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Control of SOL Turbulence KENNETH GENTLE, University of Texas at Austin, JAKUB FELKL, KEVIN LEE, DYLAN MIRACLE — The Helimak is an approximation to the infinite cylindrical slab, but the field configuration may be arranged as a simplified SOL with magnetic curvature and shear for realistic connection lengths. The turbulent amplitudes are typical of the SOL in fusion devices. Radially segmented isolated end plates allow application of radial electric fields that drive radial currents. Above a sharp threshold in applied voltage (driven current), the fractional turbulent amplitude is greatly reduced, as is the radial turbulent particle transport. Stabilization is observed for both positive and negative bias. Measurements of the transport reduction will be presented. The spatial relations between the region of applied fields and the turbulence suppression will be described. Extrapolation to fusion devices at higher density will be discussed. Work supported by the Department of Energy Office of Fusion Energy Sciences DE-FG02-04ER54766.

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