

Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Characterization of Intense Bursts of mm-wave Emission Using New RF Spectrometer on the DIII-D Tokamak¹ L. YU, C.W. DORMIER, N.C. LUHMANN, JR., UC-Davis, B.J. TOBIAS, Princeton Plasma Physics Laboratory, M.E. AUSTIN, U of Texas — Intense bursts of mm-wave emission with duration of 5-10 μ s have been observed by both Electron Cyclotron Emission (ECE) radiometer [1] and Electron Cyclotron Emission Imaging (ECEI) systems during edge localized modes. Both the ECE radiometer system and the ECEI system employ heterodyne detection methods and have overlapping intermediate frequency (IF) bands. A new RF spectrometer, spanning this IF frequency range of approximately 2-10 GHz, has been installed on the DIII-D tokamak in order to more fully characterize the frequency, intensity, and localization of these bursts. This data has been used to better understand the generation mechanism for these bursts that are believed to relate to runaway electrons maser radiation [2]. Various consequences for diagnostic development will also be addressed.

[1] Ch. Fuches *et al.*, Phys. Plasmas **8**, 1594 (2001).

[2] B. Kurzan *et al.*, Phys. Rev. E **55**, 4608 (1997).

¹Work supported by US Department of Energy under DE-AC02-09CH11466, DE-FG02-99ER54531 and DE-FG03-97ER54415.

C.C. Petty
General Atomics

Date submitted: 23 Jul 2012

Electronic form version 1.4