

**Abstract Submitted for the 53rd Annual Meeting  
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Category Number and Subject:

Theory       Experiment

**Upgrade Plans and Performance of the DIII-D ECH System,\*** J. Lohr, M. Cengher, Y.A. Gorelov, H.J. Grunloh, A.G. Kellman, C.J. Pawley, W. McDaniel, R.C. O'Neill, D. Ponce, R. Prater, J.F. Tooker, *GA*; R.A. Ellis, *PPPL*; M. Blank, P. Borchard, K. Felch, S. Cauffman, *CPI* – An upgrade is in progress on the DIII-D gyrotron complex, to increase the number of gyrotrons from 6 to 8 and raise the injected rf power from 3.5 to 5.5 MW. The 1st step in this upgrade is the production of a depressed collector diode gyrotron planned for initial operation in early 2012 operating at 110 GHz and generating 1.2 MW, the same frequency as the existing gyrotrons. The 8th gyrotron for the complex is planned for completion in 2013. This gyrotron will operate at 117.5 GHz and generate 1.5 MW for a pulse length of 10 s. The upgrade includes a 4th dual launcher and new high voltage power supply. The present installation has been upgraded by rerouting the waveguide transmission lines to reduce the number of miter bends, increasing the scanning speed and pointing accuracy of the articulating launcher mirrors and providing for aiming scans, with feedback, during a plasma shot.

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