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Overview of LHCD Experiments on Alcator C-Mod[1] J.R. WILSON, C. KESSEL, S. SCOTT, PPPL, R.R. PARKER, P. BONOLI, A. HUBBARD, J. HUGHES, A. INCE-CUSHMAN, J. KO, O. MENEGHINI, M. PORKOLAB, J. RICE, A. SCHMIDT, S. SHIRAIWA, G. WALLACE, J. WRIGHT, MIT PSFC — LHCD on Alcator C-Mod is being used in plasmas with parameters similar to those expected on ITER. LHCD experiments have also produced intriguing results related to momentum transport and edge pedestal physics. Quantitative comparisons between local measurements and theory/simulation have been performed, confirming the off-axis localization of the current drive, as well as its magnitude and location dependence on the launched $n_{||}$ spectrum and electron temperature. Applying LHCD during the current ramp saves volt-seconds and delays the peaking of the current profile. Simultaneous operation with ICRF has been achieved utilizing antennas not closely magnetically connected to the LH launcher. Counter current toroidal rotation during LHCD has been observed in both L and H-mode plasmas. In H-mode plasmas the edge pedestal collisionality is reduced even though the overall pressure profile of the pedestal is unaffected.

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