

# Non-Inductive Initiation and Current Sustainment



Non-Inductive current drive an essential element of ST devices

## Initiation

- ECH preionization
- CHI ( $\sim 0.5$  MA)

## Sustainment

- High Harmonic Fast Waves ( $\sim 1$  MA driven)
  - Strong single pass absorption
  - Good wave accessibility
  - “Regionalized” deposition for profile control
  - Electron heating for increased bootstrap current
- Bootstrap (Maximize  $b_{\text{bootstrap}}$  at high  $k$ )
- CHI for edge current drive of  $\sim 0.25$  MA for high  $b_T$  goal
- NBCD

Fully-relaxed j-profiles require multi-sec. pulse duration