Shear Flow Stabilization of Turbulence in the Helimak KENNETH
GENTLE, JAKUB FELKL, KEVIN LEE, DYLAN MIRACLE, University of Texas
at Austin — The Helimak is a good approximation to the infinite cylindrical slab,
but the end plates allow application of radial electric fields that drive radial currents.
A strong bifurcation occurs at a critical bias condition with reduction in the level of
fractional density fluctuations, generally with both smaller fluctuations and higher
density. The bifurcation occurs for both positive and negative bias voltages at
a threshold current. The nature of the stabilization and the dependence of the
threshold condition on plasma parameters will be described. Work supported by
the Department of Energy Office of Fusion Energy Sciences DE-FG03-00ER54609.

Kenneth Gentle
University of Texas

Date submitted: 22 Jul 2005   Electronic form version 1.4