

Abstract Submitted
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Electron Heating and Acceleration from High Amplitude Driven Alfvén Waves in the LAPD¹ DAVID AUERBACH, TROY CARTER, BRIAN BRUGMAN, University of California, Los Angeles — High amplitude ($\delta B/B \sim 1\%$) shear Alfvén waves are generated in the Large Plasma Device Upgrade (LAPD) at UCLA, and elevated electron temperatures and high energy electrons are observed using triple probes and Langmuir current traces. The Poynting flux of the observed waves is calculated, and wave power is compared to estimates of power input required to cause the observed heating. Theoretical calculations of power transfer from wave to plasma due to Landau damping and collisional heating are also presented and compared to experimental measurements. Heating by antenna near field effects is also being explored. The density and potential structures of these waves are explored using interferometer and triple probe measurements. Applications to Auroral generation and plasma heating are discussed.

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