

# MHD Phenomena and Disruption Characteristics in SST-1 Early Plasma (EX/P5-30)

- Steady State Tokamak 1 (SST-1) with aspect ratio  $> 5.2$  observes MHD phenomena and disruption characteristics similar to the ones reported by other low, medium and high aspect ratio tokamaks.
- SST-1 experiments ( $90\text{kA} \leq I_p \leq 113\text{kA}$ ,  $2.4 \leq q_a \leq 4$ ,  $B_T \sim 1.5\text{T}$ ,  $\text{H}_2$  Plasma) report MHD instabilities - saw teeth,  $m/n=1/1$  and  $m/n=2/1$  tearing modes.
- MHD regimes such as saw teeth , saw teeth coupled with Mirnov oscillations suggest  $m/n=1/1$  triggering  $m/n=2/1$  tearing mode, which further leads to disruption.
- Probable reason of precursor event or disruption initiating event is the radial plasma movement due to inadequate radial position control, which further leads to thermal quench and consequently current quench.