

Abstract Submitted  
for the DPP07 Meeting of  
The American Physical Society

**High temperature transient heating experiments on C in a Be seeded plasma in PISCES B.**<sup>1</sup> J. HANNA, D. NISHIJIMA, R.P. DOERNER, M. BALDWIN, K.R. UMSTADTER, R. SERADARIAN, R. HERNANDEZ, UCSD, R. PUGNO, IPP — An experimental investigation of the effects of transient heating on Be films on C substrates in deuterium plasmas has been conducted in PISCES-B. It has been shown previously that Be film growth on C can form carbide layers that reduce the chemical erosion of C during deuterium ion bombardment. Results from transient heating up to 1200°C have also been reported. In this presentation, results on the chemical erosion and on deuterium retention in C targets with heat pulses up to 2000°C will be presented. A scaling expression for chemical erosion suppression due to Be<sub>2</sub>C formation developed previously will be extended to include transients with varying peak surface temperature and duty cycle using an integrated time-temperature, with a temperature range of 300 to 2000°C.

<sup>1</sup>This work was supported by grant DE-FG03-95ER-54301 from the US DoE.

Jeremy Hanna  
University of California, San Diego

Date submitted: 21 Jul 2007

Electronic form version 1.4