Scaling of transport dynamics in a simple fluid drift-wave turbulence model with shear flow

Debasmita Samaddar¹, D. E. Newman¹, R. Sanchez², B. A. Carreras³

1-Univ. of Alaska, Fairbanks, 2-Oak Ridge National Laboratory, 3-BACV Solutions Inc.

In this poster, we will characterize the fractional transport exponents in simulations of drift-wave turbulence in slab geometry as a function of the model and sheared flow. Several situations will be explored, in which the relative dominance of the polarization and ExB nolinearities will be tuned artificially and the transport exponents will be explored as the sheared flow changes. In this way, we test the robustness of the fractional transport models to changes in the basic dynamics, which will help to assess the potential for application to more realistic geometries of these methods.