

Abstract Submitted
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Simulations of transport and sheared flow in the helimak experiments¹ B. LI, B.N. ROGERS, Dartmouth College, P. RICCI, CRPP-EPFL, K.W. GENTLE, University of Texas at Austin — A two-dimensional fluid model that includes $E \times B$ convection, magnetic curvature, and plasma sources, is used to study the helimak experiments, a magnetized toroidal plasma with open field lines. The model equations evolve both the perturbations and equilibrium profiles of the plasma density, potential, and electron temperature. The profiles of plasma parameters, the sheared $E \times B$ flow, the fluctuation-induced transport, as well as statistics of the fluctuations obtained from the simulations are presented. The simulation results show good agreement with the experimental observations.

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