

Abstract Submitted
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Electron thermal transport studies with improved n_e/T_e profiles measured by Core Thomson scattering diagnostic on Alcator C-Mod¹
YUNXING MA, JERRY HUGHES, DARIN ERNST, MARTIN GREENWALD, JOHN RICE, YURI PODPALY, MIT PSFC — The Core Thomson scattering (TS) diagnostic on Alcator C-Mod has been upgraded to provide n_e and T_e measurements with improved radial spatial resolution up to 1cm ($r/a \sim 0.05$) in the range of $r/a < 0.6$. We present the results from experimental studies of electron thermal transport with the improved n_e and T_e profiles measured by TS and T_i profiles from High Resolution X-ray Spectrometer (HIREX) in Ohmic and RF heated plasma discharges. We also compare the calculated thermal diffusivities from profiles fitted using different combinations of measurements. The purpose of this study is to investigate how the transport coefficients are sensitive to the input profiles. Preliminary results from gyrokinetic and gyrofluid analysis are also presented. Continued profile sensitivity studies and detailed gyrokinetic analysis will be performed in the future.

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