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Kinetic applications of the ArbiTER eigenvalue code[1] D.A. BAVER, J.R. MYRA, Lodestar Research Corporation, M.V. UMANSKY, Lawrence Livermore National Laboratory — ArbiTER is a flexible eigenvalue code designed for linear fluid or kinetic plasma models is various dimensionalities and topologies. This flexibility derives from the use of specialized equation and topology parsers, which permit run-time specification of a particular linearized physics model, geometry, and grid connectivity, which in turn determine how a particular equation set will be discretized. The resulting matrix form of the problem is then solved using the SLEPc [1] eigensolver package, and can be solved either as a generalized eigenvalue problem, or as a matrix solve in the case of source-driven problems. While the ArbiTER code and its predecessor 2DX have demonstrated significant utility in tokamak edge fluid problems due to their inherent flexibility, the primary aim of its development is to solve kinetic eigenvalue problems. To address this goal, we present first results from implementation of a gyrokinetic model in slab geometry. These results are compared to known solutions for limiting cases.

[1] http://www.grycap.upv.es/slepc/

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