XP202: Characterization of the Resistive Wall Mode in the Spherical Torus

Run plan

Perform gap scan and diagnosis of resistive wall mode

Task	Number of Shots
A) Reproduce target plasma: - Reproduce LSN 107988, I_p = 0.8 MA, B_t = 4.0 kG (attain / maintain H-mode), outer gap ~ 6-8 cm - If RWM is not observed, bring full power NBI earlier to increase pressure peaking - Vary H-mode timing to achieve the best pressure peaking to observe and maintain RWM if needed	4
B) Alter timings to sustain $\beta_N > \beta_{N\text{-no-wall}}$ for > 10 τ_{wall} (i.e. drop one NBI source after exceeding no-wall limit)	2
C) Vary plasma / conducting wall gap on most favorable configuration above (reduce to 4-5cm, and 1-2 cm)	4
D) Vary B_t to determine dependence of critical rotation frequency on Alfven frequency (4.5, 3.5, 3.0 kG)	4
E) Vary Thomson laser pulse timing to diagnose δT_e before / after RWM onset	4
F) Insure that sequence of shots 1,2, and 3 NBI has been taken for a given toroidal field	2
G) Vary B_t, n_e together to determine effect of combined alteration on critical rotation frequency (if time permits)	4
Total: 24 (max)	