

Abstract Submitted
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Experimental study of plasma shaping effect in Alcator C-Mod Ohmic low confinement regime* Y. MA, A. HUBBARD, S. WOLFE, C. FIORE, M. GREENWALD, M. PORKOLAB, J. RICE, A. DOMINGUEZ, T. GOLFINOPOULOS, N. TSUJII, J. HUGHES, E. MARMAR, ALCATOR C-MOD TEAM — Previous studies on TCV tokamak suggest that shaping parameters (κ , δ) could play a role in the plasma confinement. This study presents the experimental observations in Alcator C-Mod Ohmic L-mode plasmas at different line averaged densities (0.4~1.0 n20) as the shaping parameters being scanned. The shape of T_e , T_i , n_e profiles measured from Thomson scattering, ECE and X-ray spectroscopy diagnostics are compared to extract the degree of profile similarities in these discharges. Sawtooth activities (intensity, period, inversion radius) are characterized from ECE measurements in various shaping configurations. Spectra of plasma fluctuations are monitored by PCI, O-mode reflectometers and magnetic probes. Local particle and heat transport are calculated from 2 dimensional power balance analysis code TRANSP using experimental measurements and to be compared with global confinement scaling and anomalous transport models (e.g. TGLF). Perturbative transport studies will be explored in the future studies. *Supported by USDoE award DE-FC02-99ER54512

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