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Mode conversion at density irregularities in the LAPD KRISTOPHER KERSTEN, CYNTHIA CATTELL, University of Minnesota, BART VAN COMPERNOLLE, WALTER GEKELMAN, PAT PRIBYL, STEVE VINCENA, UCLA — Mode conversion of electrostatic plasma oscillations to electromagnetic radiation is commonly observed in space plasmas as Type II and III radio bursts. Much theoretical work has addressed the phenomenon, but due to the transient nature and generation location of the bursts, experimental verification via *in situ* observation has proved difficult. The Large Plasma Device (LAPD) provides a reproducible plasma environment that can be tailored for the study of space plasma phenomena. A highly configurable axial magnetic field and flexible diagnostics make the device well suited for the study of plasma instabilities at density gradients. We present preliminary results of mode conversion studies performed at the LAPD. The studies employed an electron beam source configured to drive Langmuir waves towards high density plasma near the cathode discharge. Internal floating potential probes show the expected plasma oscillations ahead of the beam cathode, and external microwave antenna signals reveal a strong band of radiation near the plasma frequency that persists into the low density plasma afterglow.

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