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Turbulent Transport Studies in the Helimak Experiment[1] KEVIN LEE, JAKUB FELKL, KENNETH W. GENTLE, DYLAN MIRACLE, Fusion Research Center, The University of Texas at Austin — Measurements of turbulent fluctuations and the associated transport have been made in the Helimak experiment, a device possessing a simple, helical confinement geometry. We have found there to be a strong dependence of the character of both the turbulence and transport on the connection length along the magnetic field lines, which we find to be an appropriate stability parameter. There appears to be a strong correlation between density and electric field fluctuations when the particle flux reaches is maximum value, a hallmark of drift wave turbulence driven transport. Local particle fluxes are also investigated as a function of neutral gas pressure, input ECRH power, ion mass, and radial position inside the vessel.

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