

Research Forum



**Perspectives**  
**on**  
**Boundary Physics '03**  
**Research**

**H. W. Kugel**

# Planning Guidance



- **Baseline Milestone Guidance**

1. **Measure and analyze the dispersion of edge heat flux and assess the impact on plasma facing component requirements under high heating power in NSTX**

- **Five Plan Guidance**

- a) **The 5 Year IPPA Boundary Physics Objectives on Spherical Torus (3.2.1)**
- b) **The 5 Year IPPA Tokamak Boundary Physics Objectives (3.1.4)**
  - *Plasma Edge Physics (3.1.4.1)*
  - *Coupling Between Edge and Core Plasmas (3.1.4.2)*
  - *Plasma-wall Interaction (3.1.4.3)*

## Agenda for Boundary Physics ET, Breakout Sessions III & IV



**NSTX Research Forum, Boundary Physics ET, Breakout Sessions III & IV  
Thursday, September 12, 2002 (Director's Conf. Room)**

- 0830-0840 • Heat flux and particle flux scaling vs. heating power, density, and plasma current in NSTX - R. Maingi**
- 0840-0900 • Effect of grad-B drift direction on edge and divertor properties- R. Maingi**
- 0900-0910 • Edge turbulence control via wall biasing or edge fueling - S. Zweben**
- 0910-0920 • Divertor regimes for advanced NSTX plasmas - V. Soukhanovskii**
- 0920-0930 • Edge transport asymmetries (in-out sol and divertor)  
(magnetic configuration and plasma parameter scan) - V.Soukhanovskii**
- 0930-0940 • Development of mitigation scenarios for neon GDC - V. Soukhanovskii**
- 0940-1000 • Plasma fueling using lower dome gas injector (pre-requisite to divertor regimes XP) - V. Soukhanovskii**
- 1000-1010 • ALIST liquid surface module and NSTX boundary physics research - R. Kaita**
- 1010-1020 • Boron and Lithium pellet injection - H. Kugel**

## Agenda for Boundary Physics ET, Breakout Sessions III & IV (cont)



- 1020-1030 • TMB Fuelling for conditioning plasma surfaces & establishing low-z mantle - H. Kugel
- 1030-1040 • Pellet fueling scoping studies for NSTX - L. Baylor
- 1040-1100 • Quartz crystal deposition monitor experiments - C. Skinner
- 1100-1110 • Assessment of helium conditioning on confinement -C. Skinner
- 1120-1130 • Scanning of strike-point for flush-mounted Langmuir Probe characterization - C. Bush
- 1130-1140 • Establishing H-modes in NSTX with highly conditioned walls & low neutral influx - C. Bush
- 1140-1200 • Role of edge temperature ( $T_e$  and  $T_i$ ) in H-mode access - C. Bush
- 1200-1210 • Study of MARFES in the NSTX main chamber - C. Bush
- 1210-1220 • Development of improved analysis of non-local electron parallel heat transport in the NSTX divertor plasma - J.P. Matte,(INRS)
- 1220-1230 • Fast transport in NSTX / Spherical Torus Scape-Off-Layer - A. Pigarov
- 1230-1240 • Characterization of edge neutral pressures in NSTX ohmic & CHI discharges - R. Raman
- 1240-1300 • Characterization of the boundary layer and power flow to the divertor, XP 217, rev 2 - S. Paul
- 1300-1315 • Discussion