

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

**Study of Type I ELM Systematics Using Soft X-ray Analysis on NSTX**<sup>1</sup> K. TRITZ, D. STUTMAN, L. DELGADO-APARICIO, M. FINKENTHAL, The Johns Hopkins University, R. BELL, R. KAITA, S. KAYE, B. LEBLANC, L. ROQUEMORE, PPPL, R. MAINGI, ORNL, S. SABBAGH, Columbia University, THE NSTX TEAM — NSTX plasmas exhibit a range of ELM behavior during H-mode discharges, including relatively large discrete phenomena classified as ‘Type I’ ELMs. These ELMs can cause a reduction in the plasma stored energy of up to 15% and can perturb the electron temperature profile by triggering a cold pulse that propagates radially inward on timescales of hundreds of microseconds. However, different operating regimes can exhibit smaller ‘Type I’ ELMs which have a much smaller effect on the stored energy and electron temperature profile. The soft X-ray system on NSTX has the capability to examine the fast temperature perturbations and measure the propagation of these events via a ‘multi-color’ technique which uses various X-ray filters to measure the incident X-ray spectrum with different energy cut-off thresholds. This technique is used to study the variety of ‘Type I’ ELM behavior and relate the differences to NSTX plasma conditions.

<sup>1</sup>Work supported by US DoE grant DE-FG02-99ER5452

Kevin Tritz  
The Johns Hopkins University

Date submitted: 22 Jul 2005

Electronic form version 1.4