

Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Initial measurements of beam ion profile in NSTX with Solid State Neutral Particle Analyzer Array D. LIU, W.W. HEIDBRINK, UC Irvine, D.S. DARROW, A.L. ROQUEMORE, S.S. MEDLEY, Princeton U. — The Solid State Neutral Particle Analyzer (SSNPA) array on the National Spherical Torus Experiment (NSTX) utilizes Si diodes coupled to fast digitizers to measure the energy distribution of charge exchange fast neutral particles (35~100KeV) at four fixed tangency radii (60, 90, 100, and 120cm) to obtain the corresponding beam ion profile. Noise reduction techniques required to operate in the tokamak environment and post-shot pulse height analysis (PHA) methods are described. The results have been compared with those on the scanning E//B type Neutral Particle Analyzer (NPA) and good agreement was achieved. The redistribution and loss of beam ions during MHD activity including sawteeth events and IRE's has been observed. An experiment to study redistribution caused by fishbone instabilities is planned. *Supported by U. S. DOE Contract DE-AC02-76CH03073*

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Date submitted: 22 Jul 2005

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