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**Tuning and testing a one-dimensional transport model**[1] L. JONES, A.S. WARE, D. BRUGGER, University of Montana, M. GILMORE, University of New Mexico, E. SCHUSTER, Lehigh University — Modeling of transport and flow generation in a linear plasma device using a 1-D transport code is presented. Drift wave turbulence models have been analyzed to derive models for the growth rate and nonlinear saturation mechanism used in the transport model. The model has also been modified to include a cold-ion option and to explore different Reynolds stress parameterizations. We present comparisons with density and density fluctuation profiles from HELCAT experiments. The use of biased concentric rings as control elements for the radial electric field profile in HELCAT is also modeled in the transport code. By varying the bias voltages, the local $\mathbf{E}\times\mathbf{B}$ flow can be modified. By varying the momentum sources a sheared radial electric field can be generated that suppress turbulent particle and heat transport. The impact of biasing, axial flow and plasma boundary conditions are investigated.

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