

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

**First Results From the Alcator C-Mod Lower Hybrid Experiment**<sup>1</sup> RONALD PARKER, NILS BASSE, MIT PSFC, STEFANO BERNABEI, NEVELL GREENOUGH, PPPL, MONTGOMERY GRIMES, DAVID GWINN, MIT PSFC, JOEL HOSEA, PPPL, DAVID JOHNSON, ATMA KANOJIA, BRIAN LABOMBARD, JOHN LIPTAC, DAVID TERRY, JAMES TERRY, GREGORY WALLACE, MIT PSFC, RANDY WILSON, PPPL — A lower hybrid system operating at 4.6 GHz and capable of 3 MW source power has been installed on Alcator C-Mod. The grill facing the plasma consists of 4 rows of 24 waveguides. Electronic control of the amplitude and phase of the 12 klystrons supplying the RF power enables the launcher's  $n_{||}$  spectrum to be dynamically controlled over a wide range with a time response of 1 ms. Since the deposition of current depends on  $n_{||}$  as well as the temperature profile, the spatial distribution of the driven current can be varied with the same time response. Detection of fast electron Bremsstrahlung is the primary means of monitoring the driven current profile. Initial measurements at the 100 kW power level show that reflection coefficients as low as 7% are obtained at optimal phasing and density at the grill mouth. Comparison of these results with modeling predictions will be presented in a companion paper.

<sup>1</sup>Work supported by DOE

Ronald Parker  
MIT PSFC

Date submitted: 26 Jul 2005

Electronic form version 1.4