Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

The Instrumental Function of the new X-ray Imaging Crystal Spectrometer on Alcator C-Mod[1] M. BITTER, K.W. HILL, D. MIKKELSON, S. SCOTT, Princeton University, A. INCE-CUSHMAN, M. REINKE, J.E. RICE, MIT-PSFC, P. BEIERSDORFER, M.F. GU, Lawrence Livermore National Laboratory — A new high-resolution X-ray imaging crystal spectrometer was installed on Alcator C-Mod to determine the radial profiles of the ion temperature and toroidal plasma rotation velocity from the Doppler widths and Doppler shifts of spectral lines from He- and H-like argon. The instrument consists of two spherically bent crystals and high count rate, semi-conductor diode arrays, so-called PILATUS II detector modules, which are arranged in the Johann configuration. The poster will present analytical and numerical calculations of the instrumental function and the observed spectral line profiles. The results obtained from these calculations will be compared with the experimental data.

[1]supported by DOE contracts: DE-AC02-76CHO3073, DE-FC02-99ER54512, W-7405-Eng-48, and DOE Initiative for Plasma Diagnostic Developments, Contract-1083.

Manfred Bitter
Princeton University

Date submitted: 22 Jul 2007 Electronic form version 1.4