coefficients. Here, we seek to understand the source of the Multi-mode model agreement (<15% for the stored energy) with the data and gyrofluid model discrepancies (>25%) from the data by conducting sensitivity studies on the GLF23 model varying the choice of normalization, saturation rule, and implementation of $E \times B$ shear stabilization. Preliminary adjustments result in reduced discrepancies to the 20% level. The insights obtained are then used to create an improved Multi-mode transport model based on dispersion relations more faithful to exact gyrokinetic stability. Implications for ITER projections are also discussed.

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Prefer Oral Session
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