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**Electron Cyclotron Current Drive in DIII-D<sup>1</sup>** R. PRATER, T.C. LUCE, C.C. PETTY, Y.R. LIN-LIU, General Atomics, M.E. AUSTIN, University of Texas, G. GARSTKA, University of Maryland, R.W. HARVEY, CompX, M. MURAKAMI, Oak Ridge National Laboratory — Initial experiments have been carried out on electron cyclotron current drive in the DIII-D tokamak. Power up to 1.2 MW at 110 GHz is incident on the plasma. Waves are injected with a toroidal velocity component to drive current. A steering mirror is used to direct the waves poloidally for generation of current drive centrally or at normalized minor radius of 0.35. Central CD gives driven currents above 100 kA. For off-axis CD, interaction with electrons near the high field side minimizes the trapping and currents above 50 kA have been obtained. Fokker-Planck studies are underway to quantify the effects of trapping and the dc electric field which is present when full local current drive is not achieved. Central and off-axis current drive affect the evolution of the net current profile in the expected ways.

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- Prefer Oral Session  
 Prefer Poster Session

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Special instructions: DIII-D Poster Session II (divertor physics, disruptions, RF, & diagnostics), immediately following Lin-Liu

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