

Abstract Submitted
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Ion distribution functions in magnetized rf Argon plasma presheaths¹ M. UMAIR SIDDIQUI, NOAH HERSHKOWITZ, University of Wisconsin - Madison — A helicon plasma source was operated in a low power inductive mode to create a magnetized Argon plasma with densities of $10^{11} - 10^{12} \text{ cm}^{-3}$ and electron temperatures from 3 – 5 eV. A grounded plate oriented perpendicular to the axial magnetic field was placed 2.5 antenna lengths downstream from the near edge of the rf antenna. Using laser-induced fluorescence, the ion velocity distribution functions were investigated along the axis of the chamber in the bulk plasma and in the plate's presheath. Bimodal and non-Maxwellian distribution functions were observed in the presheath, though not in the bulk plasma. In certain situations ion populations traveling in opposite directions were observed. In this work the authors investigate these phenomena as a function of neutral pressure, rf power and axial magnetic field strength.

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M. Umair Siddiqui
University of Wisconsin - Madison

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