

# Near-Term Goals: Storage Ring

- Improved beam stability:
  - increased orbit correction rate (20 Hz ?) coming soon (FL, OS, GD, MB, LE, HS, RS, ...)
  - ID feedforward coming soon after (MB, LE, OS)
  - steering on ID x-ray BPMs coming soon (GD, FL, OS, LE)
  - corrector power supply improvements (ASD-PS)
  - 60 Hz lines from RF systems (DH, KH)
  - *how good is good enough?* (CATs)
- Eliminate the bunch train gap (GD)

# Near-Term Goals: Storage Ring

- Begin centering of the beam in BPLDs and magnets (GD, LE, OS, ASD-SVY, CATs)
- AC correction of the CPU (LE, XFD-MD)
- Reduced horizontal emittance
  - 3 nm lattice in progress (MB, LE, VS)
  - doubt we can get much under 3 nm with this machine
- Routine lattice correction (LE, VS)

# Near-Term Goals: Storage Ring

- Individual sector beta adjustments
  - rounder beam (5:1 aspect or less) (MB, LE, KH, VS)
  - converging beta (LE, VS)
  - longitudinal injection (YC, LE, VS)
- 6 GeV configuration
  - create configuration (LE, VS)
  - study lifetime and instability limits (LE, KH, VS)
  - study beamline/experiment effects (CATs)

# Near-Term Goals: Storage Ring

- Increase current to 130mA (LE, DH, KH, OS, CY)
- Increase single-bunch current (KH)
- Bunch cleaning (NS, CY)

# Near-Term Goals: Injector

- Physics design of subharmonic capture cavity for booster (MB, NS)
- Design and commission low-emittance booster lattice with 20% reduction (MB, NS, ASD-PS)
- Implement interleaving for LEUTL (MB, FL, JL, ASD-PS)
- Put waveguide switching system for linac into routine operation (MB, SP, RS, ASD-VAC, ASD-RF)

# Mid-Term Goals

- Canted undulator commissioning (LE)
- Long straight section for IXS (LE, MB, ASD-ME, ASD-VAC, XFD-MD)
- Stronger sextupoles (ASD-PS, XFD-MD)
- Commissioning subharmonic capture cavity for booster (MB, NS)
- LINUX cluster and code parallelization for SR simulation (AOD-OAG, AOD-CS).
- Memory scanner upgrade for non-aliased averages (AOD-DIA)

# Mid-Term Goals

- Solve rogue microwave problem (GD, XS, ASD-VAC)
- Top-up improvements
  - Well-matched kickers for quiet top-up (LE, ASD-ME, ASD-PS)
  - Improve feed-forward compensation of septum magnet (LE, ASD-PS)
  - Multibunch injection (LE, NS, ASD-CTL, ASD-PS, ...)
- Standardized beamline data to accelerator controls system (GD, ASD-CTL, CATs)

# Long-Term Goals

- Produce a workable design for XPS, a next-generation ring (MB, LE)
  - Horizontal emittance under 0.3nm, long straights, high current, flexible beta functions, etc.
- Produce a workable design for a low-emittance booster to support XPS (MB, NS)
- Commission it!