

Abstract Submitted
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Imaging Measurements of Plasma Fluctuations in a Multi-Instability Regime¹ ATIT BASHYAL, MUHAMMAD MUJTABA, Earlham College, SAIKAT CHAKRABORTY THAKUR , GEORGE TYNAN, University of California, San Diego, ADAM LIGHT², Earlham College — The purpose of this research is to look for signatures of certain instabilities using visible light emitted from a cylindrical argon plasma column. The Controlled Shear Decorrelation Experiment (CSDX) was built to demonstrate drift-wave/shear-flow interaction, but recent work indicates that multiple instabilities emerge as the background magnetic field is increased. Visible light from ArI and ArII line emission is collected at high frame rates using a fast digital camera. The imaging data is used to construct plots of spectral density against frequency and wavenumber. These "dispersion plots" can be compared to theoretical dispersion curves to make a tentative identification of the active instabilities. We present here the radial localization of various fluctuations, as well as progress on identifying the underlying instabilities.

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²Present address: Swarthmore College, Swarthmore, PA 19081

Adam Light
Earlham College

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