Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Study of strike-point and flux-expansion control in diverted NSTX plasmas[1] HUA WANG, JONATHAN MENARD, Princeton Plasma Physics Laboratory — Tokamaks commonly use a poloidal divertor to tailor the trajectory and length of open magnetic field lines outside the main plasma volume. Optimization of the magnetic field configuration at the divertor is desirable to control the heat and particle flux to the material surfaces. Such optimization is important in NSTX, in the design of new divertor configuration for the proposed upgrade of NSTX, and for future Spherical Torus (ST) devices. In particular, simultaneous control of the strike point location and the flux expansion at the strike point is highly desirable to control the location and magnitude of peak heat and particle flux at the divertor target. The free-boundary equilibrium code ISOLVER is utilized and modified to assess the boundary shape implications of controlling the strike point location. The viability of simultaneous strike point and flux expansion control is also assessed.

[1]This work supported by DOE contract number DE-AC02-09CH11466

Hua Wang
Princeton Plasma Physics Laboratory

Date submitted: 16 Jul 2009 Electronic form version 1.4