

Abstract Submitted  
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**The Alcator C-Mod FIR Polarimeter**<sup>1</sup> P. XU, J.H. IRBY, J. BOSCO, A. KANOJIA, R. LECCACORVI, E.S. MARMAR, P. MICHAEL, R. MURRAY, Y. ROKHMAN, R. VIEIRA, 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 full optical layout will be discussed, as well as simulations of the expected Faraday and Cotton-Mouton signal levels. Bench test results from a single chord system including all optical components will be presented, and preliminary experimental results from C-Mod will be compared with simulated Faraday rotation angle calculated using Thomson Scattering density profiles and EFIT reconstructions of actual C-Mod plasmas.

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