

Abstract Submitted
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Experimental verification of the Bohm criterion for two species plasmas¹ NOAH HERSHKOWITZ, University of Wisconsin-Madison, LUTFI OKSUZ, Suleyman Demirel University, Turkey, DONGSOO LEE, University of Wisconsin-Madison — Ion acoustic wave (IAW) phase velocities are measured near the sheath/presheath boundary in weakly collisional argon/xenon plasmas. Wave profiles vs. position are measured using a boxcar averager with a gate of 30 nsec and CW excitation. Variable gate delays allow measurement of details of the wave close to the boundary. It is shown that the phase velocity at the presheath/sheath boundary is approximately twice the phase velocity in the bulk plasma for mixture and single species plasmas. This indicates each ion species drift velocity at the boundary is equal to the IAW phase velocity in the bulk plasma. This result is independent of relative ion concentration.

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