

Abstract Submitted
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Parametric Survey of ITB Plasmas in Alcator C-Mod¹ C.L. FIORE, P.T. BONOLI, A.E. HUBBARD, M.J. GREENWALD, E.S. MARMAR, J.E. RICE, S.J. WUKITCH, K. ZHUROVICH, MIT-PSFC — Internal transport barrier plasmas have been created in Alcator C-Mod using off-axis ICRF heating in target plasmas using ICRF frequencies of 50, 70 and 80 MHz at magnetic fields ranging from 2.8 T to 6.4 T and with plasma currents between 0.7 and 1.2 MA. These ITBs are marked by highly peaked density and pressure profiles. They rely on a reduction of particle and thermal flux in the barrier region which then allows the neoclassical pinch to peak the central density while maintaining the central temperature. Although these ITBs are obtained frequently, there remains uncertainty in what qualities of the target plasma parameters will result in obtaining reliable and predictable ITB formation. The object of this study is to examine the characteristics of these target plasmas, especially with respect to input power, density, impurity content, and shaping. The results from the parametric examination will be presented along with results of recent ITB C-Mod operation.

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