Abstract Submitted
for the DPP96 Meeting of
The American Physical Society

Sorting Category: 5.1.1.5 (theoretical)

Runaway Electron Distribution Calculation with the CQL3D Fokker-Planck Code[1] R.W. HARVEY, *CompX, Del Mar, CA*, V.S. CHAN, S.C. CHIU, *General Atomics*, M.N. ROSENBLUTH, *ITER, San Diego* — Runaway of electrons to high energy occurs during plasma disruptions due to the large toroidal electric fields generated to maintain approximately constant current as the plasma thermally quenches. The CQL3D relativistic 2D-in-momentum, 1D-in-radius, bounce-averaged Fokker-Planck code[2] has been augmented with packages addressing new physics features of this problem[3]: a current control algorithm which adjusts the applied toroidal electric field; knock-on source for large angle collisions by the runaway electrons[4]; bremsstrahlung and synchrotron radiation drag; energy-dependent Coulomb logarithm; and time-dependent background plasma profiles. The formulation of the new packages and simulations of the evolution of the electron distribution, including avalanching of the runaway electrons during plasma disruptions will be described, and benchmarked against faster simplified models.

[1]Work supported by U.S. DOE Contract DE-AC03-89ER51114.
[2]R.W. Harvey and M.G. McCoy, in Proc. IAEA TCM/Advances in Simulation and Modeling in Thermonuclear Plasmas 1992, Montreal.
[3]M.N. Rosenbluth, APS Mtg., Nov. 1995, Invited talk 7IB4.
[4]N.T. Besedin and I.M. Pankratov, Nucl. Fusion **26**, 807 (1986).

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Special instructions: X-4-2

Date submitted: February 20, 1997 Electronic form version 1.1