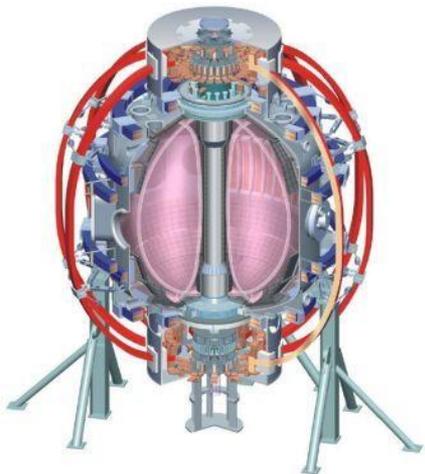


ITER Urgent Needs and Cross-Cutting TSG Parallel Session Overview

College W&M
Colorado Sch Mines
Columbia U
CompX
General Atomics
INEL
Johns Hopkins U
LANL
LLNL
Lodestar
MIT
Nova Photonics
New York U
Old Dominion U
ORNL
PPPL
PSI
Princeton U
Purdue U
SNL
Think Tank, Inc.
UC Davis
UC Irvine
UCLA
UCSD
U Colorado
U Illinois
U Maryland
U Rochester
U Washington
U Wisconsin

J. Menard (PPPL)
R. Maingi (ORNL)
A. Boozer (Columbia U.)

NSTX FY2011-12 Research Forum
Plenary Session
Tuesday March 15, 2011



Culham Sci Ctr
U St. Andrews
York U
Chubu U
Fukui U
Hiroshima U
Hyogo U
Kyoto U
Kyushu U
Kyushu Tokai U
NIFS
Niigata U
U Tokyo
JAEA
Hebrew U
Ioffe Inst
RRC Kurchatov Inst
TRINITY
KBSI
KAIST
POSTECH
ASIPP
ENEA, Frascati
CEA, Cadarache
IPP, Jülich
IPP, Garching
ASCR, Czech Rep
U Quebec

Research Priorities for ITER/CC TSG

- R11-4 - Investigate H-mode pedestal transport, turbulence, and stability response to 3D fields
 - Especially the influence of 3D fields on ion/impurity particle transport
- Investigate combinations of active techniques for reducing core impurity accumulation - especially in ELM-free H-mode
 - Explore the accessibility of reduced lithium evaporation scenarios with high plasma performance and intrinsic small ELMs for particle control
- Organize experiments and analysis in support of cryo-pump design for NSTX Upgrade
- Oversee ELM research to ensure a coherent research program and minimize experimental overlap
- Other cross-cutting research?

(thinning out the) Agenda

- 43 submissions to ITER-CC TSG - thanks for the interest!
 - But reviewing this number of proposals in 3-4hrs is intractable
- Several proposals moved to other TSGs based on content
- Several presentations will be skipped in ITER-CC since they will be presented elsewhere

Aaron Sontag	Effect of toroidal flow shear on edge stability	Move to BP - this is basic ELM physics
Aaron Sontag	Edge oscillations during Type-V and ELM-free H-mode	Move to BP - this is basic ELM physics
Joel Clementson, Peter Beiersdorfer, and Manfred K. C. Lee	Development of Spectroscopic ITER Divertor Diagnostics	Move to BP - combine with BP experiment on impurity seeding (Ar injection)
K. C. Lee	Turbulence and transport measurement on Enhanced Pedestal H-mode triggered by 3-D field	Move to BP - combine/piggyback with Canik EPH in BP
Alberto Loarte	Access and sustainment of H-mode confinement in ramped phases of ITER scenarios	Move to BP - this is LH transition physics - combine with Kaye?
Alberto Loarte	Compatibility of Radiative Divertor Operation with High Confinement H-mode Plasmas	Move to BP or T&T - this is LH and/or transport with high Prad
Vlad Soukhanovskii	Development of early snowflake-minus configuration for impurity control	Move to BP and/or ASC - this can be covered by BP snowflake milestone
Alberto Loarte	Assessment of effects of 3-D fields on fast particle losses in ITER	Move to WEP - ITER/CC does not have this expertise
D. Smith	Searching for EHOs in low triangularity plasmas with early n=3 RMP	Skip - will be presented in BP
D. Smith	Assess pedestal/SOL fluctuations and poloidal flow fluctuations across LH transitions and ELMs	Skip - will be presented in BP
Vlad Soukhanovskii	Radiative divertor with impurity seeding in high-performance discharges	Skip - will be presented in BP
Egemen Kolemen	Development and Performance of Model-Based Multivariable Shape Controllers	Skip - will be presented in ASC
R. Raman	Comparison of private flux region gas injection vs midplane gas injection in reducing divertor heat loads and halo currents during disruptions in NSTX	Skip - will be presented in MS TSG

Draft Agenda – 6 mins per idea (3 hrs) + 1 hr discussion

- 30 submissions sorted by research topic, grouped by author

Presenter	Title	Category
Vlad Soukhanovskii	Experiments to support NSTX-U divertor PFC design and operation	NSTX-U support
Stefan Gerhardt	Passive impurity control techniques in NSTX-U scenarios	NSTX-U support (DN SFD at high-A) - combine ELM part w/ Gray?
Travis Gray	Development of small ELM regime with minimal lithiumization for edge particle control	combine with Gerhardt naturally ELMing?
John Canik	X-point height scan at fixed strike point radius	NSTX-U support
John Canik	Impact of 3-D fields on pedestal profiles without and with lithium	R11-4 transport XP
J. Menard on behalf of	Plasma target development for exploring edge transport and stability response to 3D fields	R11-4 transport XP
Aaron Sontag	Effect of collisionality on edge stability and transport	R11-4 transport XP
Ahmed Diallo, John C	Characterization of the Edge Profile Response Induced by Perturbations on the n=3 Static Fields	R11-4 transport XP
Dan Clayton, Kevin T	Effects of 3D Fields on Impurity Transport in the NSTX Plasma Edge	R11-4 transport XP
G.R. McKee, R.J. Fond	Impact of 3D radial field perturbations on turbulence, pedestal transport and ELMs	R11-4 transport XP
Michael Jaworski	SOL modifications due to 3D fields and evaluation of baffle-probes for cross-field transport monitoring	R11-4 transport XP
Rob Goldston	Using Modulated ICRF to Drive EHOs and Modify Edge Transport	R11-4 transport XP
Rob Goldston	Using Acoustic Frequency RMA to Drive EHOs and Modify Edge Transport	Present with other R. Goldston XP
S. Kubota	Effect of 3-D Fields on Particle Transport	R11-4 transport XP
Joon-Wook Ahn	Density pumpout in L-mode plasmas	R11-4 transport XP
Joon-Wook Ahn	Effect of 3-D fields on the radiative/detached divertor plasmas	R11-4 transport XP
Joon-Wook Ahn	Effect of separatrix splitting on the ELM triggering threshold	R11-4 ELM triggering XP
Devon Battaglia, Mor	Edge island imaging and ELM stability modification using a vertically shifted plasma	R11-4 ELM triggering XP
Richard Buttery	Try Zero Shear Rational q Model for RMP ELM Suppression	R11-4 ELM triggering XP
Jeremy Lore	Search for q95 resonant effects on ELM frequency during 3D field application	R11-4 ELM triggering XP
Jong-Kyu Park	ELM triggering test using the n=1 or n=2 field	R11-4 ELM triggering XP
Jong-Kyu Park	ELM suppression in low q95 target plasmas	R11-4 ELM triggering XP
S.A. Sabbagh, T.E. Ev	ELM stability dependence on edge current, q, and collisionality	R11-4 ELM triggering XP
Vlad Soukhanovskii	Early divertor gas injection for early suppression of divertor carbon sources and plasma fueling	targets impurity reduction
Rajesh Maingi	Combination of applied 3-D fields and snowflake divertor for impurity control	targets impurity reduction
Amanda Hubbard	Access and characterization of Imode regime on NSTX	targets impurity reduction
J. Menard	Early H mode impurity confinement reduction combined with snowflake for impurity and density	targets impurity reduction
John Canik	Combining ELM pacing with RF for edge and core impurity control	targets impurity reduction
John Canik	ELM pacing at reduced frequency combined with divertor gas puff	targets impurity reduction
John Canik	ELM pacing with combined n=3 fields and vertical jogs VJ during lithiumized ELM-free discharges	targets impurity reduction

Run-time requested, issues

- ITER-CC guidance allocation run days: 8.5
- Full run-time request: 34
- Minimum useful request: 20
- Good coverage of key areas:
 - NSTX-U needs
 - 3D field effects on transport
 - ELM triggering physics
 - Impurity reduction/control
- Will need to combine some ideas into “group” XPs
 - Especially for R11-4 on effects of 3D fields