Abstract Submitted
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Revising the L-mode Edge Transport Shortfall with More Accurate Gyrokinetic Simulations[1] R.E. WALTZ, J. CANDY, General Atomics, R.V. BRAVENEC, Fourth State Research — While GYRO simulations of core ($0<r/a<0.7$) DIII-D L-mode shots are in good agreement with experiment, simulated low-k transport and turbulent intensity was more than 5-fold lower in the near edge ($r/a = 0.8$) of DIIID-shot 128913[1]. Gyrokinetic codes in good core agreement, differ on the short-fall [7-fold (GYRO, GEM) and 2-fold (GENE, GS2)][2]. Here we focus on the far edge ($r/a=0.9$) DIII-D shot 101391 previously reported to have a 10-fold shortfall with GYRO[3]. Using the new CGYRO code [4] with a (k-space) spectral grid, the 10-fold shortfall has vanished. CGYRO is in good agreement with experiment and the spectral GENE code. Repetition of the 2012 GYRO runs [3] at much higher radial space grid resolution and more accurate radial gyro-average and derivatives appear to make-up for most of this far edge shortfall.

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[2] T. Gorler, A.E. White, et al., Phys. Plasma 21, 122307 (2014)
[3] R.E. Waltz, BAPS 57,105 (2012), DPP.DI3.2
[4] J. Candy , E.A. Belli, R.V. Bravenec, J. Comput. Phys., 324, 73 (2016)

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