Neutral Beam Ion Confinement Measurements in NSTX

D. S. Darrow, S. S. Medley,

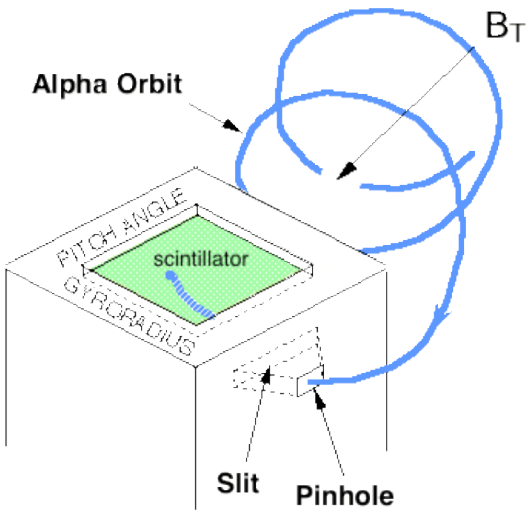
A. L. Roquemore (PPPL)

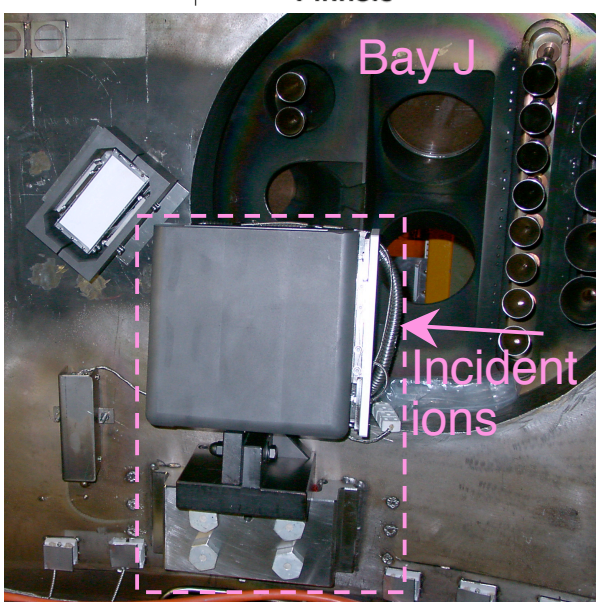
K. Shinohara (JAERI)

NSTX Research Forum

November 10-12, 2003

E & □ resolving loss diagnostic (sFLIP) operational for FY04





- Interesting issues:
  - Prompt loss
  - Nonadiabaticity (□)
  - MHD loss
  - HHFW tail & radial diffusion
- Experiment: loss variation vs
  - Source R_{tan}
  - I_p
  - Outer gap ($□_{outer}$)
  - E_r
- Piggyback with NPA XP?

Multi-sightline solid state NPA being built for FY04 campaign

- 4 sightlines with 0.5 m ≤ R_{tan} ≤ 1.2 m fabricated
- Si & C detectors will give simultaneous 4-point radial profile of NB neutrals vs t
- Complements EIIB NPA
- Want to measure MHD-induced NB ion radial transport
- XP: deliberately induce MHD (REs, fishbones, CAEs, NTMs, etc.) & measure $n_{NB}(r)$ before, during, & after MHD

K. Shinohara (JAERI)