
Research Operations Division Boundary Physics (*H. Kugel*)

- ◆ Performed boronizations 41 – 43
- ◆ Movable-anode GDC will be installed at Bay K top next week
- ◆ LPI will be reinstalled next week after off-line maintenance
 - ▶ Injected two pellets but bearing failed locking the turret
- ◆ UCSD Fast Probe used for experiments after upgrades and testing
- ◆ Many boundary physics XPs/XMPs performed:
 - XMP-36 "SGI Commissioning" (Soukhanovskii) - completed
 - XMP-38 "Evaluate Hot Boronization " (Kugel) - completed
 - XP-505 "Ohmically Heated H-Mode" (Bush) - started
 - XP-515 "Recycling After Lithium Pellet Injection" (Kugel) - started
 - XP-516 "Supersonic Gas Fueling" (Soukhanovskii) - started
 - XP-520 "Divertor Regimes & Detachment " (Soukhanovskii) - completed
 - XP-523 "Edge/SOL Turbulence " (Boedo) - completed

Research Operations Division

Diagnostics (*D. Johnson, R. Kaita*)

- ◆ Diagnostics are running well
 - ▶ Comprehensive data for integrated analysis: EFIT, TRANSP, ...
 - Highlighted in NSTX presentations to FEASC Facility Review
 - ▶ NPA performed full spatial scans during LPI maintenance
- ◆ MPTS now taking data on 30 channels
 - ▶ Presently uncalibrated but expected to be analyzable later
 - ▶ Calibrations will start during maintenance week
- ◆ Installation of High-k Microwave Scattering continues
 - ▶ Focus next week on Bay K detection optics and waveguides
 - ▶ Detection system has arrived from UC Davis and is being characterized
- ◆ Many other diagnostic activities planned for next week
 - ▶ SSNPA, SFLIP, divertor views, new SXR cameras, IR cameras ...

Research Operations Division RF Systems (*R. Wilson*)

- ◆ HHFW system operating well
 - ▶ In two days conditioning (XMP-26) HHFW power up to 4 MW sustained
 - ▶ Phases 14m^{-1} and $\pm 7\text{m}^{-1}$
- ◆ Used for plasma experiments on early heating for rampup (XP-521) and heating efficiency (XP-527)
- ◆ Now directly digitizing (100MHz) RF probe signals and side band from the ORNL edge reflectometer
 - ▶ Use to search for parametric decay waves
- ◆ ECPI successfully injected into lower divertor chamber for CHI startup (XMP-39)

Research Operations Division

Physics Operations (*D. Mueller, D. Gates, R. Raman*)

- ◆ PF1A coils at full rating used for high κ , δ plasmas up to 1.5MA
- ◆ Extended TF flattop and OH pulse length allowed 1.4s flattop at 0.7MA
- ◆ rtEFIT is now operating and can be used for plasma control with
 - Full data acquisition (352 input data channels): no sign of RF noise
 - Updated Green's function tables with new PF1A and structures
- ▶ Get good agreement in boundary position with offline EFIT
- ◆ PCS has controlled SPA to produce static and rotating $n = 1$ & $n = 3$ radial field perturbations for experiments
- ◆ First CHI experiments conducted with gas & ECPI injected into lower divertor chamber (XMP-39, XP-531)
 - ▶ Initiated CHI discharges using factor 10 less gas than in 2004
 - ▶ Achieved I_p/I_{CHI} up to 150 using crowbar to reduce injector current