

Abstract Submitted  
for the DPP02 Meeting of  
The American Physical Society

Sorting Category: 5.6.2 (Experimental)

**Effect of Magnetic Balance and Strike Point Location  
on Target Plate Particle Flux and Particle Removal in DIII-D<sup>1</sup>**

J.G. WATKINS, SNL, T.W. PETRIE, T.C. LUCE, M.A. MAHDAVI, GA, C.J. LASNIER, S.L. ALLEN, M.E. FENSTERMACHER, LLNL, R. MAINGI, PPPL, L.W. OWEN, M.R. WADE, ORNL — An array of 28 Langmuir probes in the upper divertor and 26 probes in the lower divertor of DIII-D were used to monitor the particle flux distribution and plasma density and temperature during experiments shifting the magnetic balance, strike point location, and toroidal field direction. These fluxes represent the neutral sources fueling the core plasma and the divertor. Core fueling efficiency is influenced by the proximity of sources to the closed flux surfaces, the mean-free path for source neutrals, and particle sinks provided by pumping. Changes in the distribution of target plate particle flux are consistent with changes in  $E \times B$  flows in the private flux region. A factor of two increase in the ELM frequency was observed when changing the strikepoint location onto the dome or when changing the magnetic balance. This method of ELM control may be a useful new tool for controlling the core density.

<sup>1</sup>Work supported by US DOE Contracts DE-AC04-94AL85000, DE-AC03-99ER54463, W-7405-ENG-48, and DE-AC05-00OR22725.

- Prefer Oral Session  
 Prefer Poster Session

J.G. Watkins  
watkins@fusion.gat.com  
Sandia National Laboratories

Special instructions: Poster 29, Edge/Divertor/Transport

Date submitted: July 19, 2002

Electronic form version 1.4