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[ ] Theory [**x**] Experiment

Improved Momentum and Ion Thermal Confinement with Stabilization of Neoclassical Tearing Modes in DIII–D,[*] J.S. deGrassie, R.J. La Haye, T.C. Luce, C.C. Petty, R. Prater, *General Atomics*, D. Brennan, *Oak Ridge Institute for Science Education* — In DIII–D it is observed that rf electron heating sometimes results in a reduction in core toriodal momentum and ion thermal confinement, especially in discharges having enhanced core confinement and hot ion modes.[1] To lowest order the heating method does not matter, either electron cyclotron or fast wave heating had the same effect. The working model is that increasing the electron temperature destabilizes turbulence which enhances transport. Here we describe counterexample discharges in which EC current drive is used to stabilize a 3/2 neoclassical tearing mode. There is an increase in electron temperature and there is some recovery in toroidal rotation and ion temperature, as well as a recovery in normalized beta with the mode suppression. These examples are given by way of contrast to the former results, and to demonstrate the importance of internal MHD activity on toroidal momentum confinement. A further question is whether the effects described in[1] may be due to such magnetic activity at levels below the detection threshold of the DIII–D magnetic probes.

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[1]J.S. deGrassie *et al.*, Proc. 26th European Conf. on Contr. Fusion and Plasma Physics, Maastricht, 23J (1999) 1189.

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

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