

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Experiments on the Alcator C-Mod Tokamak Utilizing a Novel Lower Hybrid Wave Launcher¹ J.R. WILSON, PPPL, P. BONOLI, O. MENEGHINI, R.R. PARKER, M. PORKOLAB, A.E. SCHMIDT, S. SHIRAIWA, G. WALLACE, MIT-PSFC — A new, novel launcher for coupling rf power into lower hybrid waves has been installed on the Alcator C-Mod tokamak. The launcher is composed of 4 rows of 16 active waveguides. This launcher retains the full phase flexibility of the original launcher ($1 < |n_{||}| < 4$) with high directivity but significantly reduces ohmic power losses in the launching structure. A novel 4-way vertical power splitter allows recirculation of reflected power. The launcher achieved 700 kW net power coupled for 0.5 s on the second day of operation without any conditioning. Added launcher diagnostics will aid in exploring the previously observed density limit and help determine the expected performance of the launcher in advanced tokamak discharge parameters. Results on operation, including current drive efficiency, current profile modification and plasma rotation effects in a variety of plasma configurations will be presented.

¹This work is supported by the US DOE awards DE-FC02-99ER54512 and DE-AC02-09CH11466.

James Wilson
Princeton Plasma Physics Laboratory

Date submitted: 17 Jul 2010

Electronic form version 1.4