

Abstract Submitted
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Upgrade of the CQL3D Fokker-Planck code¹ YU. PETROV, R.W. HARVEY, CompX, R. PRATER, General Atomics — Recent modifications of the bounce-averaged Collision-Quasilinear Fokker-Planck equation solver, CQL3D [1], are discussed. A fully-implicit 3D (2D-in-momentum, 1D-in-generalized radius) iterative solve using sparse matrix techniques provides for time-steps up to near the transport time, and can be used as the main option. The fully-relativistic nonlinear collisional operator is updated and tested. The radial transport module has been improved. Multi-species QL diffusion capability is added. Neutral particle analyzer synthetic diagnostic is modified. A non-symmetric up-down equilibrium capability is added. Example applications are given. Work on including finite-orbit-width effects is in progress and will also be discussed.

[1] R.W. Harvey and M. McCoy, “The CQL3D Fokker Planck Code,” www.compenco.com/cql3d.html

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