

# **Solenoid-free Plasma Start-up in NSTX using Transient CHI**

## **Outline:**

### **(A) Short time duration high current discharges**

1.1  $I_p = 160\text{kA}$  case shot with equilibrium reconstructions at several time points showing changes in plasma shape and inductance.

- LRDFIT (Menard)
- EFIT (Sabbagh)

1.2 Radiated power profiles (S. Paul)

2.0 TF scan results

- include data from old long pulse CHI case

3.0 Voltage scan results

4.0 Result of increasing both TF and injector flux

### **(B) Long persisting plasmas (>200ms)**

- Soft x-ray results (K. Tritz)
- FIR data (K.C. Lee)
- Fast camera data (R. Maqueda)

## **(C) Comparison with results obtained in HIT-II**

- include effect of edge neutrals
- Thomson scattering results

## **(D) Discussion**

- Improvements this year that led to more than doubling the current
- Discharges with and without absorber arcs
- Implications for future machines