

Abstract Submitted  
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Sorting Category: 5.1.1.2 (Experimental)

**Implementation of a Fast Broadband ECE Measurement on DIII-D**<sup>1</sup>

G.D. GARSTKA, R.F. ELLIS, University of Maryland, M.E. AUSTIN, University of Texas-Austin — A new broadband ECE diagnostic has been implemented on the DIII-D tokamak. This instrument features a spectral range of 50–300 GHz and a frequency response from dc up to 1 MHz. ECE emission from the plasma is split from the input beamline of the Michelson interferometer and directed by Gaussian optics to an InSb detector. A variety of filters, such as dichroic plates (high-pass) and Fabry-Perot etalons (narrow bandpass), may be introduced into the optical path to tailor the measurement to desired frequency ranges. Applications of this instrument include fast third-harmonic electron temperature measurement, identification of mode numbers of MHD instabilities in conjunction with the heterodyne radiometer, and spectral measurement of high-harmonic emission by runaway electrons. It is shown that the measurements from this instrument agree quantitatively with those from the absolutely calibrated Michelson interferometer.

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- Prefer Oral Session  
 Prefer Poster Session

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Special instructions: DIII-D Poster Session 2, immediately following BD Bray, before JC Rost

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