

Abstract Submitted  
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**Measurements and modeling of radial electric field and bootstrap flows in HSX**<sup>1</sup> S. T. A. KUMAR, T. J. DOBBINS, W. GOODMAN, J. N. TALMADGE, F. S. B. ANDERSON, K. M. LIKIN, D. T. ANDERSON, UW-Madison, M. LANDREMAN, University of Maryland — Counter-streaming Pfirsch-Schlüter (PS) parallel ion flows have been measured in HSX using charge exchange recombination spectroscopy. This method has provided an improved measurement of the radial electric field and ion bootstrap flows in the core of the plasma. The magnitudes of the experimentally measured radial electric field and ion bootstrap flows do not demonstrate the neoclassical features calculated with the PENTA code; the measured electric field values agrees with ion-root solution and the measured ion bootstrap flows agree with the electron-root solution. Several approaches have been undertaken recently to understand this discrepancy, for example, using a biased electrode to look for the helical ion resonance and improvements in the neoclassical calculation. Recent advances in measurements and modeling are presented.

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