

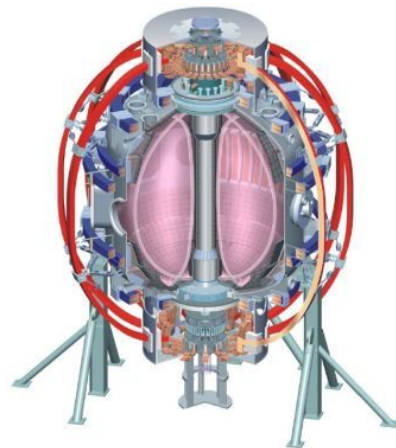
# Controlled lithium introduction and discharge development with Mo tiles

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Rajesh Maingi,



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# 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)

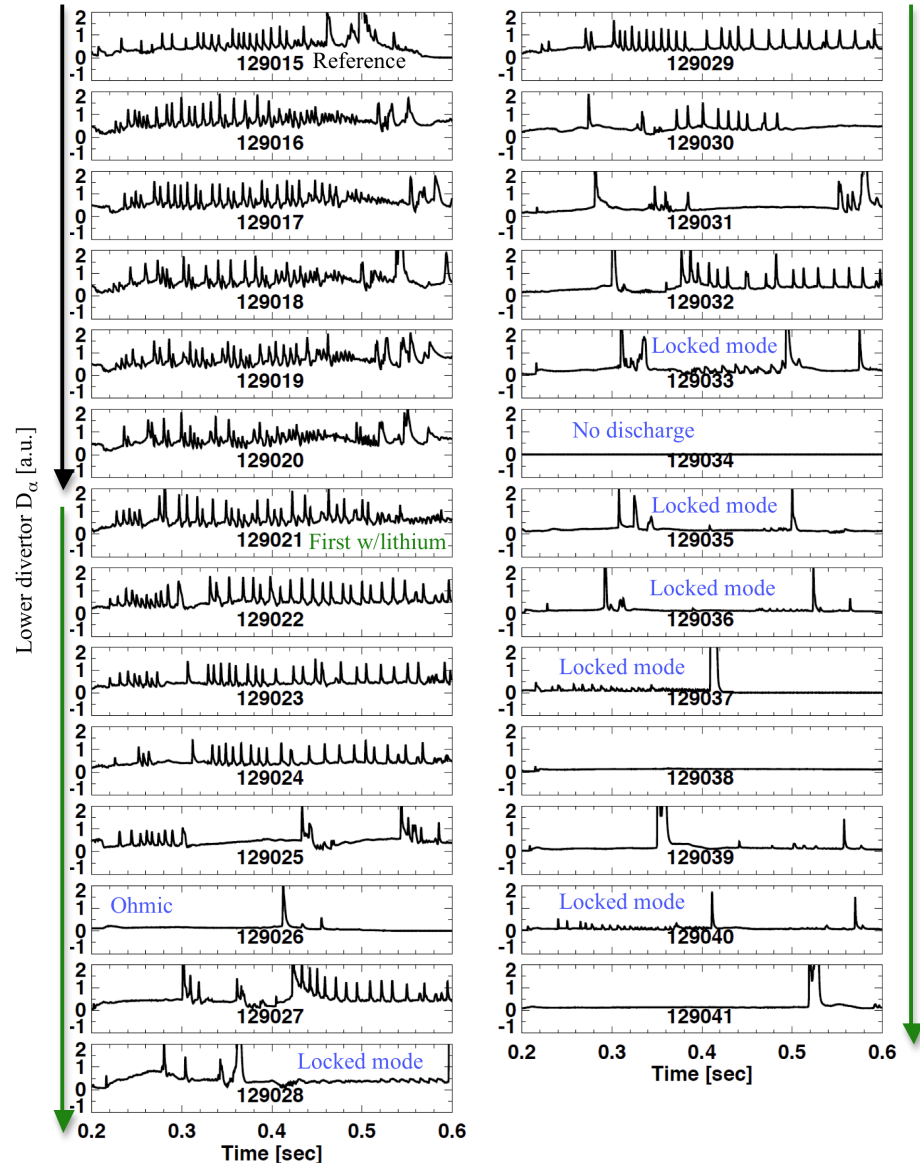
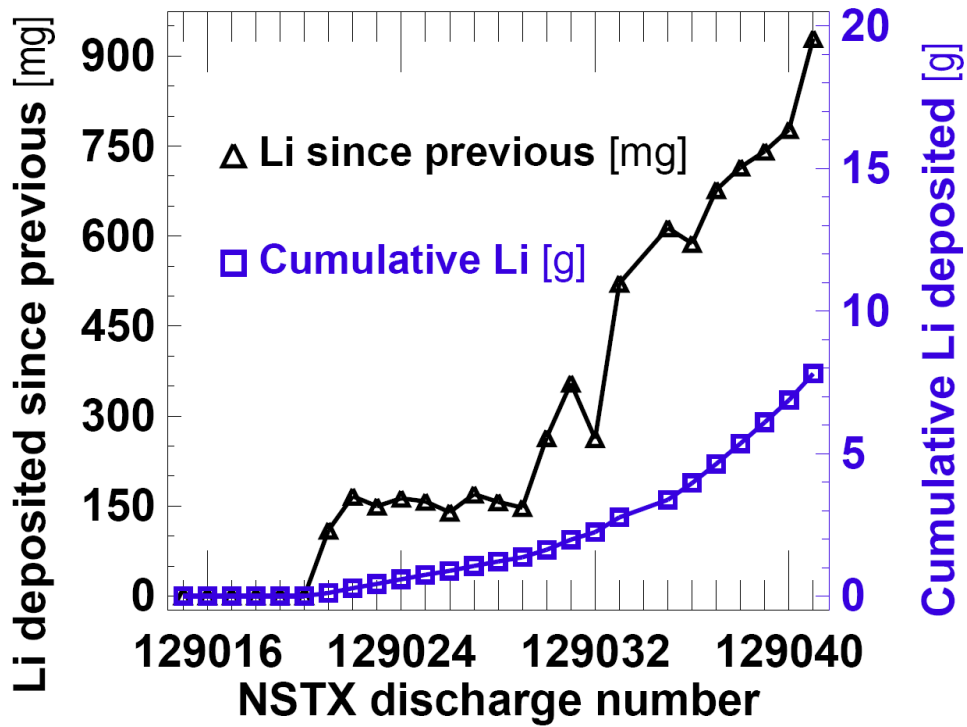
- Attempt high triangularity fiducial with no lithium
- Add in low amounts of lithium: 50 mg/discharge, and optimize the fueling and discharge timing to improve performance
- After ~ 5 discharges, increase lithium amount to 100 mg/discharge, and repeat
- After ~ 5-10 discharges, increase lithium amount 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

## Coordination with XMP-71

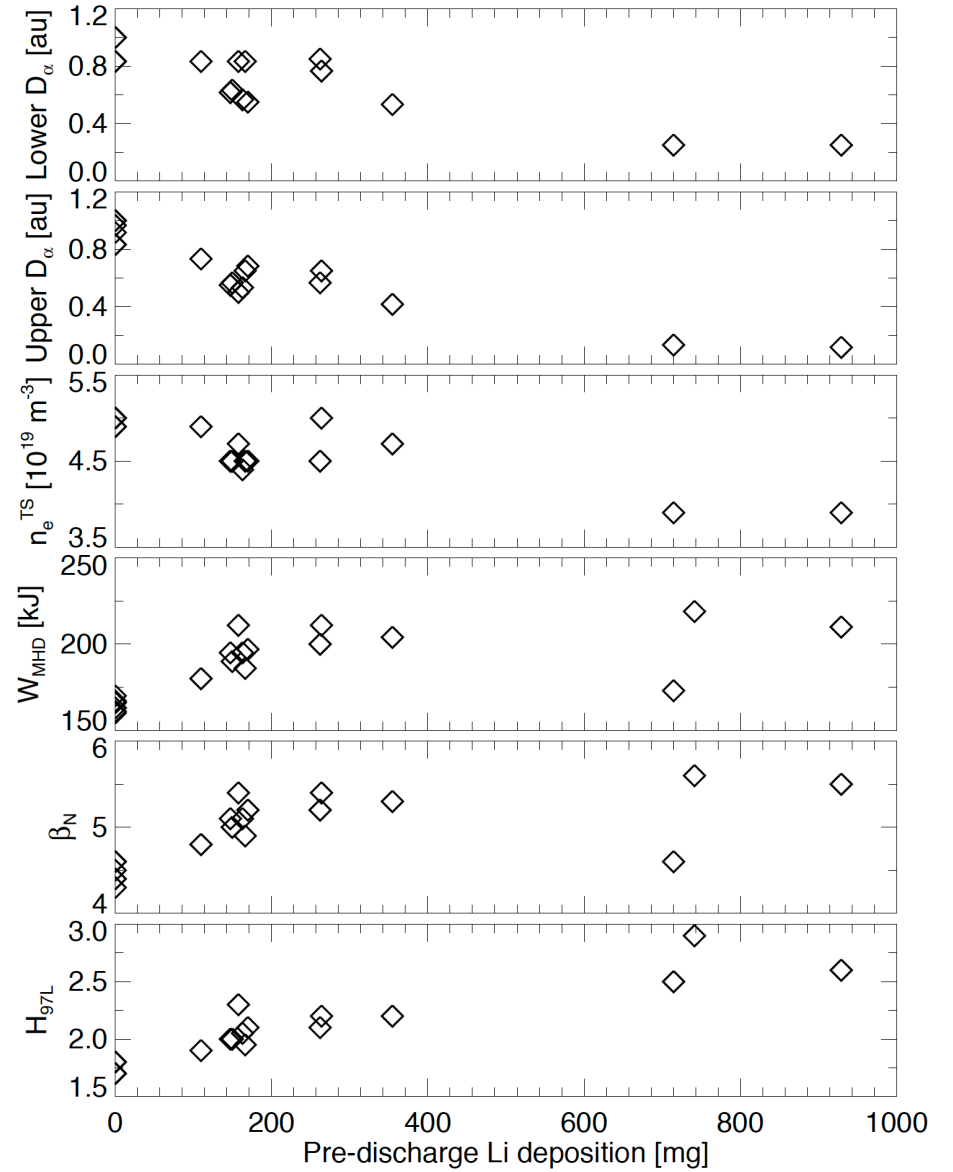
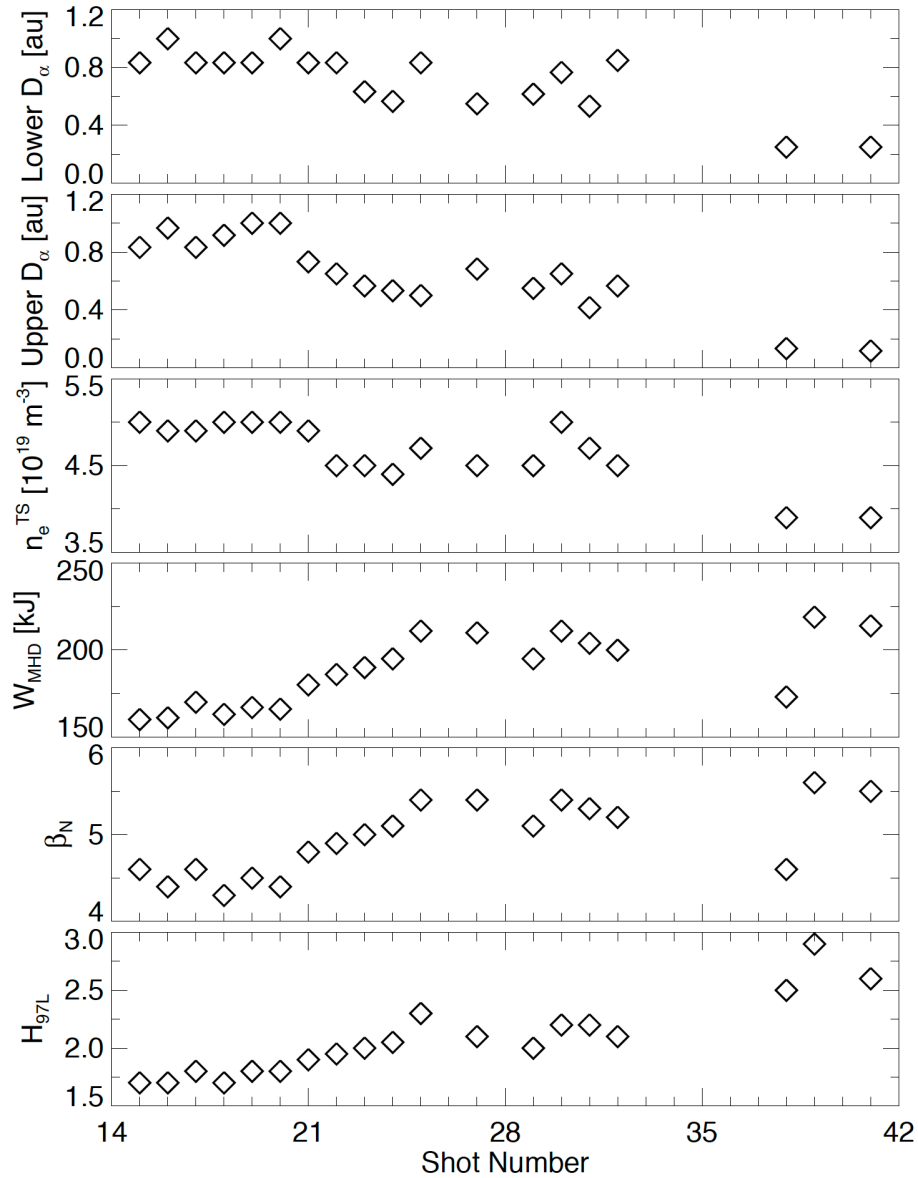
- Plan step I: propose to allow HeGDC between discharges, develop as reproducible of a condition as possible without lithium
- Decision point: do the control system evaluation and pf1a discharge evaluation in steps II-VI of XMP71 without lithium, *or* introduce 50 mg of lithium (prefer less than 100 mg) per discharge as suggested in XP1133
- Decision point: do LSN discharge in step VII, IX of XMP71 without lithium if possible, otherwise with minimal lithium
- Move smoothly into XP1133

# Backup

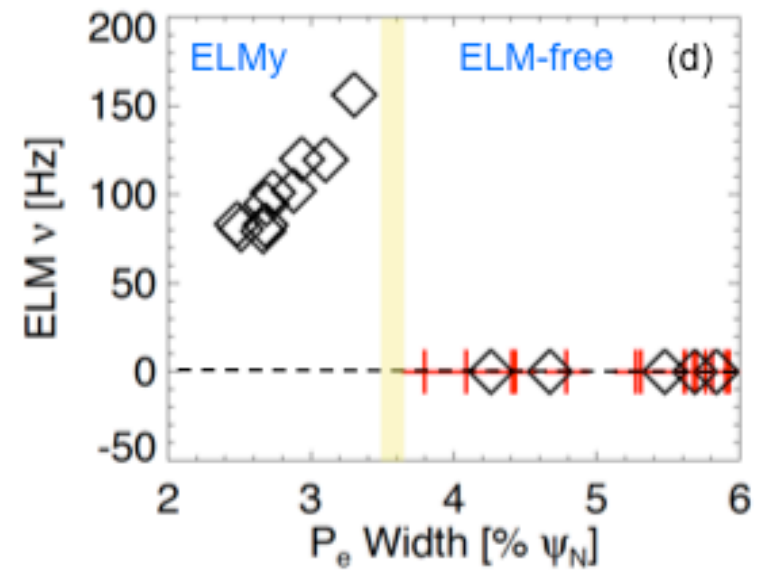
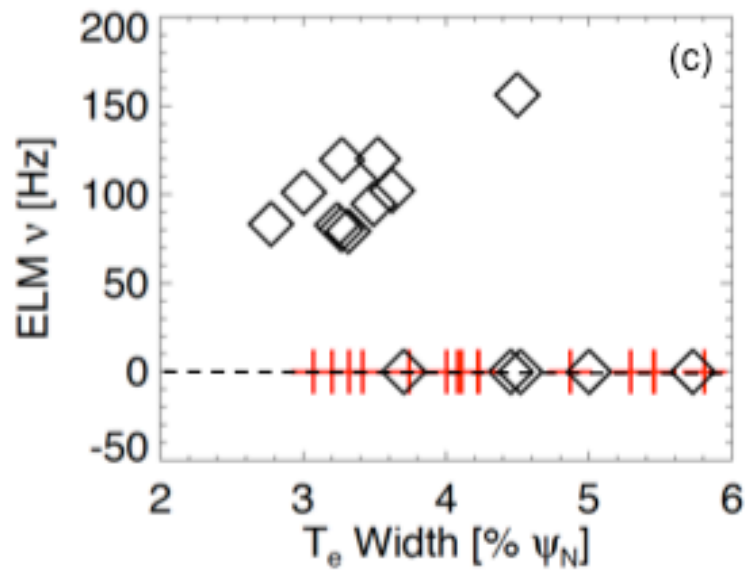
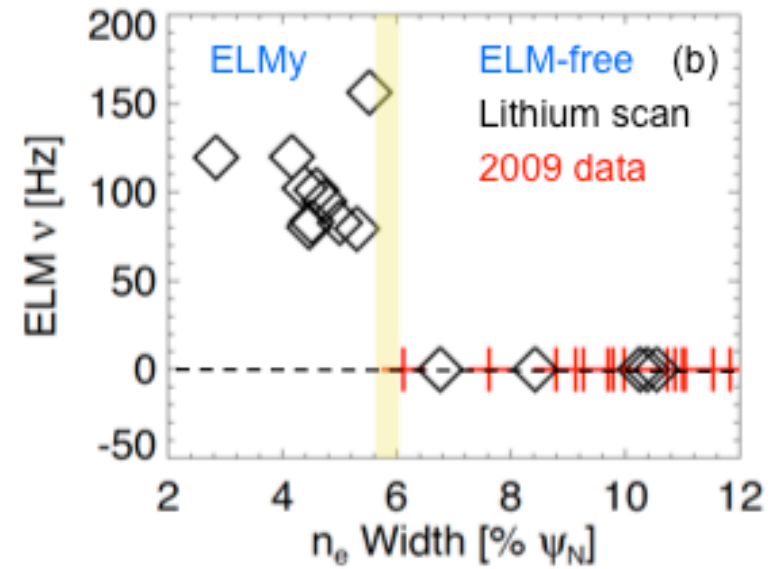
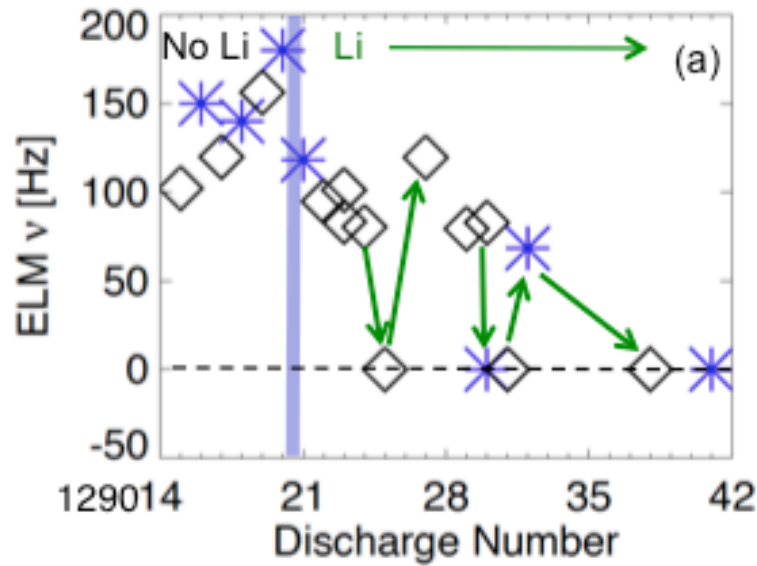
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