Abstract Submitted
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TRANSP - TGLF predictions for ITER[1] R.V. BUDNY, X. YUAN, B. GRIERSON, PPPL, G. STAEBLER, GA — The GLF23 [1] and TGLF [2] quasi-linear gyrofluid transport simulation models have been installed in TRANSP for analysis of experiments and for generating self-consistent integrated predictions [3]. A new parallel module PT-SOLVER was developed [4] for efficient solution of these and other numerically challenging transport models. A new spectral shift paradigm was added to TGLF [5] to strengthen the physics basis of toroidal rotation and flow shear simulations. Predictions of density, temperatures, and toroidal rotation are being verified and validated [6,7] with experimental data from JET and DIII-D. Verification and validation results, and predictions for ITER H-mode and hybrid plasmas are given. The ITER predictions are compared with previous TRANSP predictions [8] using the GLF23 model.

[1] R. Waltz, *et al.,* Phys. Plasmas **4** (1997) 2482
[2] G.M. Staebler, *et al.,* Phys. Plasmas **14** (2007) 055909
[3] R.V. Budny, *et al.,* IAEA Fus. Energy conf. (2012), San Diego
[4] X. Yuan, *et al.,* this conf
[5] G.M. Staebler, *et al.,* Phys. Rev. Letters. **110** 055003 (2013)
[6] R.V. Budny, *et al.,* EPS (2013) Espoo
[7] B. Grierson, *et al.,* this conf
[8] R.V. Budny, Nucl. Fus. **52** (2012) 013001

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Robert Budny
PPPL

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