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[ ] Theory [**x**] Experiment

Neoclassical Tearing Modes in DIII–D and Calculations of the Effects of Localized Electron Cyclotron Current Drive,[*] R. Prater, R.J. La Haye, Y.R. Lin-Liu, J.M. Lohr, *General Atomics*, R.W. Harvey, *CompX*, S. Bernabei, K.L. Wong, *Princeton Plasmas Physics Laboratory* — Neoclassical tearing modes are found to limit the achievable beta in many high performance discharges in DIII–D. Electron cyclotron current drive within the magnetic islands formed as the tearing mode grows has been proposed[1] as a means of stabilizing these modes or reducing their amplitude, thereby increasing the beta limit by a factor around 1.5. Some experimental success has been obtained previously on Asdex-U.[2] Here we examine the parameter range in DIII–D in which this effect can best be studied, including time-dependent effects due to the back-emf which is generated by the applied current drive and which decays on the same time scale as the loss of bootstrap current that causes the mode to grow.

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[1]O. Sauter *et al.*, Phys. Plasmas **4** (1997) 1654.
[2]H. Zohm *et al.*, Proc. 25th EPS Conf., Prague (1998) 480.

[**x**] Prefer Poster Session
[ ] Prefer Oral Session

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