

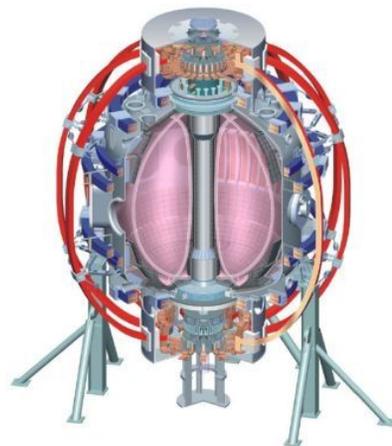
Controlled lithium introduction and discharge development with Mo tiles

College W&M
Colorado Sch Mines
Columbia U
Comp-X
General Atomics
INL
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 Maryland
U Rochester
U Washington
U Wisconsin

Rajesh Maingi,



NSTX Research Forum
Princeton NJ
15-18 Mar 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
TRINITI
KBSI
KAIST
POSTECH
ASIPP
ENEA, Frascati
CEA, Cadarache
IPP, Jülich
IPP, Garching
ASCR, Czech Rep
U Quebec

Goals and Background

- Goal: re-introduce lithium at the beginning of the CY2011 run in a controlled manner. This will establish the characteristics of high triangularity discharges with the Outer Strike Point on the Mo tiles, and document the behavior as the lithium coating is gradually increased.
- A slow, controlled lithium introduction was done in the FY08 and FY09 campaigns
 - The FY08 data contributed to a large number of papers and new insights on ELM physics
 - The FY09 data are still being analyzed, and will yield additional new insights as well
 - In FY10, such a controlled/slow lithium introduction was untenable because of the LLD
- The idea here is to revert to a controlled introduction, and use this systematic addition of lithium to document the initial performance of the new Mo tiles on the inboard side

Experimental Plan (1 day or PB?)

- Attempt high triangularity fiducial with no lithium
- Add in low amounts of lithium: 50 mg/discharge, and optimize the fueling and discharge timing to improve performance
- After ~ 5 discharges, increase lithium amount to 100 mg/discharge, and repeat
- After ~ 5-10 discharges, increase lithium amount to 150-200 mg/discharge
- After ~ 5-10 discharges, increase lithium to ~ 300 mg/discharge
- Document pedestal and divertor characteristics during this controlled re-introduction