

Abstract Submitted
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Investigation of Ion Cyclotron Emissions on DIII-D During Neutral Beam Injection and Fast Wave Heating¹ A. AXLEY, UCLA, R.I. PINSKER, General Atomics — Ion cyclotron emission (ICE) spectra are measured with small rf loop antennas at 4 locations in the DIII-D vessel. Two of the loops are located on the centerpost while the other two are on the outboard wall of DIII-D. Both sets of loops are near the midplane. The signal processing is done in software using data from a 1 Gigasample/s 4-channel digitizer to measure the output of these antennas rather than the traditional technique of using an analog spectrum analyzer. Specifically, an FFT is used to determine the spectra up to 500 MHz of each signal. The analysis is performed on data recorded during neutral beam injection, and during high power fast wave (FW) heating. This technique should be capable of resolving the bursting character of ICE in time, as has been often observed in the neutral beam injection case, as well as extending the observations of parametric decay instabilities during FW injection to include the pump (60 or 90 MHz) and its first several harmonics.

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