XP 805, Initial Summary

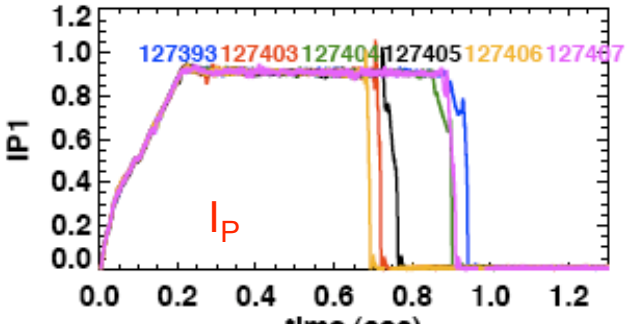
Stefan Gerhardt

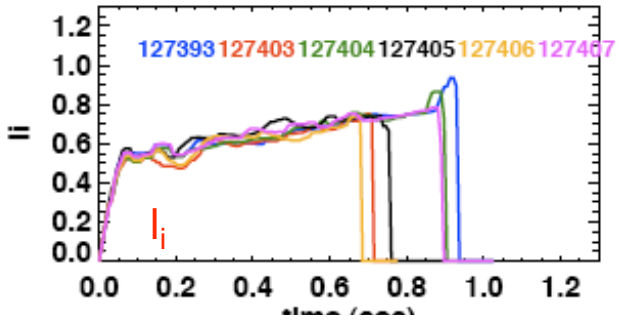
Results last year showed an asymmetric response (rotation, pulse length) to an applied n=3 field → n=3 error field present in NSTX

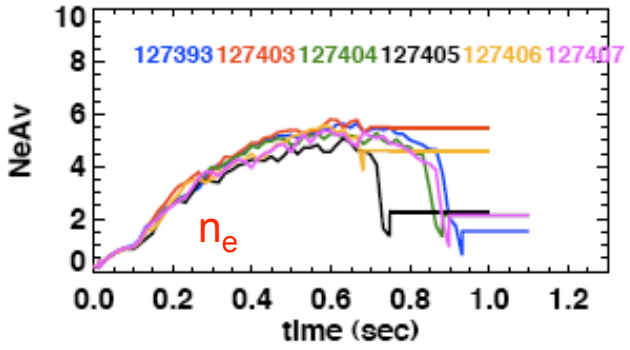
…so…

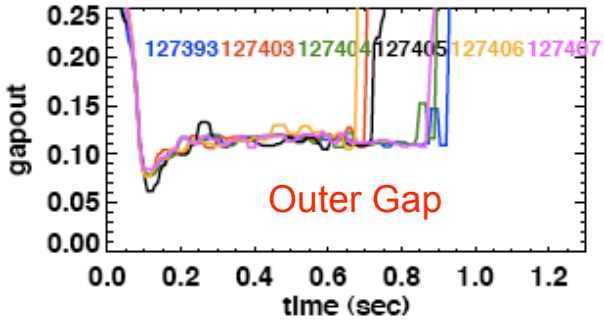
- Establish a reproducible target.
- Scan the n=2 error field phase at two different levels of applied field. Look for variation in pulse length and rotation (2*6+References=15 shots).
- Optimize the correction magnitude for rotation sustainment and (hopefully) pulse length.

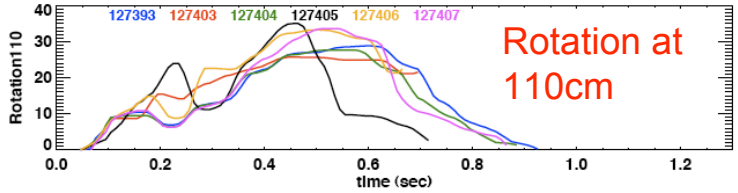
The Reference Shot Was Not Reproducible

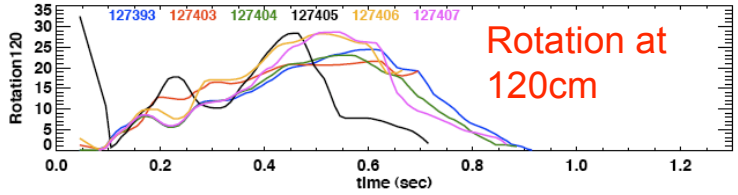


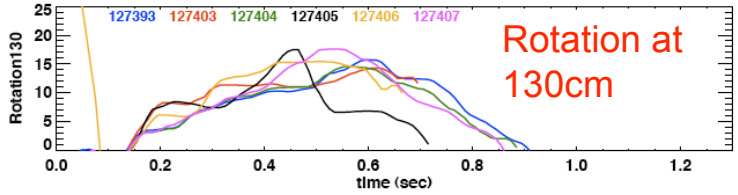










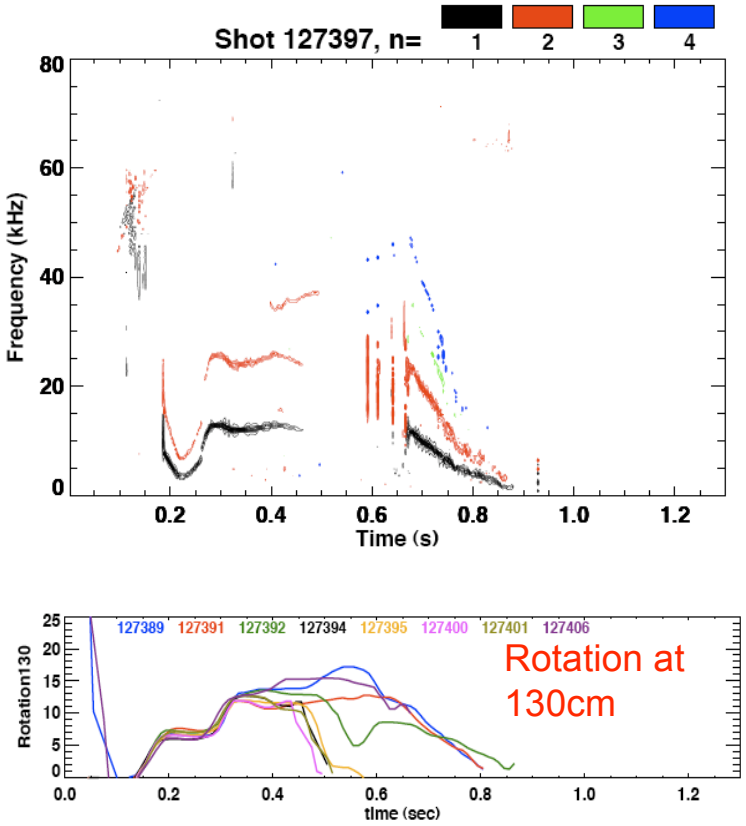


Controlled quantities are similar, but rotation evolution very different

This is just the fiducial!

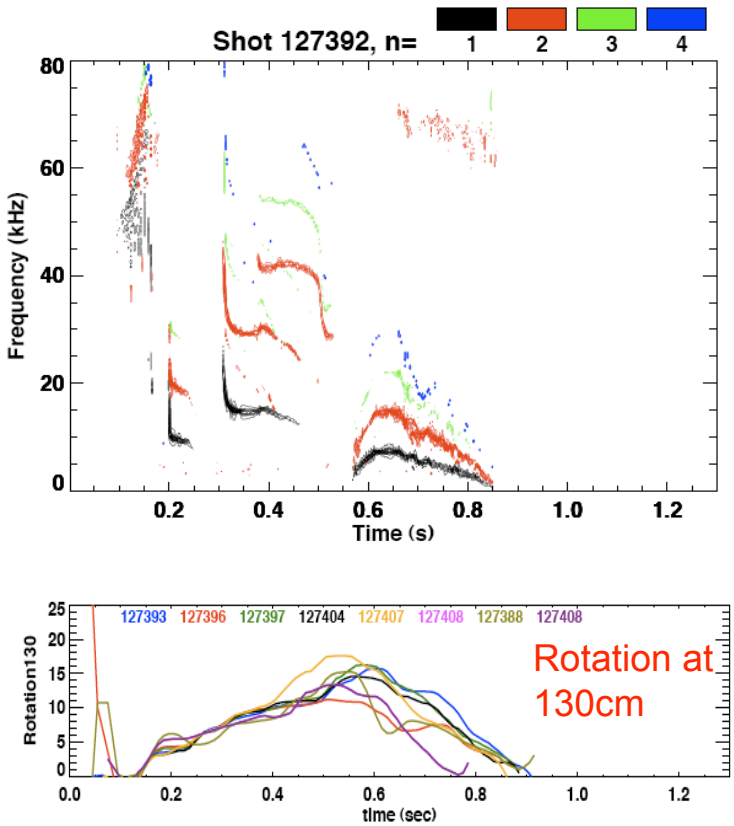
Early MHD Clouded Results

Shot Type 1 (7 instances of 22)



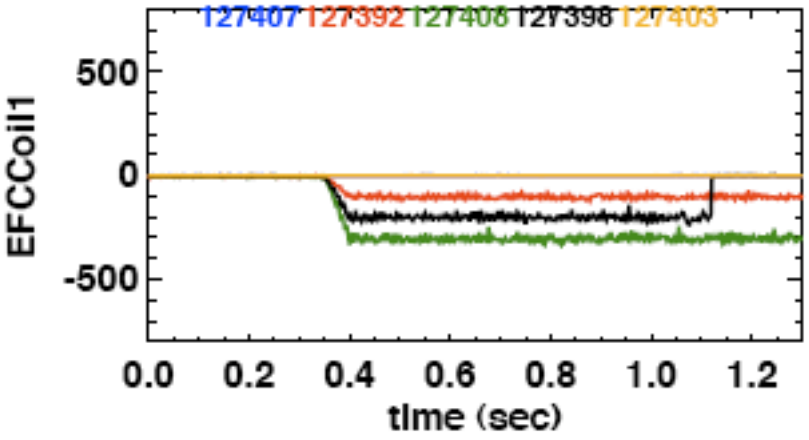
Most H-modes at 120 msec

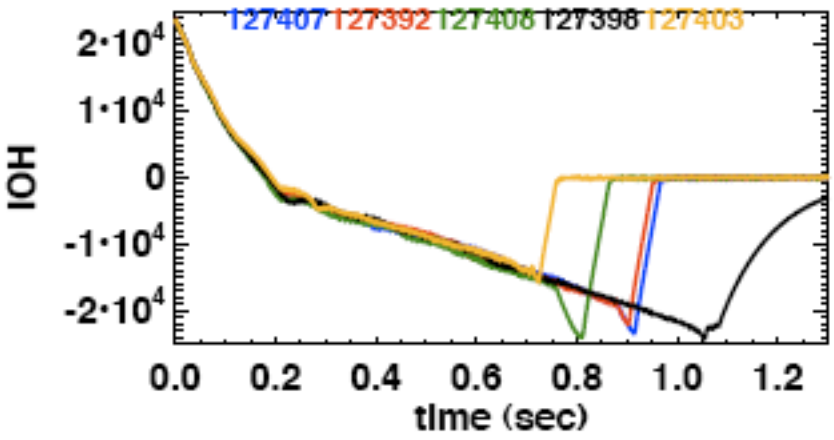
Shot Type 2 (7 instance of 22)

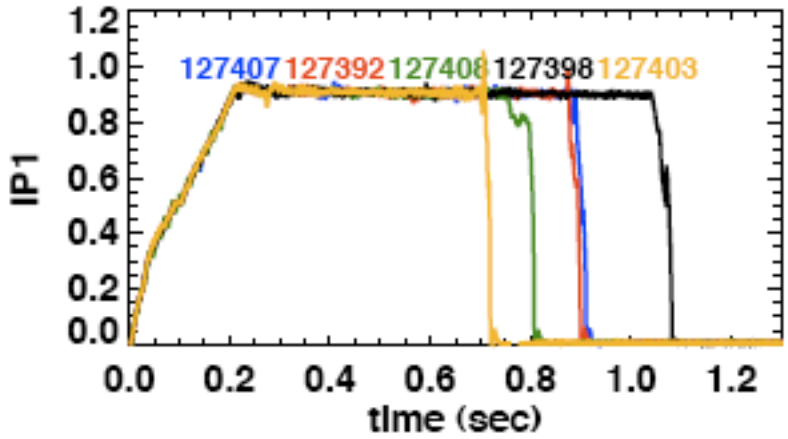


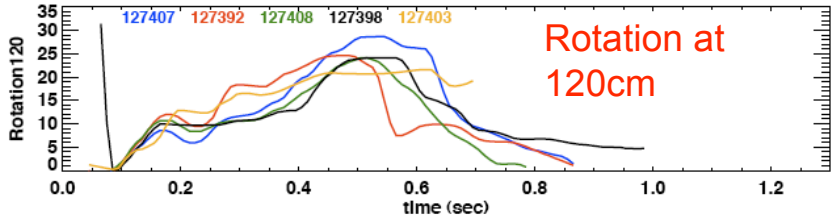
Most H-modes at 145 msec

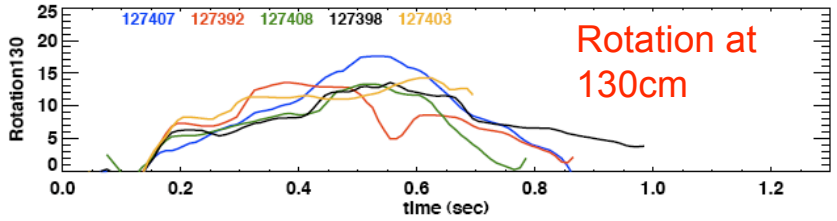
Nevertheless, Some Evidence of Asymmetrix Response











- *Reload of this shot failed on the current ramp.*
- *Previous n=3 experiments done later in run, post-lithium…much more reproducible.*
- *That was NOT an RT EFIT shot, which is why we switched to the fiducial reference.*
- *Machine got worse during the week…similar shots ran very poorly for S. Sabbagh on Thursday.*