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Ion temperature in Alcator C-Mod H-mode discharges with ELM's and with the quasi-coherent (QC) mode[1] IGOR O. BESPAMYATNOV, W.L. ROWAN, R.V. BRAVENEC, Fusion Research Center, The University of Texas at Austin, D.F. BEALS, R.S. GRANETZ, A.M. HUBBARD, R.M. MCDERMOTT, J.L. TERRY, MIT PSFC — H-mode regimes with discrete ELM's may offer the advantage of steady state but possibly coupled with the disadvantage of enhanced divertor erosion. On C-Mod, the enhanced D-alpha (EDA) H-mode regime achieves steady state through increased particle transport due to a high m and n QC mode rather than via discrete ELM's. Recently, a robust H-mode with discrete ELM's (possibly type 1) was produced in C-Mod during JFT-2M similarity studies. This new C-Mod regime offers the possibility of comparing ion temperature near the pedestal in steady state H-mode discharges where particle transport is increased with the commonly observed QC mode or with ELM's. Thermal transport analysis (TRANSP) will be included in the comparison. The data presented is from analysis of ambient spectra and charge exchange recombination spectroscopy (CXRS). CXRS analysis using a DNB will be discussed in detail, including expected uncertainties and limits on ion temperature, rotation, and density. A long pulse, high current beam was recently installed and is now commissioning on C-Mod. Expected improvements in CXRS will be discussed.

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