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**Turbulence and Transport in Strong Interchange-Type Turbulence** KENNETH GENTLE, University of Texas at Austin — The Helimak is an approximation to the infinite cylindrical slab with a size large compared with turbulence transverse scale lengths, but with open field lines of finite length. A pressure gradient in unfavorable magnetic curvature is unstable to interchange-type modes, leading to large amplitude nonlinear fluctuations similar to those in a tokamak SOL. A novel magnetically-baffled probe cluster permits full characterization of the turbulence, including density, temperature and plasma potential fluctuations as well as particle and thermal radial transport rates across the full plasma profile. Turbulence varies in a complex way with plasma parameters, but it can be most strongly modified by the application of bias to alter the transverse (poloidal, orthogonal to B and R) flow patterns. Despite the short coherence lengths, the level of saturated turbulence cannot be inferred from local parameters. The transport is mediated by two, often independent, mechanisms. The flows change the amplitudes of the fluctuating fields responsible for the transport. The flows also change the coherence between the fields (seen in either time or frequency domains), leading to changed net transport. The Helimak is moving to Shenzhen University.

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