

Abstract Submitted
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Experiments with Lower Hybrid Current Drive on Alcator C-Mod¹ J.R. WILSON, C. KESSEL, C.K. PHILLIPS, S. SCOTT, E. VALEO, PPPL, R. PARKER, P.T. BONOLI, A.E. HUBBARD, J. KO, M. PORKOLAB, A.E. SCHMIDT, G. WALLACE, J. WRIGHT, MIT — In 2006 a new 4.6 GHz lower hybrid system was commissioned on Alcator C-Mod, demonstrating the capability of the system in L-mode plasmas. In 2007 the studies have continued on the basic properties of the wave coupling, absorption and current drive as well as those demonstrating the applicability of LHCD to advanced tokamak plasma conditions. In particular, studies of the formation and decay of the fast electron tail have been performed by utilizing fast modulation of the rf power, and coupling studies in H-mode and ICRF dominated plasmas have been performed, yielding conditions under which combined LH and ICRF operation is possible. Operation over a wider range of plasma density and launcher phase has been performed. Injection of LH power in the current ramp phase of the discharge has delayed the onset of the sawtooth oscillation by up to 0.4 s even at modest, ~ 400 kW, power levels. Measurements with MSE have been made that indicate a broadening of the current profile and comparison of these with the x-ray emission, non-thermal ECE and simulations will be presented.

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James Wilson
princeton plasma Physics Laboratory

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