

Abstract Submitted
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Simultaneous existence of Kelvin Helmholtz and Drift wave Instabilities in IMPED P.K. CHATTOPADHYAY, SAYAK BOSE, J. GHOSH, Y.C. SAXENA, Institute for Plasma Research — The Kelvin-Helmholtz (KH) and drift wave instabilities are observed to be existing simultaneously in the **Inverse Mirror Plasma Experimental Device (IMPED)**. Further, the generation of side-bands are also observed due to mode coupling of Kelvin-Helmholtz and drift wave instability. In IMPED, magnetized plasma is produced using a multi-filamentary source of much larger diameter located in the low magnetic field region followed by long uniform plasma column in the main chamber with uniform high magnetic field. The uniqueness of IMPED [1] enables the radial profiles of plasma density and temperature to be changed by varying the ratio of the magnetic field in the source and in the main chamber. The instabilities are identified by measuring the wavelength and radial profiles of density, temperature and plasma potential. The evolution of the asymmetry of the side-bands is studied for different radial profiles of density and temperature. Experimental results describing the co-existence of interacting KH and drift instabilities will be presented.

[1] Bose et al. Rev. Sci. Instrum. 86, 063501 (2015).

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