

## **NSTX Weekly Report (November 12, 2010)**

**FY 2011 NSTX plasma operations started on October 4, 2010**

**Planned Run Weeks: TBD**

**Run Weeks Completed: 4.21 run weeks and 839 plasma shots**

Members of the NSTX Team participated in the 52nd Annual Meeting of the Division of Plasma Physics of the American Physical Society in Chicago IL Nov 8-12, and presented 10 invited talks, 12 contributed talks and 48 contributed posters. The invited talks were: "Demonstration of Inductive Flux Saving by Transient CHI on NSTX" by R. Raman (U. Washington), "Progress Toward Stabilization of Low Internal Inductance Spherical Torus Plasmas in NSTX" by S. Sabbagh (Columbia U.), "Role of plasma edge region in global stability on NSTX" by J. Menard (PPPL), "Edge transport and turbulence reduction, and formation of ultra-wide pedestals with lithium coated PFCs in NSTX" by J. Canik (ORNL), "Taming the Plasma Material Interface with the 'Snowflake' Divertor in NSTX" by V. Soukhanovskii (LLNL), "Quiet periods, zonal flows, and blob formation in the edge turbulence of NSTX" by S. Zweben (PPPL), "Modification of divertor heat and particle flux profiles with 3-D fields in NSTX", by J-W. Ahn (ORNL), "Response of Tokamaks to Non-axisymmetric Magnetic Perturbations" by J-K. Park (PPPL), "Effects of Global Alfvén Eigenmodes on Electron Thermal Transport in NSTX" by K. Tritz (JHU), and "Numerical Modelling of NBI-driven sub-cyclotron frequency modes in NSTX" by E. Belova (PPPL). (M. Bell)

The NSTX researchers, Jon Menard (PPPL) and Steven Sabbagh (Columbia University), were elected as the 2010 Fellows of the American Physical Society. Jon Menard's citation reads, "For seminal magnetohydrodynamic optimization studies and for experimental contributions to understanding of equilibrium and stability of low aspect ratio tokamaks," and Steven Sabbagh's citation reads, "For leadership in advancing the understanding of magnetohydrodynamics equilibrium, stability, rotation damping and active feedback control of high-beta tokamak and low-aspect ratio tokamak plasmas." Congratulations to Jon and Steve!

The NSTX researcher, Jong-Kyu Park of PPPL was awarded the 2010 Marshall N. Rosenbluth Outstanding Doctoral Thesis Award at the APS-DPP meeting in Chicago. The Award was established to recognize exceptional young scientists who have performed original doctoral thesis research of outstanding scientific quality and achievement in the area of plasma physics. The award citation reads, "*For the development of perturbed equilibrium calculations and generalized toroidal viscosity models providing significantly improved understanding of the response of tokamak plasmas to three-dimensional magnetic field perturbations*". Jong-Kyu received his Ph.D. from the Plasma Physics Program in Princeton University in June 2009 on his doctoral thesis entitled "*Ideal Perturbed Equilibrium on Tokamaks*," and his thesis advisors were Allen Boozer and Jon Menard. Congratulations to Jong-Kyu! (J. Menard)

### **Engineering Operations (A. von Halle, C. Neumeier)**

The NSTX outage continued this past week with the completion of moist air purges of the torus and neutral beam-line, and the removal of the neutral beam to torus transition duct. The machine's upper umbrella lid has also been removed, and the removal of TF flex links for TF and

OH joint inspections is in progress. Training has been completed, permits arranged, and multi-hour air samples taken in preparation for the initial vessel entry planned for Monday morning for detailed post-run inspections and photos.

Access to the NSTX test cell will be available this coming week.