

Abstract Submitted  
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Sorting Category: 5.1.1.2 (experimental)

**Characterization of Wave Polarization in the DIII-D  
110 GHz ECH System<sup>1</sup>** H. IKEZI, J.L. DOANE, J. LOHR, C.P.  
MOELLER, D. PONCE, General Atomics — The heat absorption pro-  
files of electron cyclotron heating power(ECH) and spatial location of  
the current drive in tokamaks depend on the polarization and injection  
direction of the microwaves with respect to the magnetic field in the  
plasma. In the DIII-D ECH system, a pair of grooved mirrors (po-  
larizers) control the wave polarization, both ellipticity and tilt angle,  
of the beam which is injected into the tokamak. The polarization of  
the microwaves passing through a complex transmission system must be  
diagnosed. We have developed a polarimeter which measures the polar-  
ization direction angle, ellipticity, and field spin direction as a function  
of time at the MW level in the evacuated waveguide system. The po-  
larimeter has been used for characterizing the gyrotron behavior and for  
testing the polarizer characteristics. Measurements with the polarizer  
also revealed the presence of some anomalies in the transmission line.

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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 deGrassie

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