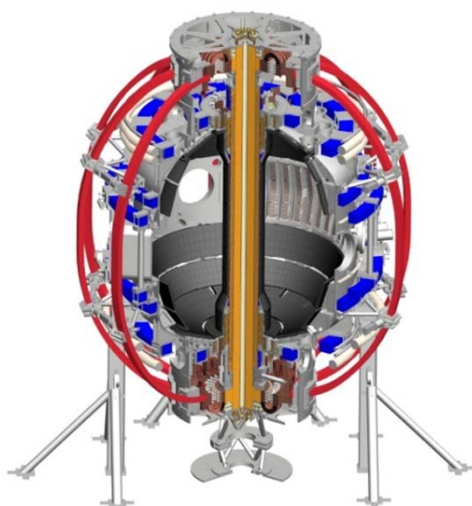


T&T priority/early possible XMPs/XPs for FY15

Coll of Wm & Mary
Columbia U
CompX
General Atomics
FIU
INL
Johns Hopkins U
LANL
LLNL
Lodestar
MIT
Lehigh U
Nova Photonics
Old Dominion
ORNL
PPPL
Princeton U
Purdue U
SNL
Think Tank, Inc.
UC Davis
UC Irvine
UCLA
UCSD
U Colorado
U Illinois
U Maryland
U Rochester
U Tennessee
U Tulsa
U Washington
U Wisconsin
X Science LLC

Walter Guttenfelder, Yang Ren and NSTX-U T&T TSG

**NSTX-U T&T TSG
Jan. 29, 2015**



Culham Sci Ctr
York U
Chubu U
Fukui U
Hiroshima U
Hyogo U
Kyoto U
Kyushu U
Kyushu Tokai U
NIFS
Niigata U
U Tokyo
JAEA
Inst for Nucl Res, Kiev
Ioffe Inst
TRINITI
Chonbuk Natl U
NFRI
KAIST
POSTECH
Seoul Natl U
ASIPP
CIEMAT
FOM Inst DIFFER
ENEA, Frascati
CEA, Cadarache
IPP, Jülich
IPP, Garching
ASCR, Czech Rep

FY15 XMP

- **XMP (of interest to all):** Assess NBI modulation schemes for CHERS measurement & analysis with 2nd NBI [Bell,Podesta]
 - Likely want H-mode with range of densities, trying different modulation schemes
 - 1-2 days (split)

FY15 milestones relevant to T&T research & T&T Research Plans from PAC35

- **(R15-1) Assess H-mode τ_E , pedestal and SOL characteristics at high B_T , I_p , P_{NBI}**
- **(Joint Research Target 2015)** Quantify impact of broadened current and pressure profiles on confinement and stability

STATED RESEARCH PLANS FROM PAC35:

- Characterize H-mode confinement scaling at increased $B_T/I_p = 0.8$ T/1.6 MA
- Explore parametric transport and turbulence dependencies with q and flow profiles using expanded NBI flexibility, 3D coils
- Measure CAE/GAE mode frequencies and structure (BES, reflectometry)
- Plus, we got scolded for not addressing particle transport

Early FY15 XPs

- Tried to identify priority XPs that need to be run and/or those desiring B/pre-Li conditions (priority #1-2), and any XPs that could possibly run early *assuming* some minimum level of plasma performance established (priority #3)

XP	Author	priority	can run early	B or Li	NBI	L,H mode	shot length	TSG lead	early run days	
(R15-1) I_p , B_T scaling of τ_E , ped, SOL	Kaye et al.	1	Y	B	1	H	>0.5 s	Core/boundary SGs (TT+ everyone)	2+	
			Y	B	1+2					
				Li	1+2					
Measure confinement, transport relation to GAE/CAE activity trends with P_{NBI} , R_{Tan}	Crocker	2	Y	either	1+2	H	>0.5 s	TT w/ EP	1	
Measure perturbative particle transport (SGI+TS)	Ren	2	Y	B	Li	either	either	2 s	TT	1
Inner wall limited, L-mode for validation study	Ren	3	Y	either	either	L	>1 s	TT	0.5	
Impurity transport (partially overlap L-mode above)	Tritz	3	part	either	either	L+H	>1 s	TT	0.5	
Measure perturbative momentum transport	Guttenfelder	3	part	either	1	2	L+H	2 s	TT	0.5

Additional FY15/16 XPs

XP	Author	priority	can run early	B or Li	NBI	L,H mode	shot length	TSG lead	run days
Measure T&T changes with q profile (w/ JRT15?)	Ren			either	1+2	H	>0.5 s	EP/TT	1
Confinement scaling with v_* (IR16-1)	Kaye			either	1+2	H	>1 s	TT	1
Measure GAE/CAE mode structure, validate HYM	Crocker/EP			either	1+2	H	>0.5 s	EP	1
Measured T&T changes with rotation profile (plus GAE/CAE mode structure, plus high-Z impurity asymmetry)	Guttenfelder (TT+EP)			either	1+2	H	>0.5 s	Core SG	1
Investigate CAE/KAW coupling, relation to thermal transport (FIReTIP)	Crocker (TT+EP)			either	1+2	H	>0.5 s	TT/EP	1
Distinguish KAW channeling vs. stochastic transport via HHFW +NBI	Crocker (TT+EP)			either	1+2	H	>0.5 s	TT/EP	1
.....

- Plenty of overlap identified between XPs, various TSG interests
- H-mode access/L-H threshold will be discussed in Pedestal TSG