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Scaling of Turbulence and Transport with ρ^* in LAPD DANIEL GUICE, TROY CARTER, GIOVANNI ROSSI, University of California Los Angeles — The plasma column size of the Large Plasma Device (LAPD) is varied in order to investigate the variation of turbulence and transport with $\rho^* = \rho_s/a$. The data set includes plasmas produced by the standard BaO plasma source (straight field plasma radius a $30cm$) as well as the new higher density, higher temperature LaB6 plasma source (straight field plasma radius a $10cm$). The size of the plasma column is scaled in order to observe a Bohm to Gyro-Bohm diffusion transition. The main plasma column magnetic field is held fixed while the field in the cathode region is changed in order to map the cathode to different plasma column scales in the main chamber. Past experiments in the LAPD have shown a change in the observed diffusion but no transition to Gyro-Bohm diffusion. Results will be presented from an ongoing campaign to push the LAPD into the Gyro-Bohm diffusion regime.

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