Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Numerical Study of Poloidal Asymmetry of Fast Particle Density in JET NBI Heated Discharges T. BAKOWSKI[1], A.Y. PANKIN, G. BATEMAN, A.H. KRITZ, T. RAFIQ, Lehigh U., I. VOITSEKHOVITCH, UKAEA UK
— The poloidal asymmetry in the distribution of fast NBI deuterium ions, which has been observed in medium and high density JET discharges during trace tritium campaign, is investigated in simulations using the ASTRA integrated modeling code. The NUBEAM Neutral Beam Injection (NBI) Monte-Carlo package is used to follow the evolution of the fast particle distribution function for several JET discharges. Recent improvements to the interface between the ASTRA code and the NUBEAM package are described. The electron and ion NBI power deposition profiles, as well as the profiles for driven current densities, computed using the NUBEAM module in ASTRA, the NUBEAM module in TRANSP, and the NBI Fokker-Planck module in ASTRA, are compared. It is demonstrated that the poloidal asymmetry of the fast particle density disappears in discharges with low line average density. The effect of trapped particles on the fast ion poloidal asymmetry is investigated.

[1]Student at Stony Brook U. supported during the summer by National Science Foundation REU grant NSF PHY 0353620

G. Bateman
Lehigh U.

Date submitted: 18 Jul 2008 Electronic form version 1.4