

Abstract Submitted
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Interaction between High Power RF Waves and Turbulence in LAPD JOSHUA LARSON, TROY CARTER, GURLEEN BAL, University of California, Los Angeles, BART VAN COMPERNOLLE, General Atomics — Experiments have been conducted on the Large Plasma Device (LAPD) to study the effects of high power radio frequency (RF) wave injection from an edge mounted antenna. During these experiments the modulation of core fast waves was observed in the plasma that was not reflected in the antenna current signal. This work investigates the correlation between the core fast wave fluctuation spectrum and the edge density fluctuation spectrum. Strong correlation in the aforementioned fluctuations was observed, particularly at lower frequencies. As RF power was increased the edge density fluctuations also increased. This work explores the mechanisms for power transfer from RF to broadband turbulence and semi-coherent features seen at the antenna face. Drift wave instabilities, Kelvin-Helmholtz instabilities, and three-wave interactions are investigated.

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