

Lower Hybrid Coupling Experiments on Alcator C-Mod*

G. Wallace,¹ P. Bonoli,¹ A. Parisot,¹ R. Parker,¹ A. Schmidt,¹
J.R. Wilson,² and the Alcator C-Mod Team

¹*MIT Plasma Science and Fusion Center, Cambridge USA*

²*Princeton Plasma Physics Laboratory, Princeton USA*

The Alcator C-Mod Lower Hybrid Current Drive experiment launches RF waves at 4.6 GHz via 4 rows of 22 phased waveguides. Forward and reflected power is measured with 156 directional couplers in the launcher structure. Langmuir probes mounted to the front of the antenna monitor density at the plasma edge and act as RF probes for the observation of parametric decay instability. Measurements of the coupling of lower hybrid waves have been performed at power levels approaching 1 MW. Edge density, launched n_{\parallel} spectrum, and plasma shape have been adjusted to optimize coupling in L-mode plasmas. Experimentally observed coupling results will be compared to simulations from the Brambilla code (M. Brambilla, *Nuc. Fus.*, **16**:47-54, 1976.).

*Work supported by US DOE awards DE-FC02-99ER54512 and DE-AC02-76CH03073.