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Corsica Time-Dependent Modeling of DIII–D Discharges[1] T.A. CASPER, M.C. SPANG, J. CROTINGER, L.D. PEARLSTEIN, B.W. STALLARD, Lawrence Livermore National Laboratory, T.S. TAYLOR, General Atomics — We are modeling the temporal evolution of current profiles in negative and weak central shear discharges in DIII–D using Corsica, a time-dependent 1 1/2 D equilibrium and transport code. In our simulations to date, we have used experimentally measured profiles of temperature and density to benchmark the current profile evolution with the analysis of selected discharges. We have found reasonably good agreement[2] between the modeling and current profiles obtained from data fits to the equilibrium. To obtain a predictive capability useful for design of experiments, we have begun to include models for transport in our simulations of the self-consistent evolution of equilibrium and transport. We will present simulations representative of recent high performance discharges obtained in DIII–D.

[1]Work supported by U.S. DOE Contracts DE-AC03-89ER51114 and W-7405-ENG-48.
[2]Casper, T.A., et.al., 23rd EPS Conference on Controlled Fusion and Plasma Physics, Kiev, Ukraine, June 24-28, 1996.

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