


---

---

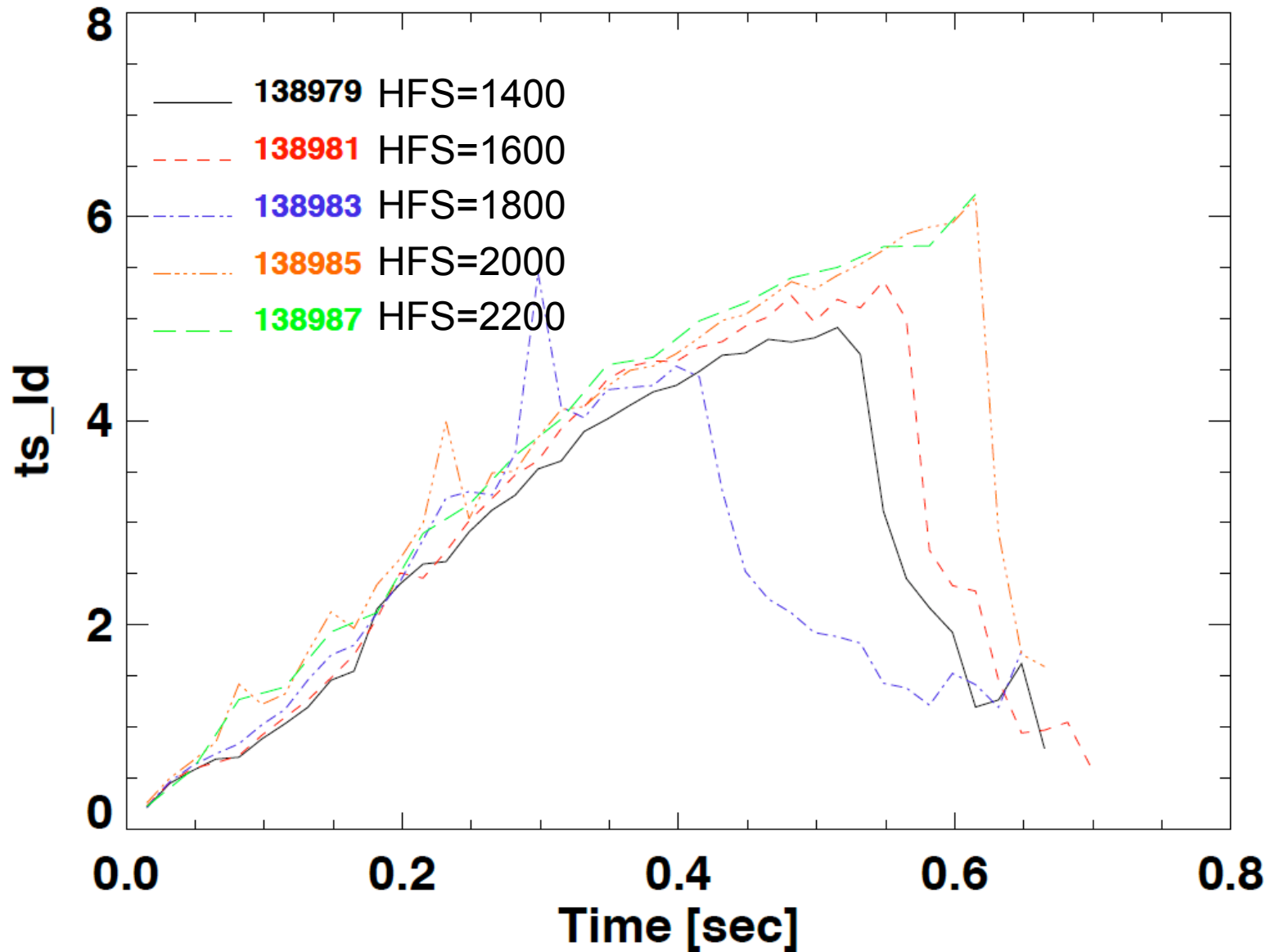
 NSTX

**Does the low flux expansion  
discharge on the LLD require more  
fueling than higher delta discharges?**

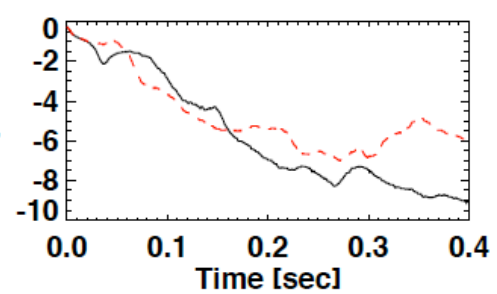
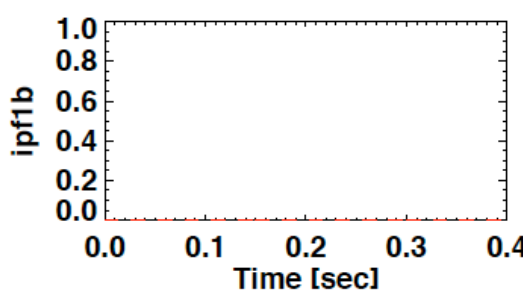
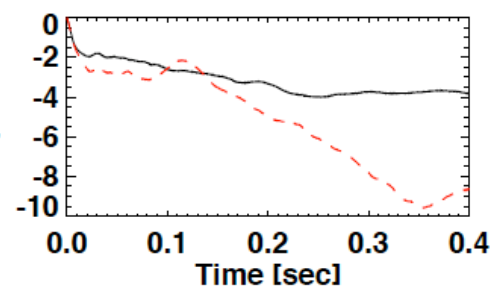
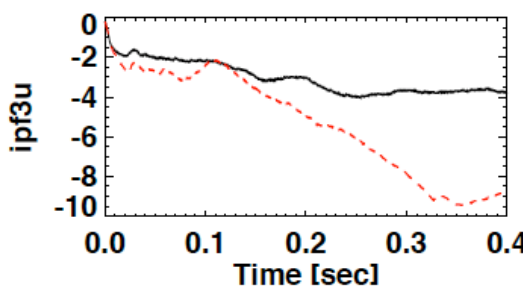
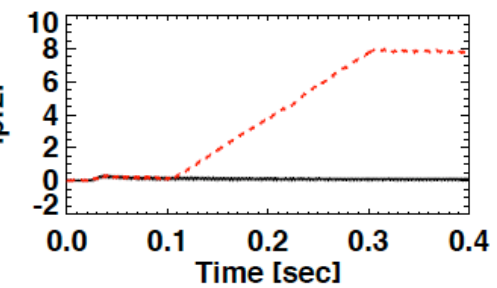
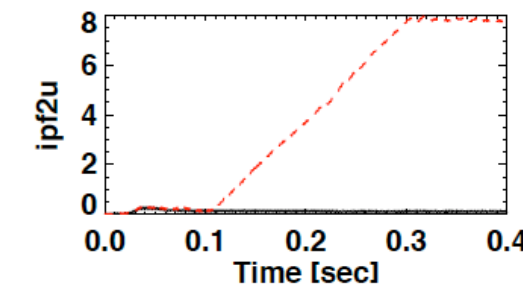
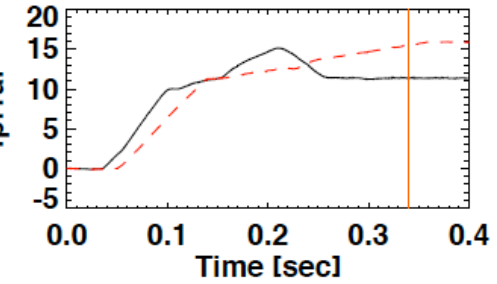
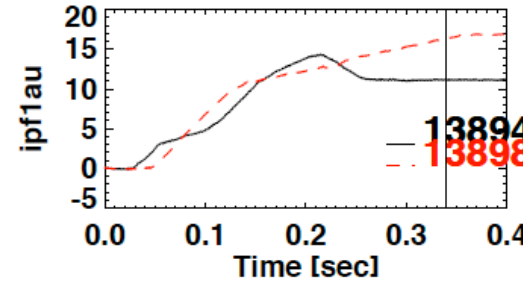
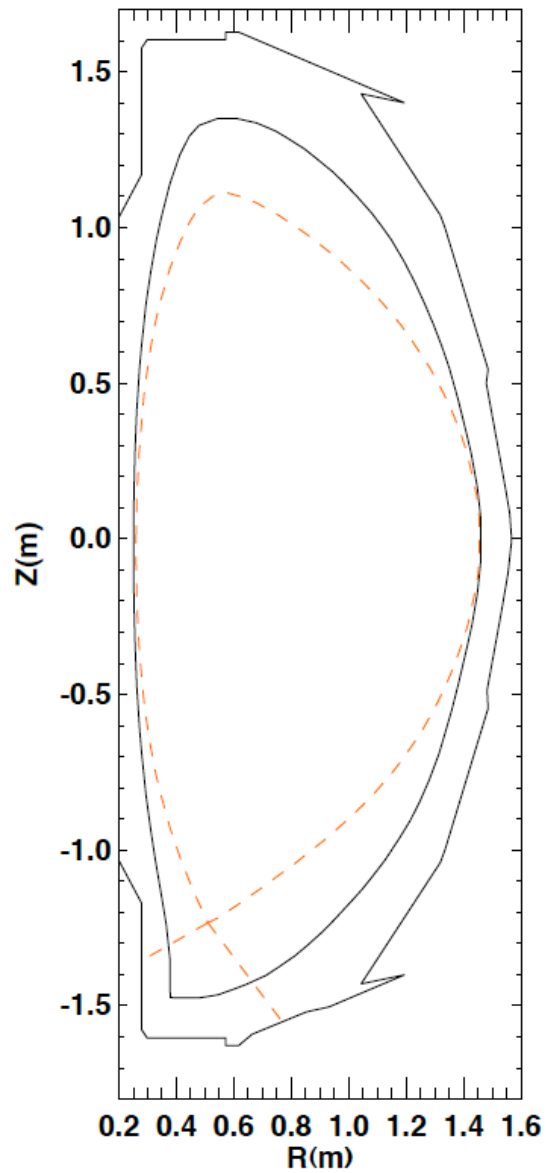
R. Maingi  
Oak Ridge National Laboratory

LLD-Fest  
Aug. 23, 2010

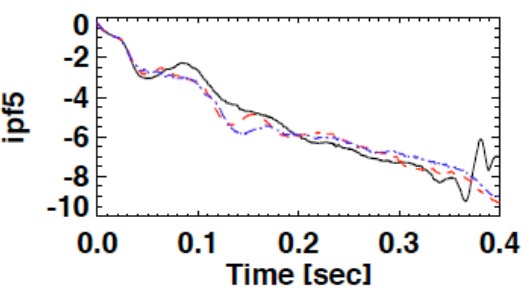
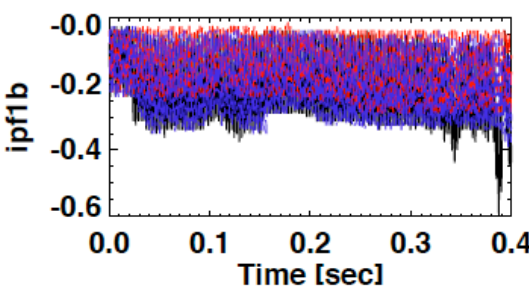
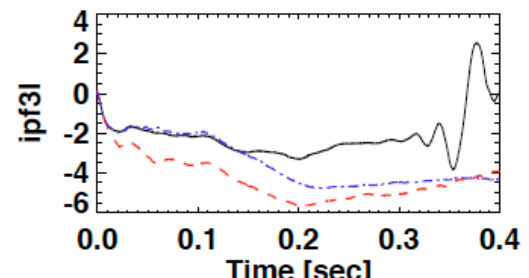
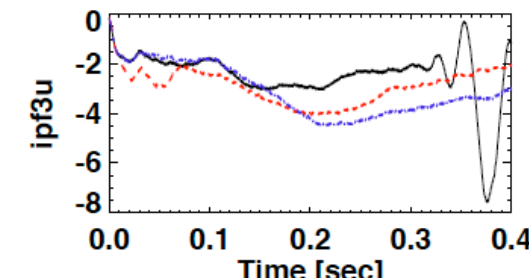
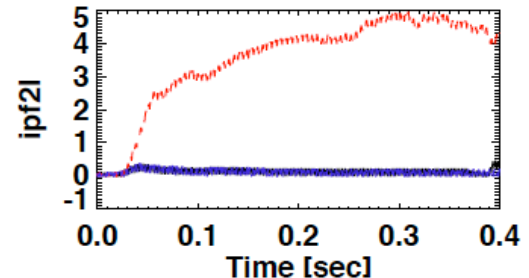
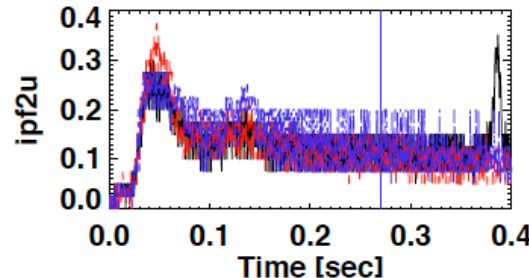
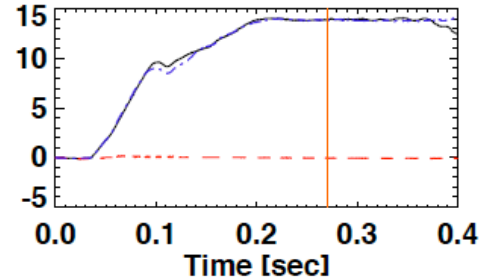
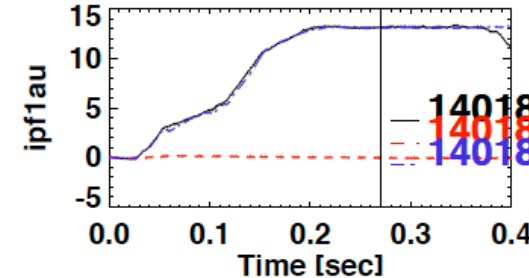
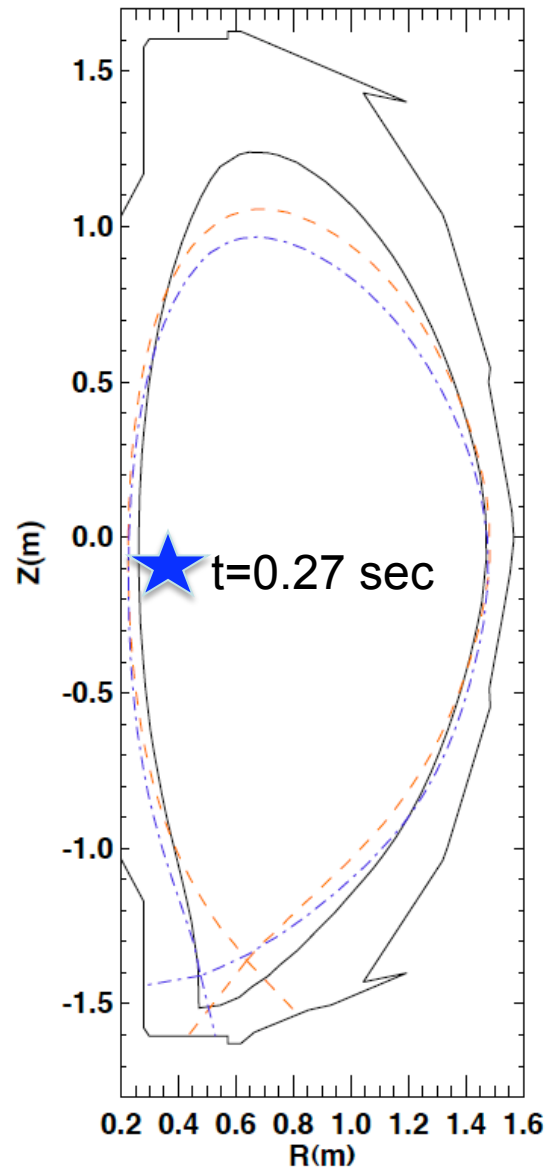
HFS plenum scan in XP1041 showed a wide range of plenum pressures possible at low delta



Low delta shots had a much higher X-point, and were nearly up-down symmetric with  $drsep \sim 0$

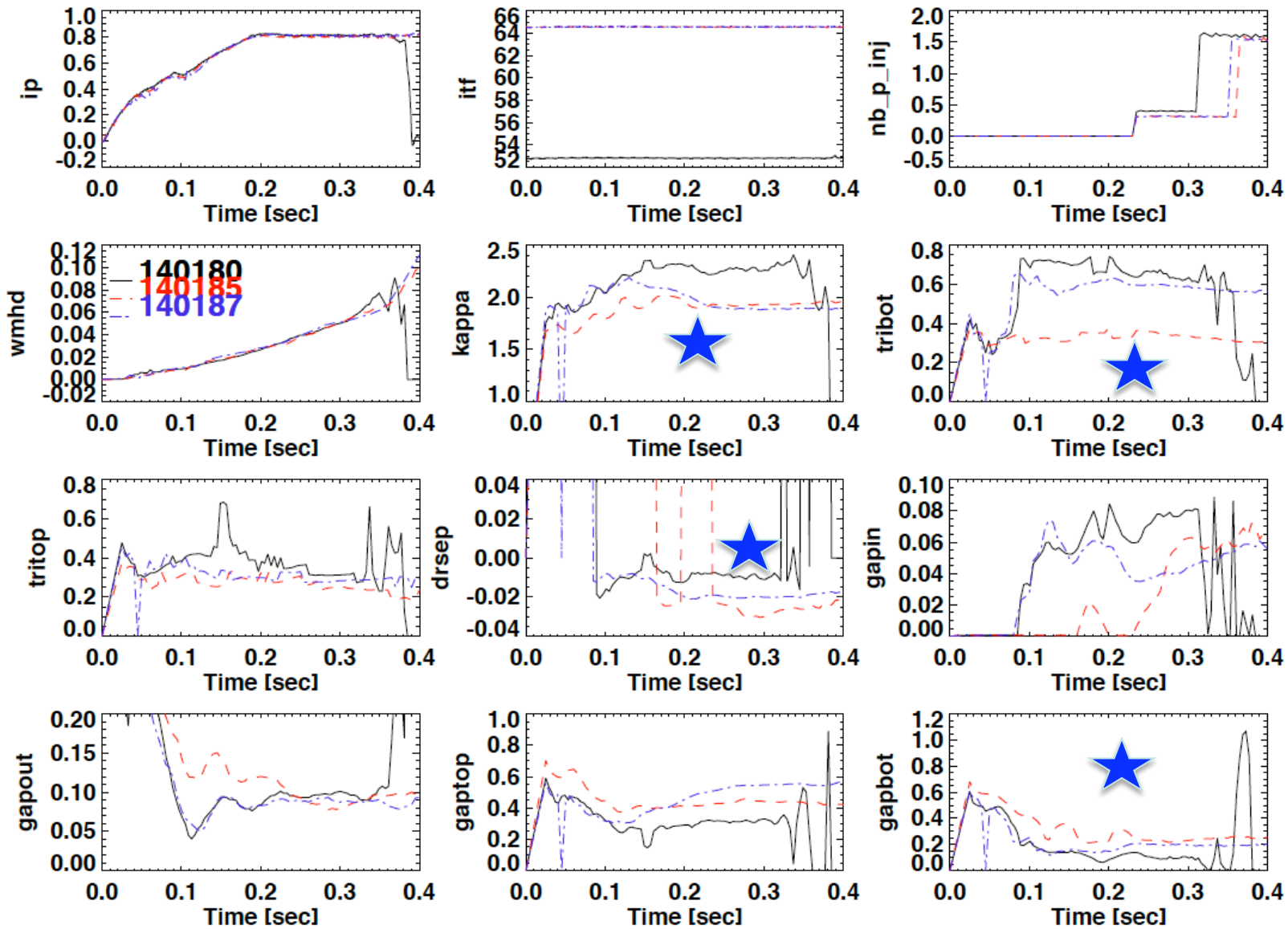


# Three X-point geometries and triangularities achieved in XP 1029 – red and blue discharges had same fueling



# Shape and discharge evolution relatively matched well

Blue and red discharges has HFS = 2400 torr



Suspect heavy lithium and/or LLD allows for a wider density/fueling operation window; maybe more so in high X-point discharges?



- Dedicated Experiment needed to confirm
  - Run standard fiducial and see fueling rate window for good discharges
  - Run high delta, high X-point shot and document fueling rate window
  - Run low delta, high X-point shot and document fueling rate window
  - Run low delta, high X-point shot with LLD warm
  - Probably should have low lithium evaporation rate between shots?