

Abstract Submitted
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Studies of large amplitude Alfvén waves and wave-wave interactions in LAPD¹ T.A. CARTER, B. BRUGMAN, D.W. AUERBACH, Dept. Physics and Astronomy, UCLA — Electromagnetic turbulence is thought to play an important role in plasmas in astrophysical settings (e.g. the interstellar medium, accretion disks) and in the laboratory (e.g. transport in magnetic fusion devices). From a weak turbulence point of view, nonlinear interactions between shear Alfvén waves are fundamental to the turbulent energy cascade in magnetic turbulence. An overview of experiments on large amplitude shear Alfvén waves in the Large Plasma Device (LAPD) will be presented. Large amplitude Alfvén waves ($\delta B/B \sim 1\%$) are generated either using a resonant cavity or loop antennas. Properties of Alfvén waves generated by these sources will be discussed, along with evidence of heating, background density modification and electron acceleration by the waves. An overview of experiments on wave-wave interactions will be given along with a discussion of future directions.

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Troy Carter
Dept. Physics and Astronomy, UCLA

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