

Abstract Submitted
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First Results From The New High Resolution Imaging X-ray Crystal Spectrometer On Alcator C-Mod ALEXANDER INCE-CUSHMAN, JOHN RICE, MIT, MANFRED BITTER, PPPL, MATHEW REINKE, MIT, KENNETH HILL, STEVEN SCOTT, PPPL — In an effort to improve the diagnostic capabilities for measuring plasma rotation on Alcator C-Mod, an imaging x-ray spectrometer has been designed and installed. This instrument utilizes a spherically bent quartz crystal and a set of 2D x-ray detectors to image the entire plasma cross section with a spectral resolving power of approximately 10,000 with vertical spatial resolution of about 1cm. Line emission from highly ionized states of argon and molybdenum are measured at frame rates up to 200Hz. Using spectral tomographic techniques the line integrated spectra can be inverted to determine impurity density, velocity and temperature profiles. An overview of the instrument, analysis and example profiles are presented. Work supported by USDoE Coop. Agree. No. DE-FC02-99ER54512 & DE-AC02-76CH03073.

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