

Abstract Submitted  
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**Comparison of neoclassical flow theory with CXRS measurements for the H-mode pedestal on Alcator C-Mod**<sup>1</sup> KENNETH MARR, BRUCE LIPSCHULTZ, RACHAEL MCDERMOTT, PETER CATTO, PSFC, ANDREI SIMAKOV, LANL — Neoclassical theory, applied in the Pfirsch-Schluter regime to the plasma edge, describes poloidal (and toroidal) flow on a flux surface. Using measured pressure gradients we calculate low-field side poloidal pedestal flow profiles and compare them with flow profiles derived from the CXRS diagnostics on Alcator C-Mod. Given low- and high-field edge velocity measurements we can also calculate the ratio of impurity densities in those regions. The calculated radial profile of poloidal velocity exhibits the same strong peaking (shape and magnitude) in the region of steep gradients as seen in the measured profiles. Terms based on the electric field in the toroidal flow calculation are oppositely directed from the gradient terms, resulting in flatter flow profiles. Density calculations show an in-out asymmetry of up to a factor of 4 between the high- and low-field sides of the plasma with the effect strongest in the steep gradient region.

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