

Abstract Submitted
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Sorting Category: 5.10 (theoretical)

Modeling of Neoclassical Tearing Mode Stabilization by ECCD in DIII-D¹ R.W. HARVEY, CompX, F.W. PERKINS, ITER, A. PLETZER, Princeton Plasma Physics Laboratory, R.J. LA HAYE, Y.R. LIN-LIU, R. PRATER, General Atomics — Both modulated electron cyclotron current drive (ECCD)² and modification of the zero order current profile by continuous current drive (CCD)³ have been proposed as methods to stabilize neoclassical tearing modes (NTM) in tokamaks. These are being examined within the context of experiments on DIII-D. The modulated CD seeks to compensate the loss of bootstrap current resulting from zero pressure gradient within the island. An inductive “back electric field” impedes current ramp up and initially reduces the efficiency of current drive. We use the CQL3D code to examine parameter dependences of ramp-up of the current drive, and the ONETWO transport code for calculation of resistive decay of the back EMF. The efficiency of NTM stabilization by the two methods will be compared.

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²F.W. Perkins *et al.*, EPS, Berchtesgaden, 1997, part III, p. 1017.

³A. Pletzer *et al.*, private communication.

Prefer Oral Session
 Prefer Poster Session

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Special instructions: DIII-D Poster Session I (transport, turbulence, & stability), immediately following Popov

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