

Abstract Submitted
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Whistler Waves Generated by an Electron Beam in Laboratory Plasma¹ JESUS PEREZ, SETH DORFMAN, University of California Los Angeles — Understanding the interactions between beams of electrons and magnetized plasmas is a fundamental and practical problem. For example, energetic electrons can become trapped in the Earth's magnetic field, where they can persist for years, damaging satellites in the process. Future spacecraft may carry hardware such as a relativistic electron beam or antenna, that are able to generate a plasma wave known as the whistler mode to effectively scatter trapped electrons off the fields. Presented here is an analysis of the plasma parameters for which whistler modes are generated by a 20keV electron beam in the Large Plasma Device (LAPD) at UCLA. Properties of the observed whistler modes are also discussed. Future experiments will investigate whistler waves generated by a loop antenna.

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Jesus Perez
University of California Los Angeles

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