

Abstract Submitted
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A Study of Laser and Electron Beam Interactions for Plasma Wave Diagnostic Experiments R. WILLIAMS, A. BOWMAN, Florida A&M University — A low energy electron beam (5 to 50 keV), a CO₂ laser and a YAG laser are focused through a common interaction point, and the scattering of the electrons and photons is studied using various diagnostic devices. Experiments have been performed to study the effects of varying the temporal sequencing, intensity, spatial alignment and angular separation of the three pulsed beams. Information on the electron beam is gained by studying the scattering of the laser and vice versa. A numerical model was developed in order to help design and interpret the experiment. Experiments to follow will involve adding a plasma at the common interaction point and exciting plasma waves, and using the lasers and electron beam as plasma wave diagnostics.

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