

Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Using field-particle correlations to study auroral electron acceleration in the LAPD¹ J. W. R. SCHROEDER, G. G. HOWES, F. SKIFF, C. A. KLETZING, University of Iowa, T. A. CARTER, S. VINCENA, S. DORFMAN, UCLA — Resonant nonlinear Alfvén wave-particle interactions are believed to contribute to the acceleration of auroral electrons. Experiments in the Large Plasma Device (LAPD) at UCLA have been performed with the goal of providing the first direct measurement of this nonlinear process. Recent progress includes a measurement of linear fluctuations of the electron distribution function associated with the production of inertial Alfvén waves in the LAPD. These linear measurements have been analyzed using the field-particle correlation technique to study the nonlinear transfer of energy between the Alfvén wave electric fields and the electron distribution function. Results of this analysis indicate collisions alter the resonant signature of the field-particle correlation, and implications for resonant Alfvénic electron acceleration in the LAPD are considered.

¹This work was supported by NSF, DOE, and NASA

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Date submitted: 14 Jul 2017

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