

## **NSTX Weekly Report (Sept. 24, 2004)**

For FY2004 Joule milestone: 18 weeks; programmatic goal: 20 weeks.  
Completed: 21.1 weeks producing 2460 plasmas (Aug. 5, 2004).

### **Department, Project, Program (M. Ono, M. Peng, M. Williams, E. Synakowski)**

- The week of September 20 - 24 was a busy one for the NSTX Research Team. Two major meetings were held. The NSTX Results Review took place on September 20 - 21. A total of 56 plenary presentations, including some from researchers off-site, were given by research team members. These talks highlighted research performed over the past year. Both experimental results from the recent run and theoretical advances that address the experimental research were discussed. This meeting formed the background for the NSTX Research Opportunities Forum, held September 22 - 24. At this meeting, the NSTX Team discussed research priorities for the upcoming campaign. The topical research discussions were characterized by a great number of strong and compelling proposals that far exceeded in number the expected number of run days for FY '05. The outlines of research plans were developed that reflected broad programmatic priorities. These plans are characterized by a strong collaborative component that takes advantage of the scientific value of inter-device comparisons. To this end, the NSTX program is grateful to have had representatives from the Alcator C-Mod (Earl Marmor), DIII-D (Dan Baker), and MAST (Brian Lloyd, via telephone) programs give presentations at the meeting on their programs and collaborative research opportunities as they saw them. This provided valuable background and input to the planning discussions. (E. Synakowski)
- S. Kubota (UCLA) attended the 10th EU-US Transport Task Force Workshop in Varenna, Italy, Sept. 6-9, and gave an oral presentation titled "Turbulence Radial Correlation Measurements in NSTX". C. Bush (ORNL) also presented a poster titled "Dynamics of Fluctuations during H-modes in NSTX" (S. Kubota)
- The following three candidate APS news release articles were submitted for initial review by a DPP APS committee: "Taming Plasma Outbursts to Help Reduce Heat Pulses in Fusion Chamber" (Contact: M. Peng), "Interactions of Energetic Ions and Alfvén Waves in NSTX", and "Anomalous ion heating and rotation during radio frequency heating observed in NSTX." (Contact: M. Ono) They will be posted on the NSTX web page shortly. These articles are aimed toward "general" audience. Your comments and suggestions are appreciated.  
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### **Engineering Operations (A. von Halle, C. Neumeyer)**

The NSTX outage continued this past week with the cleaning of the TF joint flag boxes, and the stoning and silver plating of the TF flag surfaces. A method of internally cutting the center column organ pipes was tested and the four organ pipes have been disconnected from the center stack casing. The installation of the Resistive Wall Mode error field coils continues and preparations for the in-house winding of the new PF1A coil are in progress. A center stack tile has been removed for a surface analysis to be performed by Argonne National Laboratory.

There are no NSTX test cell access restrictions this coming week. (A. von Halle)

### **Research Operations (M. Bell)**

#### Boundary Physics Operations (H. Kugel)

- The requisitioned FLR/Indigo IR camera was received.
- 2 Center Stack graphite tiles opposite the Bay K Lithium Pellet Injector were removed and sent to ANL (J.P. Allain) for surface analysis.