

Abstract Submitted
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Development of the Alcator C-Mod FIR Polarimeter¹ P. XU, J.H. IRBY, J. BOSCO, A. KANOJIA, R. LECCACORVI, E.S. MARMAR, P. MICHAEL, R. MURRAY, R. VIEIRA, S. WOLFE, MIT, D.L. BROWER, W.X. DING, UCLA, D.K. MANSFIELD, PPPL — A multi-chord FIR polarimetry diagnostic is being developed for the Alcator C-Mod Tokamak to be used to determine the q-profile and to study density and magnetic field fluctuations. This poloidally viewing system using retro-reflectors on the inner wall will have geometry and fields similar to those planned for ITER. The optical layout will be discussed, as well as simulations of the expected Faraday and Cotton-Mouton signal levels, and the plans to integrate these data into EFIT. Details of the hardware being developed and procured including the FIR laser system, the laser power and frequency control system, optical components, detectors, beam position feedback system, and inner wall retro-reflectors and shutter will be presented.

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James Irby
MIT

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