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Turbulent Radial Correlation Lengths in the DIII-D Tokamak[1] T.L. RHODES, J.-N. LEBOEUF, E.J. DOYLE, C.L. RETTIG, University of California, Los Angeles, R. SYDORA, University of Alberta, R.A. MOYER, University of California, San Diego, K.H. BURRELL, D.M. THOMAS, General Atomics — Measurements of radial correlation length Δr of density fluctuations have been made on the DIII–D tokamak in Ohmic and L–mode discharges. These measurements span the radii $\rho \approx 0.5$-1.0 and are found to scale approximately as $\rho_{\theta,s}$ or $8 \times \rho_s$. Here $\rho_{\theta,s}$ is the ion Larmor radius calculated using the local T_e and B_θ while ρ_s is the same except calculated using the total magnetic field, B_{tot}. Currently, these scalings are not distinguishable over the radii involved due to uncertainties. The measured values of Δr are similar to what is expected from drift wave like fluctuations, including ion temperature gradient driven turbulence. The data were obtained primarily from a heterodyne reflectometer system, however, data from other diagnostics are also presented. Comparison to analytical and numerical models will be made. Such comparisons can be important as they serve to benchmark theory and codes as well as to help identify the type(s) of turbulence involved.

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☐ Prefer Oral Session
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Special instructions: DIII-D Poster Session 1, immediately following RA Moyer

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