

NATIONAL SPHERICAL TORUS EXPERIMENT

FY2011 RESEARCH FORUM

Boundary Physics Topical Science Group Breakout Session

17 March 2011

Leader: Vlad Soukhanovskii (e-mail: vlad@llnl.gov)

Deputy: Ahmed Diallo (e-mail: adiallo@pppl.gov)

Theory & Modeling: Daren Stotler (e-mail: dstotler@pppl.gov)

Agenda

(Format: Presentation time, [Lead author], Title)

09:00 - 09:05 Agenda and Guidance

09:05 - 09:10 [R. Raman] Steady state discharges with LFS fueling.

09:10 - 09:20 [R. Maingi] Dependence of density profile modification, and pedestal_core performance on amount of lithium evaporated between discharges.
Reproduce medium triangularity Enhanced Pedestal H-mode Discharge.

09:20 - 09:25 [K. C. Lee] Turbulence and transport measurement on Enhanced Pedestal H-mode triggered by 3-D field.

09:25 - 09:30 [T. Gray] Achieving I-mode on NSTX.

09:30 - 09:45 [A. Diallo] Aspect Ratio Effects on the Pedestal Structure in ELMy discharges.
Effects of Triangularity and Toroidal field on the Pedestal Structure in ELMy H-mode.
Elongation Effects on the Pedestal Structure in ELMy H-mode.

09:45 - 09:50 [D. Battaglia] LH power threshold and H-mode pedestal height versus X-point height.

09:50 - 10:00 [D. Smith] Searching for EHOs in low triangularity plasmas with early RMP.
Assess pedestal_SOL fluctuations and poloidal flow fluctuations across LH transitions and ELMs.

10:00 - 10:15 [V. Soukhanovskii] Divertor heat flux mitigation with impurity seeding in high-performance discharges.
Snowflake divertor configuration studies in support of R11-3 and NSTX-U divertor options.
Development of early snowflake-minus configuration for impurity control.
Development and assessment of X-divertor configuration on NSTX.

10:15 - 10:20 [A. Loarte] Compatibility of Radiative Divertor Operation with High Confinement H-mode Plasmas.

10:20 - 10:25 [M. Jaworski] Divertor electron temperature and EEDF modification due to connection length modification.

10:25 - 10:30 [S. Kaye] L-H Threshold Power Study- Ramp-Up vs Steady Ip Phase.

10:30 - 10:35 [T. Gray] Scrape-off Layer Particle and Energy Transport with varying SOL Collisionality.

10:35 - 10:50 [H. Takahashi] Optimal Positioning of ELM Triggering Electrodes
Validation of SOLC-based ELM-triggering Model
Distinguishing between Two SOLC-Based ELM-Models Inter-Divertor Flux Tube and Homoclinic Tangle.

10:50 - 11:00 [A. Sontag] Edge oscillations during Type-V and ELM-free H-mod
Effect of toroidal flow shear on edge stability.

11:00 - 11:05 [T. Munst] Dynamics of Zonal Flow-Drift Wave System Preceding L-H Transition.

11:05 - 11:10 [A. Loarte] Access and sustainment of H-mode confinement in ramped phases of ITER scenarios.

11:10 - 11:15 [J. Clementson] Development of Spectroscopic ITER Divertor Diagnostics.

11:20 - 01:00 PM Discussion & Prioritizations.