

Abstract Submitted
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Sorting Category: 6.6.2 (Experimental)

Reconstruction of Current Profiles in DIII-D ECCD Discharges¹ L.L. LAO, Y.R. LIN-LIU, D. BRENNAN, V.S. CHAN, T.C. LUCE, C.C. PETTY, R. PRATER, H.E. ST. JOHN, General Atomics, W.H. MEYER, Lawrence Livermore National Laboratory — A key element of the DIII-D research program is the use of ECCD to control and sustain the current profile for advanced tokamak study. An important issue is the determination of the ECCD profiles. Previous results obtained from analysis based on a time series of EFIT equilibrium reconstructions using MSE data show that the widths of the ECCD profiles are generally broader than those predicted theoretically. There are indications from ECCD transport simulations that the narrower predicted profiles are consistent with the MSE data and the discrepancy is due to the finite spatial resolution and the smooth basis functions used in the reconstruction. To resolve the discrepancy, various improvements are made to EFIT. These include increasing the spatial grid to 257×257 , an option to optimize the spline knot locations and representations to allow localized features with strong gradient. Detailed comparisons of the reconstructed ECCD profiles using these new EFIT tools against the theoretical predictions will be presented.

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Prefer Oral Session
Prefer Poster Session

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Special instructions: Current Drive - Wave Particle, immediately following BD Bray
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