

Abstract Submitted  
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**Comparison of sawtooth heat pulses across confinement regimes in Alcator C-Mod plasmas** E.M. EDLUND, E. FREDRICKSON, Princeton Plasma Physics Laboratory, C. FIORE, C. GAO, J.E. RICE, A.E. WHITE, S.J. WUKITCH, Massachusetts Institute of Technology, M. BROOKMAN, P.E. PHILLIPS, W. ROWAN, University of Texas at Austin, N.T. HOWARD, Oak Ridge Institute for Science and Education, AND ALCATOR C-MOD TEAM — Prior studies of heat pulses from sawteeth in TFTR and DIII-D experiments found that the thermal conductivities derived from heat pulses ( $\chi^{hp}$ ) are increased by a factor of a few to an order of magnitude over the thermal conductivities derived from power balance ( $\chi^{pb}$ ) and suggest a strong dependence of  $\chi$  on the local temperature gradient [1]. This may have important consequences for turbulence modeling that ignores the role of sawteeth by using profiles representative of the mean. In this study, we investigate Alcator C-Mod experiments and apply methods similar to those used in ref. [1] to model the evolution of heat pulses propagating outward from the core. Calculations of thermal conductivities derived from sawtooth heat pulses will be presented as a function of density and confinement regime and compared with those derived from power balance. This work is supported by USDoE awards DE-FC02-99ER54512, DE-AC02-09CH11466 and DE-FG03-96ER-54373.

[1] E. Fredrickson *et al.*, Physics of Plasmas **7**, 5051 (2000).

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