

Abstract Submitted
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Studies of Electrostatic Instabilities During Double Layer Formation Using Time-Resolved LIF¹ JERRY CARR, West Virginia University, SAIKAT CHAKRABORTY THAKUR, ALEX HANSEN, DUSTIN MCCARREN, EARL SCIME, WEST VIRGINIA UNIVERSITY PLASMA PHYSICS TEAM — Previous time resolved laser induced fluorescence (LIF) measurements of the parallel ion velocity distribution function (ivdf) in expanding, helicon plasma demonstrated a possible correlation between beam and bulk ion populations and electrostatic fluctuations. For a strong mirror ratio, where the formation and collapse of a beam population is observed, the correlation between fluctuations in the ion populations and the electrostatic fluctuations are strong. For a weak mirror ratio, the beam is less correlated with the electrostatic fluctuations than the bulk ion population and the beam persists throughout the discharge. We present results from detailed study of the effects of varying the mirror ratio and rf frequency in the source.

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Jerry Carr
West Virginia University

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