Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Divertor Heat and Particle Fluxes During ELM Control Experiments[1] O. SCHMITZ, FZJ, M.W. JAKUBOWSKI, MPI, T.E. EVANS, M.J. SCHAFFER, W.P. WEST, GA, M.E. FENSTERMACHER, M. GROTH, C.J. LASNIER, LLNL, I. JOSEPH, R.A. MOYER, UCSD, B. UNTERBERG, H. FRERICHS, FZJ — In experiments exploring ELM suppression by resonant magnetic perturbation (RMP) as a technique for ITER, the manipulation of divertor heat and particle fluxes is of vital interest. To investigate these effects, a fast IR camera and CCD cameras equipped with D_α, CII or CIII interference filters were used during RMP ELM control experiments at DIII-D. In general, a splitting of the inner and outer divertor strike lines was observed. This is caused by splitting of the invariant separatrix manifolds that form magnetic footprints on the wall elements. Parallel particle and heat fluxes are transported along these field lines forming a characteristic pattern on the divertor target. The measured patterns are compared to magnetic footprints modeled with the TRIP3D code to identify the topology of the heat and particle flux channels. Based on that, the occurrence of complete ELM suppression is correlated to the measured and modeled target patterns.

[1]Supported by US DOE under DE-FC02-04ER54698, DE-FG02-04ER54758, and W-7405-ENG-48.

E.J. Strait
General Atomics

Date submitted: 23 Jul 2007 Electronic form version 1.4