

Abstract Submitted
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Commissioning of the First Part of the 110 GHz ECH System on the DIII-D Tokamak¹ JOHN LOHR, R.W. CALLIS, DAN PONCE, J.T. TOOKER, *General Atomics*, L. POPOV, *Gycom*, DAQING ZHANG, *IPP, Academia Sinica* — The first gyrotron of the new 110 GHz installation has been operated into the DIII-D tokamak. Generated power as high as 885 kW and maximum pulse length of 500 msec, a temporary administrative limit, have been achieved from the Gycom Centaur gyrotron. Modulation at 50 Hz was successful at about 60% modulation depth. The overall rf generation efficiency is 37% and the efficiency of coupling and transmitting the power to the tokamak is 80%. The transmission line is evacuated and has only one window, the boron nitride gyrotron window. The line has worked without any arcing up to the full pulse length in 31.75 mm diameter corrugated circular waveguide carrying the HE₁₁ mode. Greater than 0.5 MW has been injected into DIII-D plasmas as inferred from MHD evaluation of the stored energy. Central electron temperatures up to 7 keV were obtained in tenuous plasmas, and experiments on modulated transport and off-axis heating have been performed.

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Prefer Oral Session
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