

NATIONAL SPHERICAL TORUS EXPERIMENT UPGRADE

FY2015 RESEARCH FORUM

## **Divertor and Scrape-Off Layer Topical Science Group Breakout Session**

Wednesday, 25 February 2015

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

Deputy: Joon-Wook Ahn (e-mail: ahn@pppl.gov)

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

University representative: Oliver Schmitz (e-mail: oschmitz@wisc.edu)

### **Agenda**

**All times are EST**

#### **1:30PM**

Alberto Loarte

Divertor conditions and detachment characteristics in plasmas with 3-D fields

#### **1:35PM**

David Eldon

Detachment comparison study for Snowflake, X-divertor, Standard Divertor and long/short divertor leg

#### **1:40PM**

Roman Smirnov

Studies of low- and high-Z dust transport in NSTX-U

#### **1:45PM**

Gustavo Canal

Assessment of 3D field effects on the properties of the snowflake divertor

#### **1:50PM**

Kaifu Gan

Investigation of ELM heat flux footprints with the variation of ELM regime

#### **1:55PM**

Travis Gray

Heat flux and SOL width Scaling in NSTX-U

Relaxation of the interchange instability and effect on SOL width with Li wall conditioning

Relationship between  $\lambda_q$ , S and Connection Length

Effect of Lithium on SOL Power Balance

#### **2:10PM**

Stewart Zweben

Parallel Correlation of SOL Turbulence

**2:20PM**

Robert Hager

Relation between the midplane SOL pressure width and the divertor heat flux width

**2:25PM**

Egemen Kolemen

Compare alternative advanced divertor configurations: X-divertor, Snowflake  
SOL Width Scaling: Goldston's Heuristic Drift Model vs Critical Pressure Gradient Model  
S parameter under 3D perturbations

**2:40PM**

Jeremy Lore

Toroidal divertor flux deposition asymmetries due to localized gas injection

**2:45PM**

Oliver Schmitz

Obtain 2D divertor density image using lithium emission

**2:50PM**

John Canik

Distinguishing between 3d magnetic field structures and transport

**2:55PM**

Joon-Wook Ahn

Interaction of applied 3D fields with detachment  
Role of plasma response in the formation of lobe structures by 3D fields  
Performance optimization of divertor detachment

**3:10PM**

Vlad Soukhanovskii

Radiative divertor experiments  
Clarifying Snowflake divertor configuration physics  
Boundary diagnostic-optimized configuration (BDOC) for model comparisons.  
Initial NSTX-U edge characterization.  
Transport and radiation in the high flux expansion divertor configuration with cusp-like fields.

**3:25PM**

Daren Stotler

ENDD Midplane Neutral Density Profiles in NSTX-U

**3:30PM**

Mike Kotschenreuther

Testing advanced divertors on NSTX

**3:45PM**

Discussion of prioritization and run time allocation