

XP935: Search for multiple RWM behavior at high β_N

Goals

- Determine if unstable RWM is born from observed, stable RWM (with ω at peak resonant field amplification – XP931), or a 2nd mode. **Either result is important:**
 - If same mode, supports single mode physics model; key conclusion for RFA control of NBI (future milestone)
 - If second mode, supports multi-mode theory, PRL-level conclusion, key conclusion for RWM control in ST, also, key conclusion for RFA control of NBI
- Determine β_N dependence of RFA for these modes near marginal stability
- Determine effect of ω_ϕ on both modes as marginal stability approached
- Determine effect of active $n = 1$ control for these modes near marginal stability

Status (XP ~ 75% completed)

- Scan in normalized beta completed
 - Most shots do not have MSE; can use baseline record $\beta_N = 7.2$ shot for analysis
- co-rotating 30Hz seed fields appear to be amplified more strongly than counter, consistent with RFA
- 20-30 Hz activity was shown to increase in radial extent as β_N increased
- The observed growing RWM appears to be independent of the 20 - 30 Hz activity (analysis continues)

