Abstract Submitted
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Modification of H-mode threshold power via the variation of outer strike point location Y. MA, J.W. HUGHES, R.M. CHURCHILL, B. LIPSCHULTZ, B. LABOMBARD, C. LAU, E.S. MARMAR, ALCATOR C-MOD TEAM — In a recent Alcator C-Mod experiment performed in B_T=5.4T, I_p=0.9MA, $< n_e >$=1.3-1.6x10^{20}m^{-3}, lower single null plasmas, the required power for H-mode access (P_{th}) was found to be greatly reduced as the outer strike point was lowered along the vertical plate and onto the horizontal floor of the divertor. The reduction can be as much as a factor of 3. The P_{th} is found to primarily correlate with the poloidal distance between X-point and the outer strike point, or outer leg length (OLL), such that the magnitudes of P_{th} generally decrease with increased OLL. Despite the large variation ofP_{th}, the electron temperature (T_e) and density (n_e) profiles inside the separatrix are seen to be not dramatically different. The roles of neutrals, ion temperature and rotation in the plasma edge and SOL, and SOL ne profiles will be assessed in an attempt to reveal the reason for the experimental observations. Supported by US DoE Award DE-FC02-99-ER54512.

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