

Abstract Submitted
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Lower Hybrid Coupling Experiments on Alcator C-Mod¹ G.M. WALLACE, P.T. BONOLI, A.E. HUBBARD, Y. LIN, R.R. PARKER, A.E. SCHMIDT, MIT PSFC, C.E. KESSEL, J.R. WILSON, PPPL — The Alcator C-Mod Lower Hybrid launcher couples RF waves at 4.6 GHz via 4 rows of 22 phased waveguides. Directional couplers in the launcher structure measure forward and reflected power in each waveguide, while six Langmuir probes mounted to the front of the antenna grill monitor density at the plasma edge and act as RF probes for the observation of parametric decay. Parametric decay spectra grow exponentially with line averaged electron density in the regime $\omega = 3-6 \omega_{lh}$. Measurements of the coupling of lower hybrid waves have been performed at power levels approaching 1 MW. Edge density, launched $n_{||}$ spectrum, and plasma shape have been adjusted to optimize coupling in Ohmic and ICRF heated L- and H-mode plasmas. Preliminary results show that deleterious effects of ICRF on LH coupling are reduced following boronization, particularly in H-mode. Experimentally observed coupling results will be compared to simulations from a coupling code (M. Brambilla, Nuc. Fus., 16:47-54, 1976.).

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