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Edge Turbulence Analysis of DIII-D Single Null L-Mode Discharges with BOUT,* M.A. Makowski, M. Groth, M. Umansky, X. Xu, *LLNL,* J.A. Boedo, *UCSD* – The BOUT code, based on the 2-fluid Braginskii equations, has demonstrated good qualitative agreement with the measured characteristics of edge turbulence [1]. In this study, we extend these results by making detailed comparisons between BOUT turbulence simulations and experimental measurements from two DIII-D single null L-mode discharges. The shots are well diagnosed and include probe measurements of the turbulence and time-averaged multiple charge state density profiles. The UEDGE code is used to obtain the poloidally dependent profiles of T_e, T_i, n_i, ϕ the plasma potential, and the ion flow velocity, V_i that are needed as initial conditions for the BOUT code. Synthetic diagnostics are being developed to compare the BOUT predictions with the experimental measurements. Results of the BOUT runs and their comparison with the measurements will be presented and the poloidal dependence of the simulated turbulent fluxes will be compared with the diffusive fluxes predicted by UEDGE.

[1] M.V. Umansky, presented at 21st US Transport Taskforce Workshop, Boulder, Colorado (2008).

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