

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

A study of poloidal asymmetries in the pedestal region R.M. CHURCHILL, B. LIPSCHULTZ, S. LISGO, F. REIMOLD, J. GOLDSTEIN, AL-CATOR C-MOD TEAM TEAM — Simultaneous CXRS measurements of boron density, velocity, and temperature in the pedestal region ($0.8 < r/a < 1.05$) at the low- and high-field sides (LFS and HFS) of Alcator C-Mod allow studies of variations in boron density and total velocity on a flux surface. While previous studies used different neutral sources (a 50keV hydrogen neutral beam at the LFS and a thermal D2 gas puff at the HFS) to localize CXRS measurements we have recently expanded our diagnostic set to allow thermal gas CXRS at both locations, thus removing uncertainties due to different measurement techniques and cross-section. We have also upgraded our modelling capability to utilize the DIVIMP code, which uses the plasma-neutral code combination of OSM-EIRENE to determine the local neutral density. Comparisons between CXRS methods using different neutral sources will be shown as well as an exploration of whether the constants $K(\psi)$ and $\omega(\psi)$ in the description of $\mathbf{V} = \frac{\mathbf{K}(\psi)}{\mathbf{n}}\mathbf{B} + \omega(\psi)\mathbf{R}^2\nabla\phi$ are constant on a flux surface as typically assumed. The above comparisons will be shown for a variety of H-mode and I-mode plasmas. Supported by USDoE award DE-FC02-99ER54512.

R.M Churchill
MIT Plasma Science and Fusion Center

Date submitted: 26 Jul 2011

Electronic form version 1.4