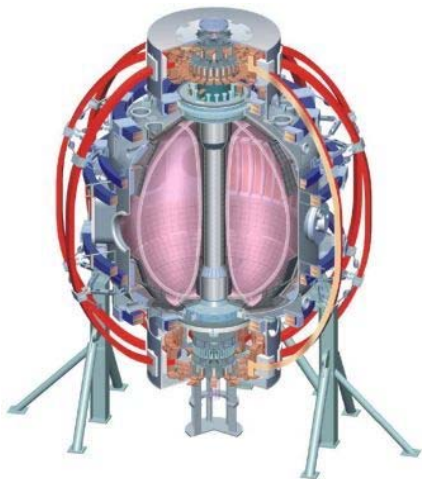


XP1059 Results from Visible Cameras

Filippo Scotti

Princeton Plasma Physics Laboratory PPPL

LRTSG Meeting
August 23, 2010

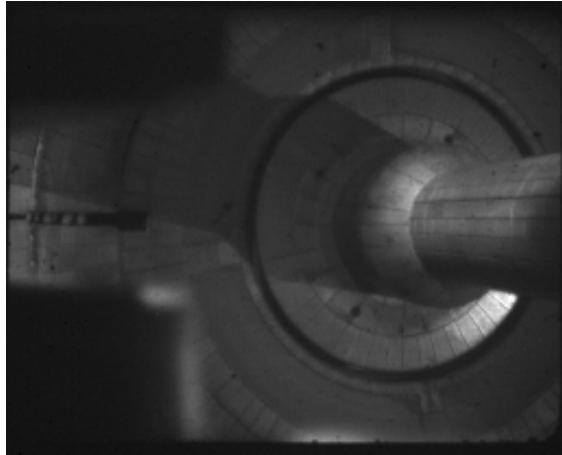


College W&M
Colorado Sch Mines
Columbia U
CompX
General Atomics
INEL
Johns Hopkins U
LANL
LLNL
Lodestar
MIT
Nova Photonics
New York U
Old Dominion U
ORNL
PPPL
PSI
Princeton U
Purdue U
SNL
Think Tank, Inc.
UC Davis
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UCLA
UCSD
U Colorado
U Illinois
U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

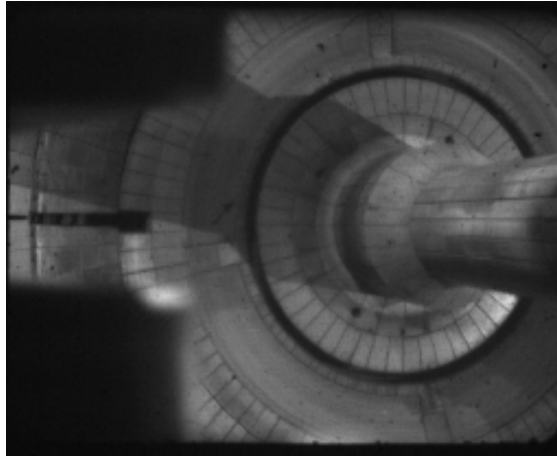
Culham Sci Ctr
U St. Andrews
York U
Chubu U
Fukui U
Hiroshima U
Hyogo U
Kyoto U
Kyushu U
Kyushu Tokai U
NIFS
Niigata U
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Hebrew U
Ioffe Inst
RRC Kurchatov Inst
TRINITI
KBSI
KAIST
POSTECH
ASIPP
ENEA, Frascati
CEA, Cadarache
IPP, Jülich
IPP, Garching
ASCR,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

Striped structures observed on LLD since XP1041

June 24th

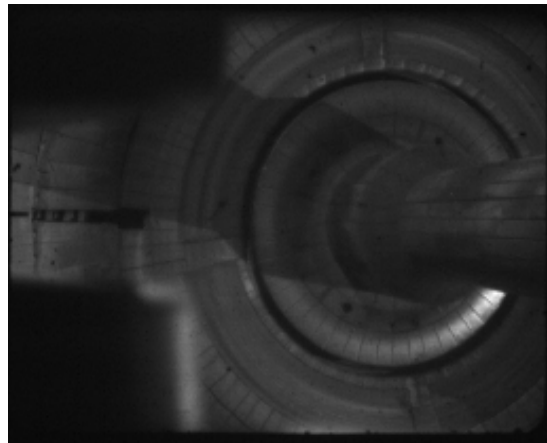


June 29th After XP 1041

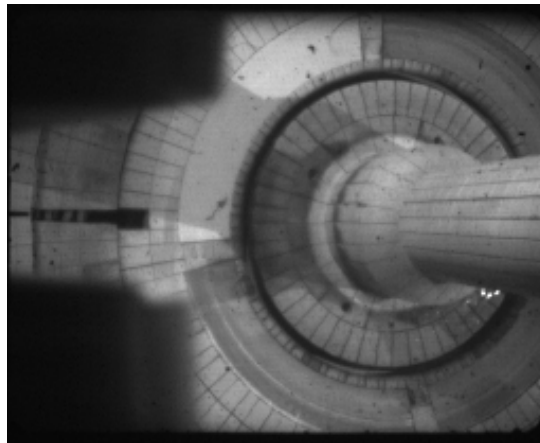


Striped structures that appeared on the LLD after XP1041 /XP1041A were still present on heated LLD segments after massive Li evaporation

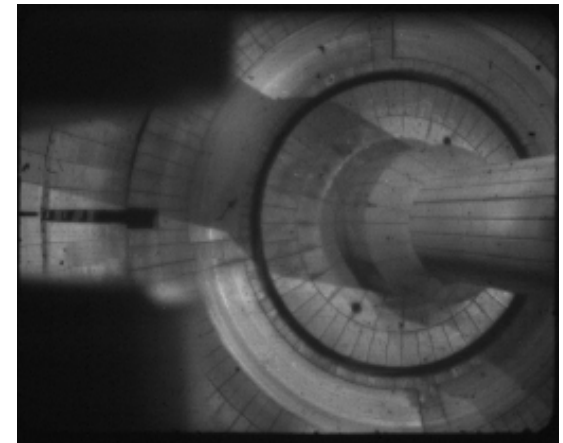
July 30th After XP 1041A



Aug 9th After Li evaporation



Aug 16th After XP1059 and 1001



Discharges before and after LLD heaters failure were analyzed to determine effect of LLD temperature

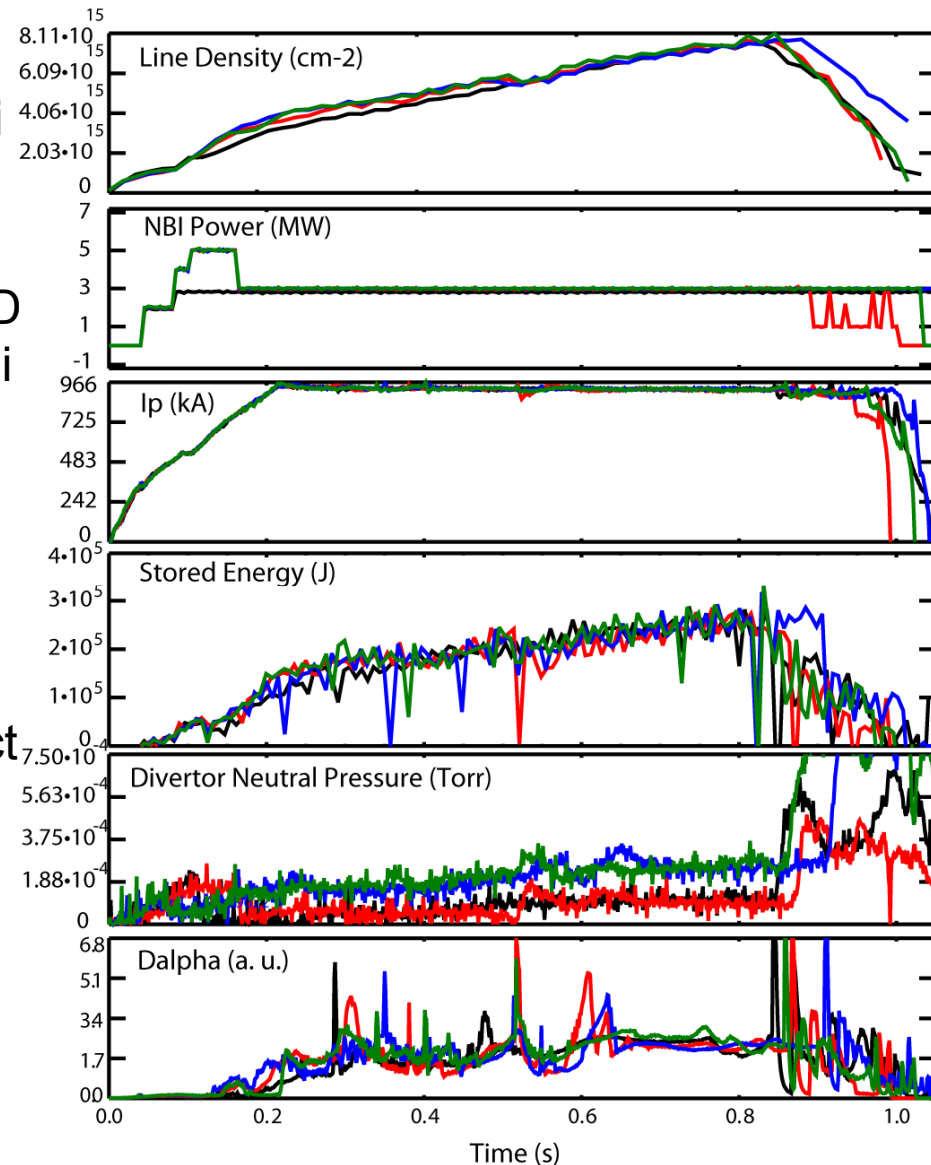
- In order to characterize LLD behavior divertor cameras were filtered on D- α and Li II for most of the XP
- Compared discharges before and after LLD heaters failure to evaluate effect of melted Li on LLD
- Unfortunately also LITER evaporation was stopped after LLD heater failure
- Hard to distinguish hot LLD vs LITER effect

139595 T=220C w LITER

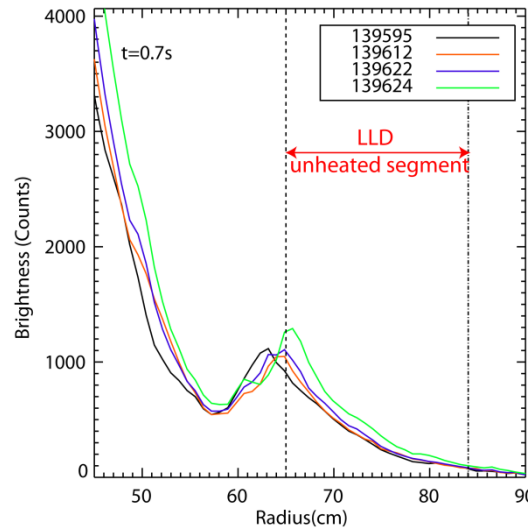
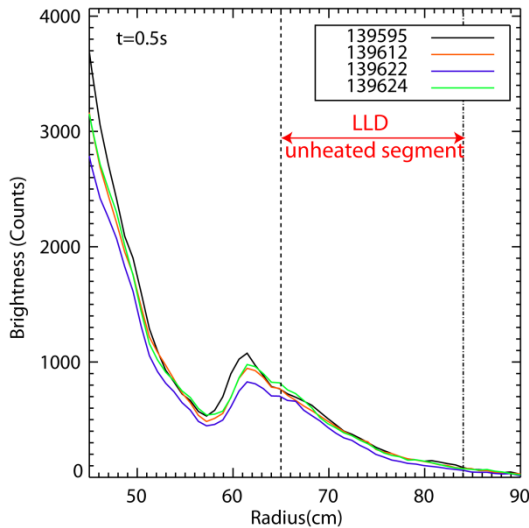
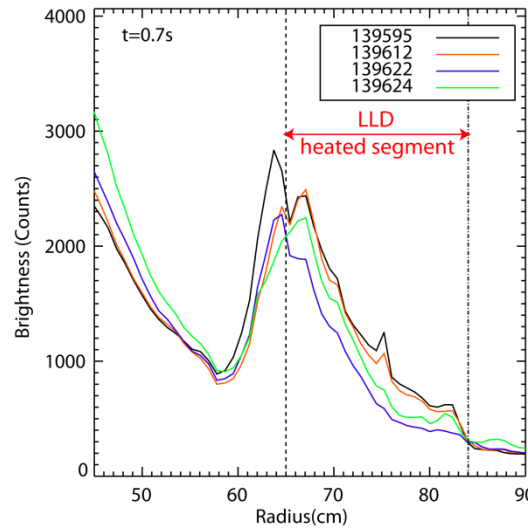
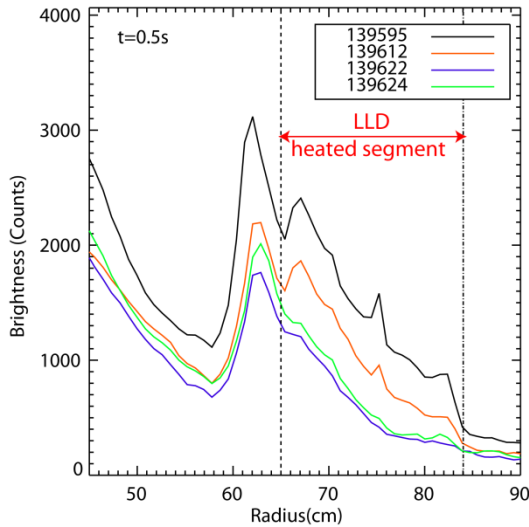
139612 T=217C w LITER

139622 T=100C w/o LITER

139624 T=110C w/o LITER



Effect of LLD temperature on D α brightness



- In low δ discharges inner divertor in high recycling/detached regime: how can it be consistent with Li pumping?

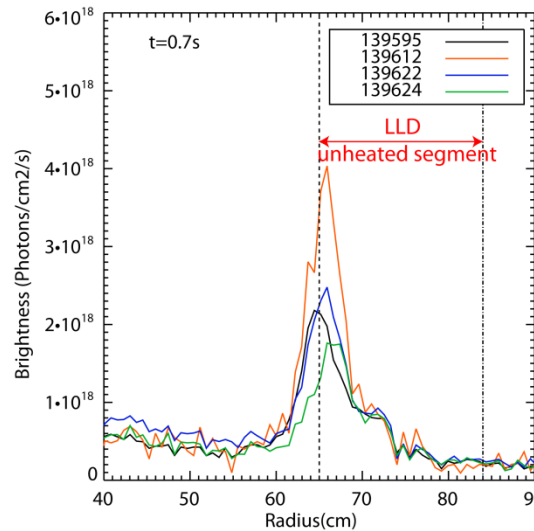
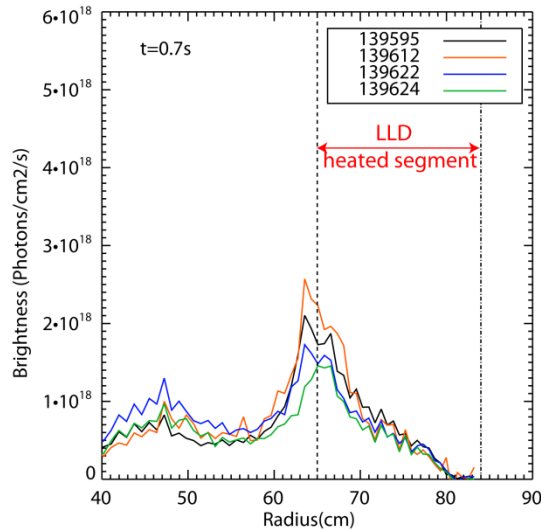
- D α emission higher than in XP1000: but higher NBI and higher fueling in XP1059

- No clear trend/change for D α emission with changes in LLD temperature

- D α shows extra brightness on heated plate: probably reflection from inner divertor. Problem for visible diagnostics

- Caveat: need post run absolute calibration to be able to compare emissions on different segments

Effect of LLD temperature on Li II brightness



- Li II brightness higher than in XP1000 (but much more Li deposited and higher NBI)

- Li II emission analysis complicated by Li flakes during most of the discharges

- Apparently broader and less peaked emission profile on the heated plate. (Could be simply due to viewing geometry)

- No clear trend with LLD temperature