

## **Produce a 500kA CHI discharge through experiments on TF scan**

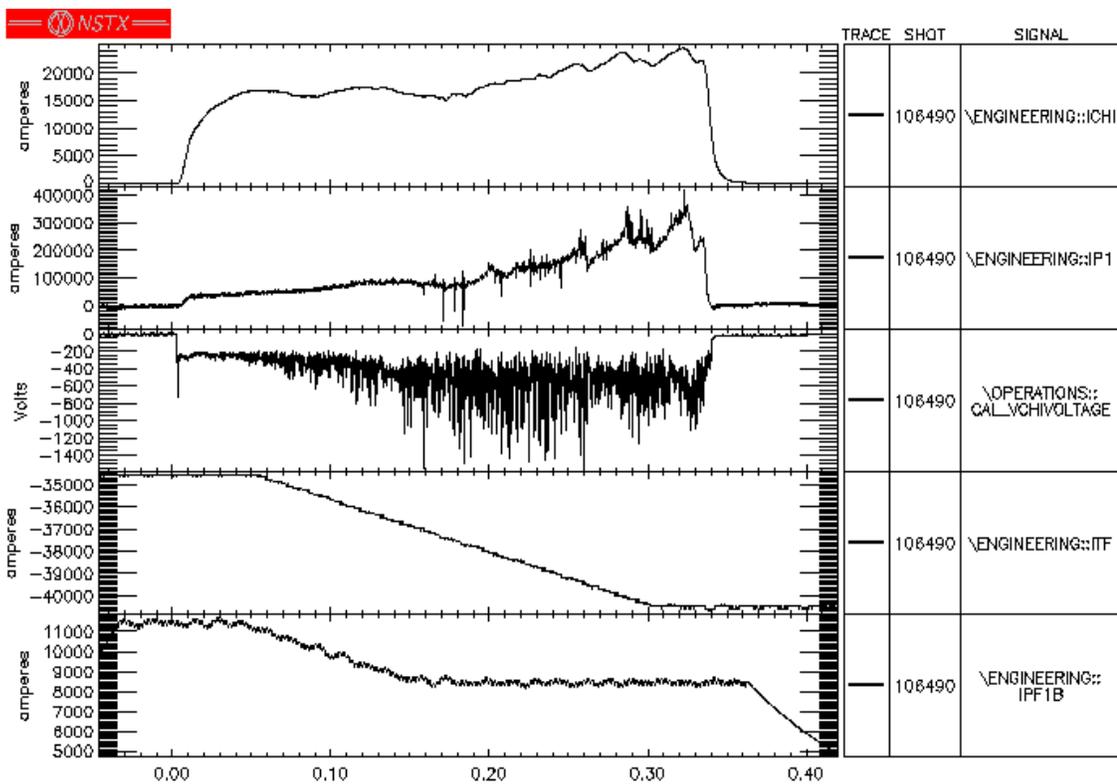
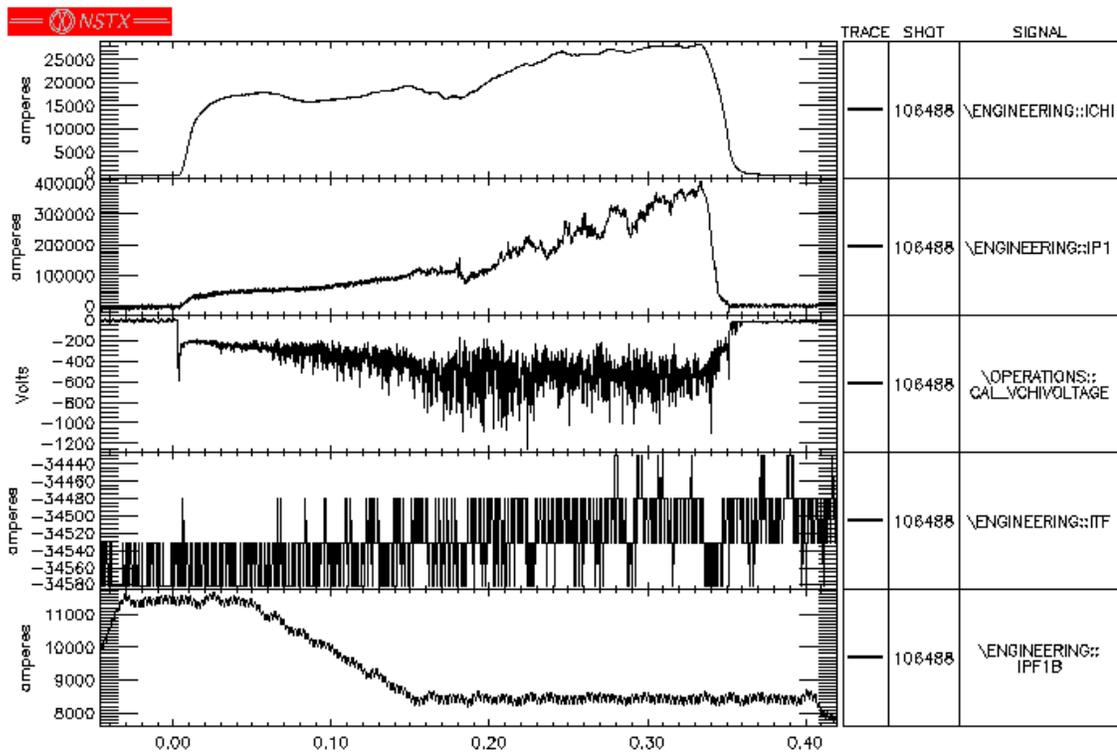
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### **Goals:**

1. Increase toroidal current to 500kA by increasing the toroidal field.
2. Produce discharges with a reasonable high current flattop (for example 300 to 350kA for 50 ms) for use as a target for discharge characterization and for use as a target for auxiliary heated discharges.
3. Arc detection algorithm modified to allow TF ramps as shown by shots 106490 to 492.
4. Procedure will be as follows:  
Restore shot 106488  
Implement 15 to 20 min HeGDC  
Use 1330 Torr on LDGIS, trigger at -20ms, NBI gate valves closed  
Impose a TF ramp in steps (0.29T at 100 ms to 0.45T at 330ms)  
Increase VCHI to increase ICHI, which should increase Toroidal current
5. Repeat with TF ramps to reduce TF to about 0.15T  
Objective is to see changes to the absorber arc behavior  
Effect on the n=1 at different values of the TF (but similar values of Ip)  
Effect on large amplitude oscillation in the Ip signal  
Changes to the soft x-ray emission

Initial discharges with TF ramps: 106488 (LDGIS @ 1330 Torr, 15 min HeGDC, 0.29T) Shot: 106490: Ramp TF from 0.29 T to 0.34 T (no arcs, but ICHI drops by approximately the ratio: 0.29T/0.34T, current multiplication stays about 14 - need to increase V-CHI).



Shot 106491: (ramp TF from 0.29 T to 0.375 T & Increase VCHI from 800 to 825 @ 200ms and from 840 to 850 at 330ms. Shot 106492: Restore 106490, 15 min HeGDC, LDGIS at 1300 Torr & increase VCHI from 840 to 875V at 330ms. Would reducing ITF from 200 to 330ms avoided absorber arc?

