

Abstract Submitted  
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**A 30-Chord Radiometer for Disruptions and Fast Transients in DIII-D**<sup>1</sup> D.S. GRAY, E. HOLLMANN, S.C. LUCKHARDT, J. CHALFANT, L. CHOUSAL, R. HERNANDEZ, E. JONES, Center for Energy Research (UC San Diego), A.G. KELLMAN, General Atomics — Motivated by the successful implementation of a Si AXUV photodiode based diagnostic that provides time resolved, single-chord measurements of radiated power in DIII-D disruptions, a new diagnostic with spatial resolution and a full poloidal view of the plasma has been developed. The multi-chord disruption radiometer (DISRAD-II) has 30 viewing chords, plus a blind channel to monitor influences of non-optical origin. The detection electronics has two sensitivity settings: low for disruptions (1 MHz bandwidth) and high for transients in quasisteady plasmas (150 kHz BW). During vessel bakes, active air cooling prevents overheating of the detectors. The photodiodes are sensitive to all radiation from the visible up to  $\sim 5$  keV soft X-rays. Effective responsivities used to deduce radiated power are 0.12 A/W for disruptions and 0.18 A/W for quasisteady plasmas; these are based on results from the single-chord diagnostic, which has spectral discrimination.

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Prefer Oral Session  
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