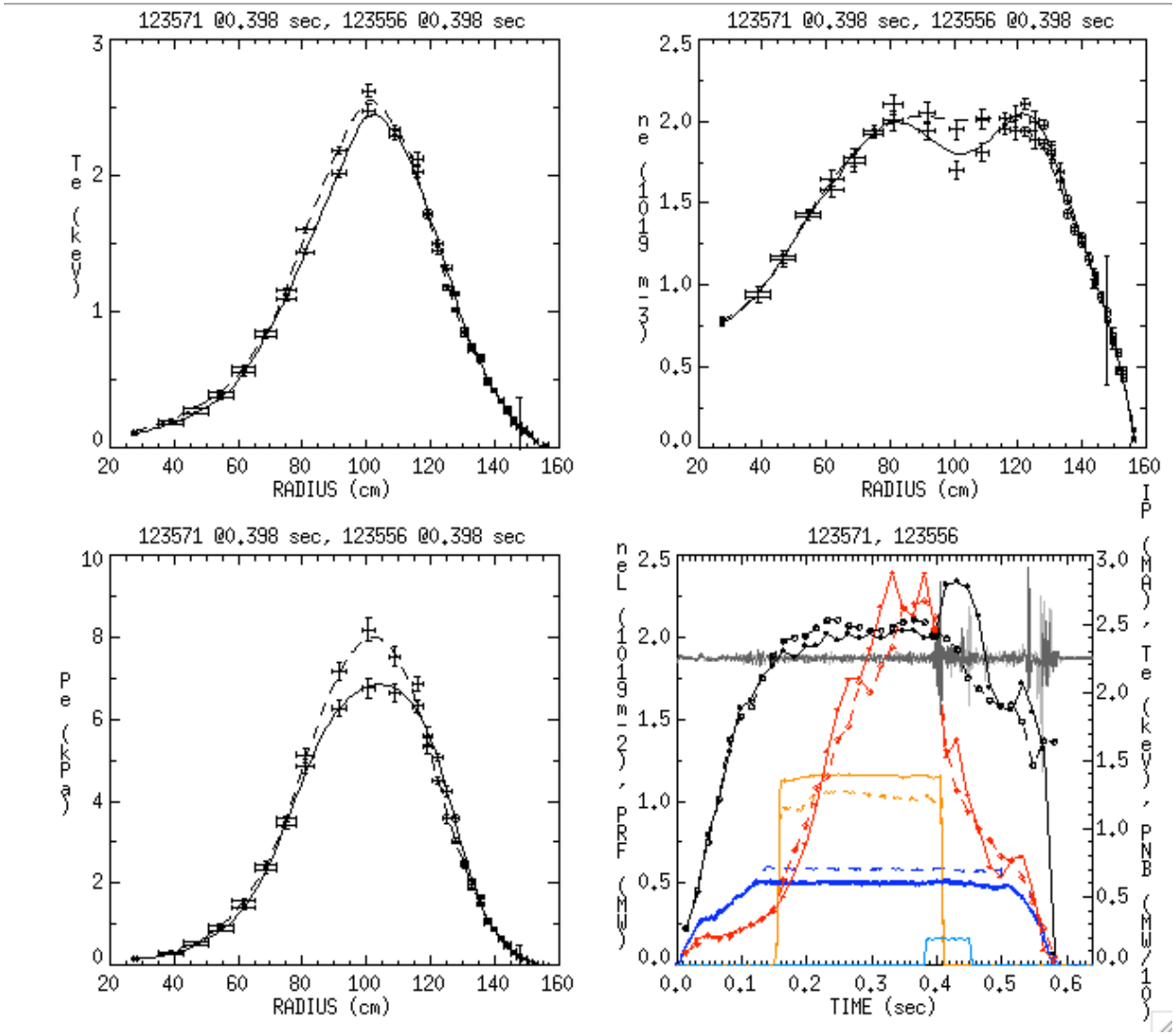
XP717 HHFW CD at High B - June 13 Summary

- Plan: Use conditions for Mazzucato June 12 high k scattering and compare CD for ± 90^o and ± 150^o
  - Desire to obtain comparisons similar to April 25 data for $14m^{-1}$ and $-7m^{-1}$ (at same plasma conditions and T_e profiles if possible)
    - Fig 1 - April 25 comparison
    - Fig 2 - June 12 conditions for $-7m^{-1}$ (-90^o)
- Results:
  - Fig 3 - + 90^o prone to have MHD instability
    - Density pumpout occurred during the run, perhaps due to lithium pumping of helium
  - Fig 4 - Transport barrier appears to occur for + 90^o at higher P_{RF}, lower density
  - Fig 5 - ± 90^o comparison with NB moved earlier still not possible with instability and transport barrier formation
- Conclusions:
  - For tomorrow
    - Should return to higher density to avoid instability and transport barrier for ± 90^o
    - Should compare - 90^o and $00\pi\pi$ phasing for CD
    - Should program equilibrium to increase outer gap during NB measurement
  - Also for tomorrow:
    - Heat plasma with $-7m^{-1}$ then change phase to - 3 m^{-1} to see if efficiency at low $k_{||}$ improves - important for coupling study

Comparison for $14m^{-1}$ and $-7m^{-1}$

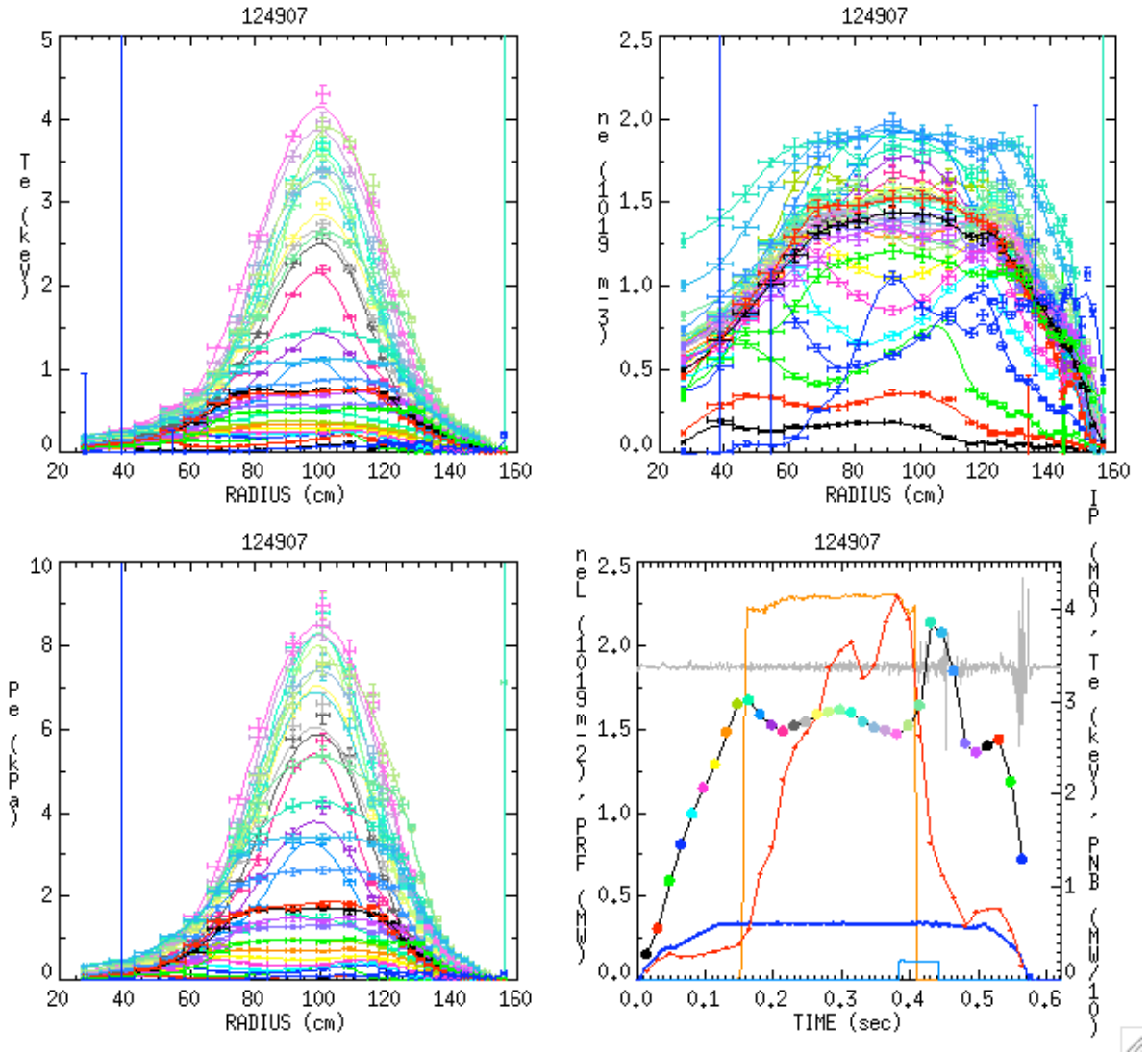
April 25 Mazzucato high k scattering run



I_P different but otherwise a good comparison

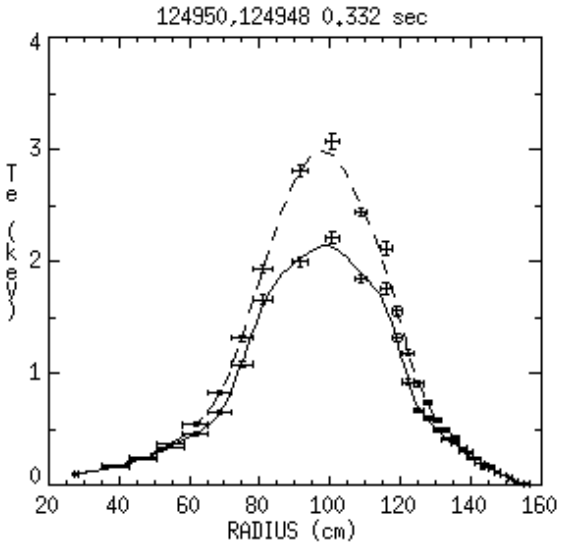
Good heating at -7m^{-1} for chosen conditions

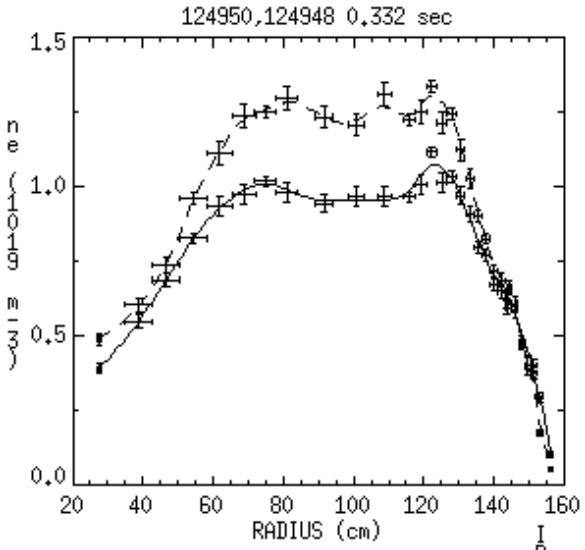
June 12 Mazzucato high k scattering run

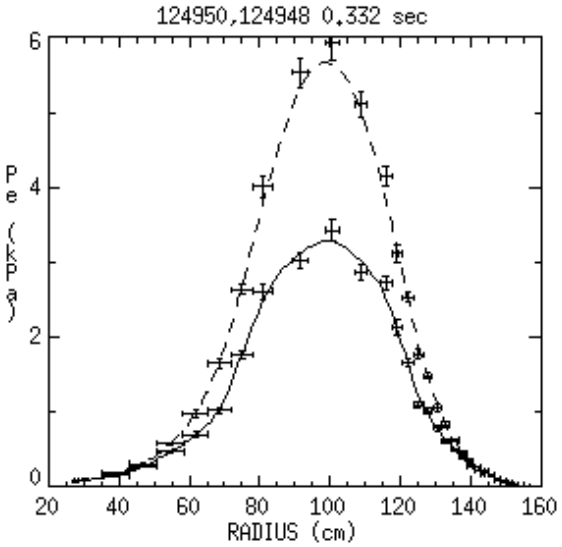


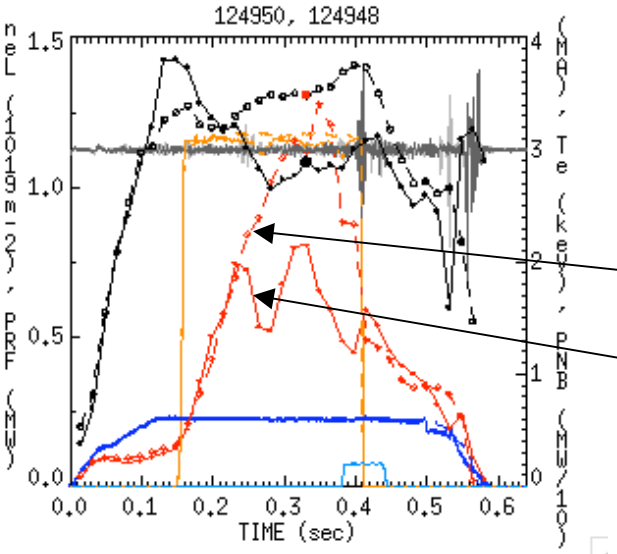
Operation reasonably stable at P_{RF} = 2.3 MW

Comparison of ± 90^{o} for P_{RF} = 1.2 MW







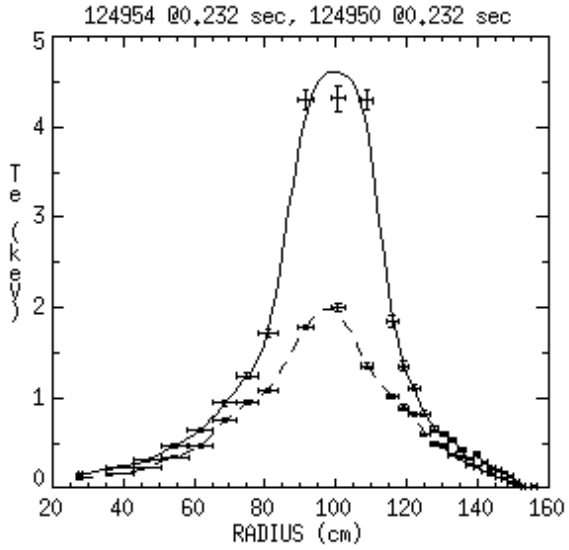


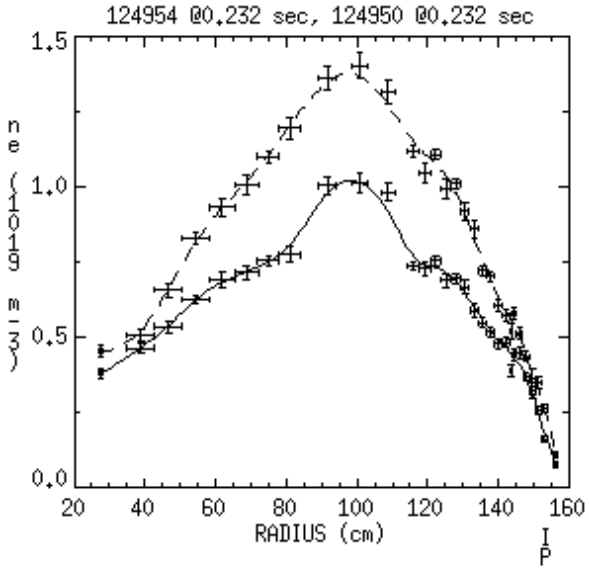
- + 90^{o} unstable at t = 0.24
- Heating comparable to
  - 90^{o} until instability
- n_e relatively low

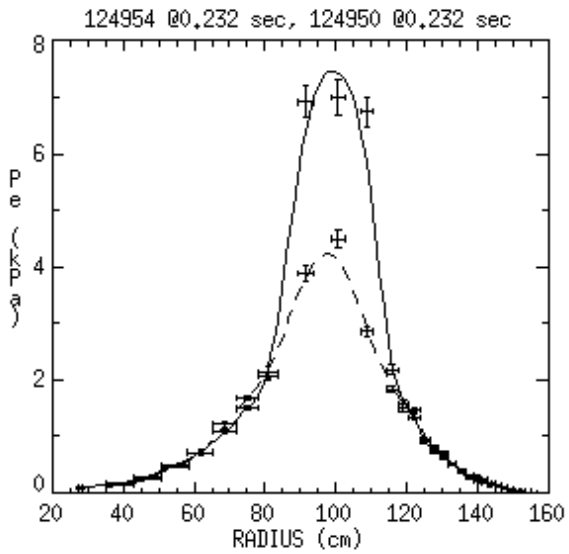
- 90^{o}

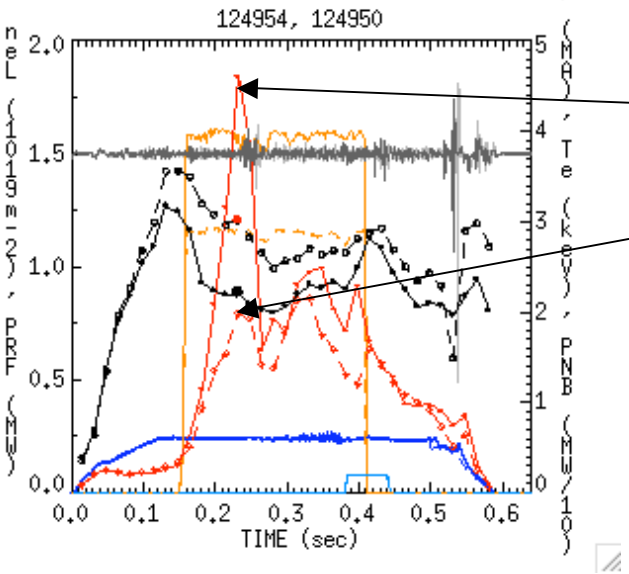
+ 90^{o}

+ 90^{o} appears to develop internal transport barrier at higher P_{RF} and lower density





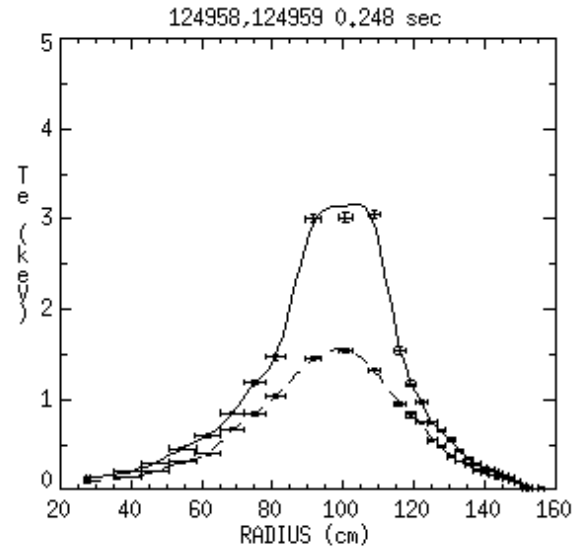


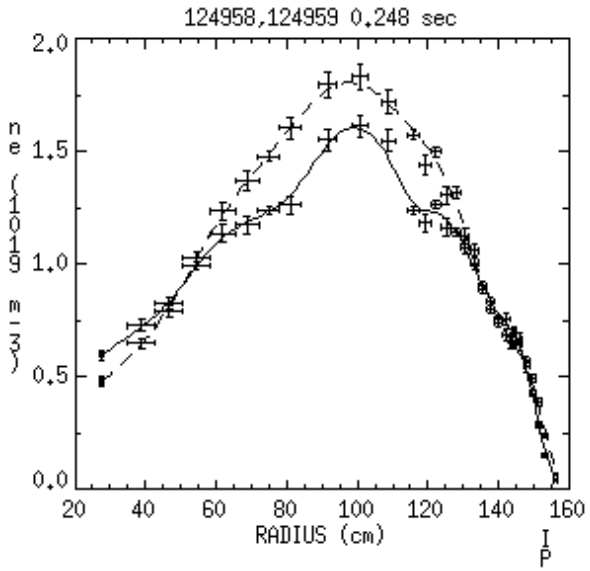


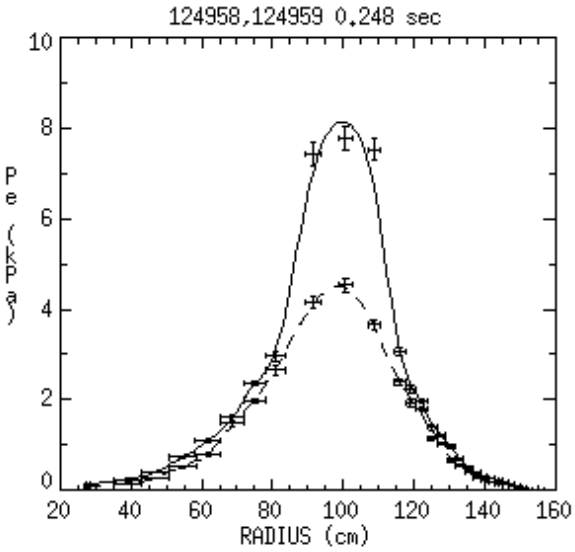
+ 90^{o} , P_{RF} = 1.6 MW

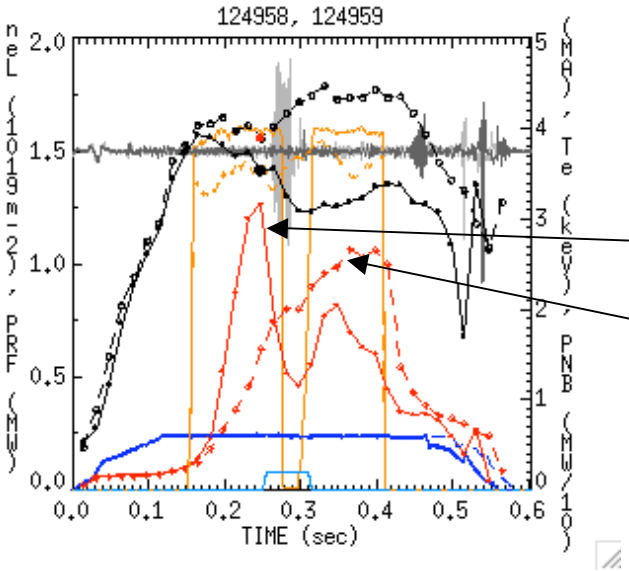
+ 90^{o} , P_{RF} = 1.2 MW

Moved NB earlier to make MSE measurement earlier









- Instability and mode locking at t = 0.24 sec for + 90°
- Initial heating rate greater at + 90°
  -- barrier or edge density effect?

+ 90°

- 90°