

Abstract Submitted
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Investigation of Ion-Ion Two-Stream Instabilities in the Presheath RYAN HOOD, FRED SKIFF, SCOTT BAALRUD, ROBERT MERLINO, University of Iowa — Ion velocity distribution functions (IVDF) have been measured for both argon and xenon in an experiment to investigate ion-ion two stream instabilities and their effect on ion flow velocities near sheaths. The device is a multidipole hot cathode discharge operated in a mixture of argon and xenon. IVDF data from Ar II and Xe II are collected simultaneously using optical tagging and laser induced fluorescence (LIF) in the presheath region of a negatively biased electrode. Fluctuations of the ion distribution functions will be observed to search for evidence of ion-ion two-stream instability. This instability is thought to be responsible for anomalous friction causing a merging of ion speeds near the sheath edge. Experiment updates and new results will be presented.

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