

nanoBPM schedule

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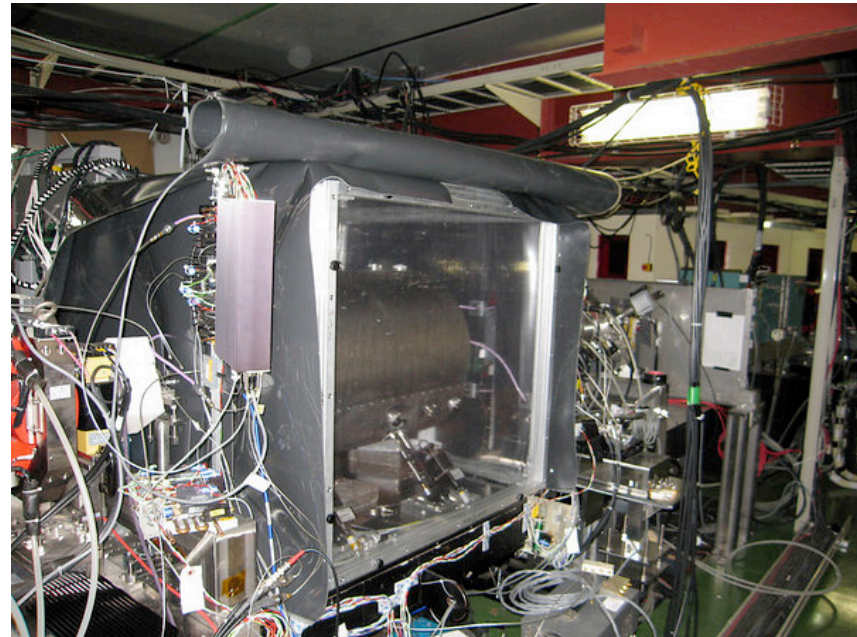
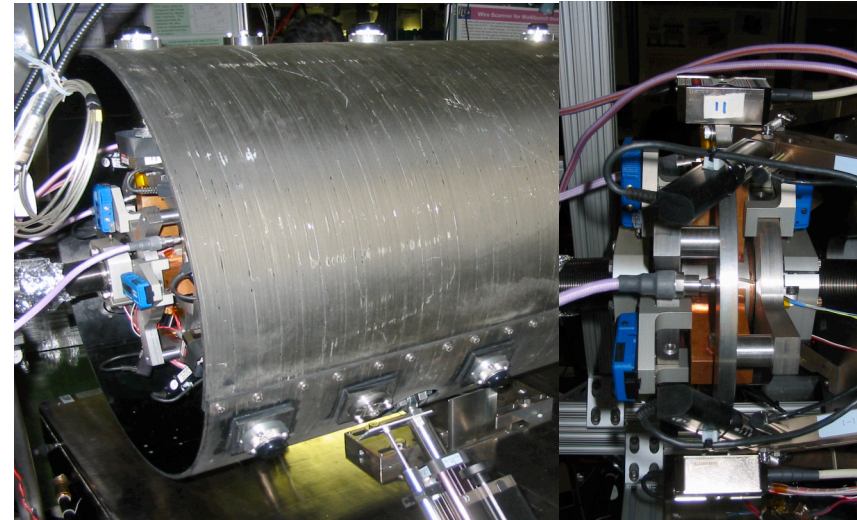
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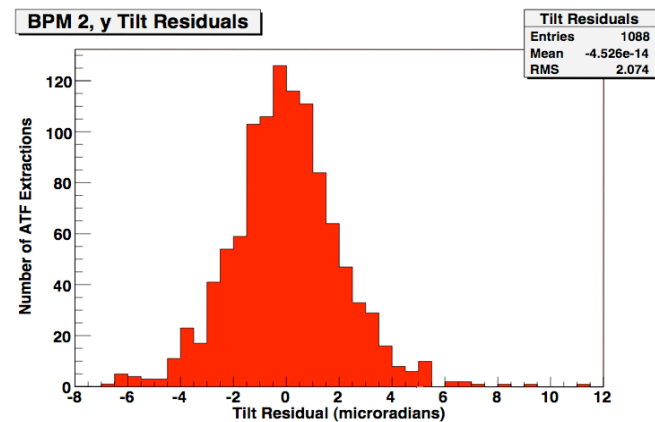
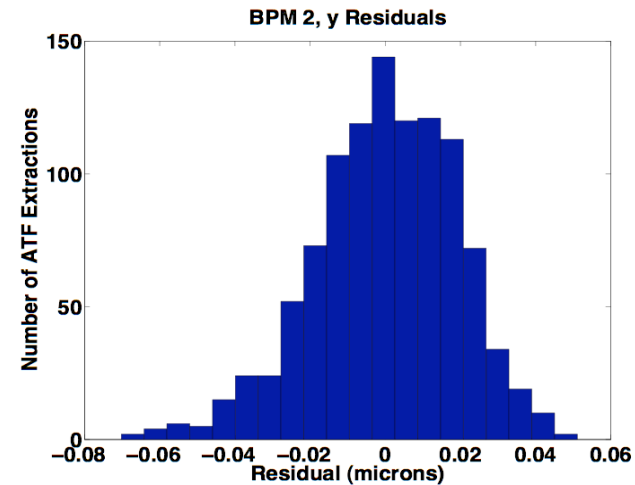
NanoBPM schedule

- Still interest in continuation of nanoBPM in ATF2
 - Need for BPM test stand
 - Processing electronics and algorithms
 - First/early pulse calibration
 - Automation and readout
 - BPM stabilization, thermal, mechanical
 - Thermal monitoring and control
 - Position (nanoGrids)
 - Triplet stabilisation with wrt to other BPM systems
 - Mona Lisa



NanoBPM program in ATF2

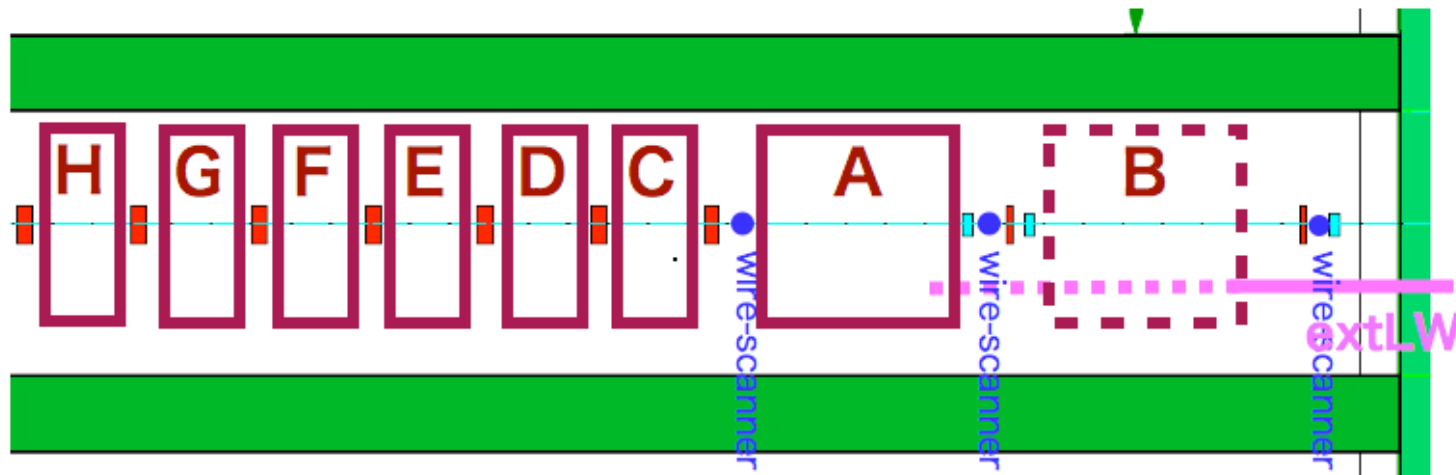
- Resolution performance verified
 - Vertical 15.6nm
 - Angular vertical 2.1 μ rad
 - Stability over multiple hours
- Longer term plans
 - Calibration systems
 - Long term stability
 - Full exploitation of BPM monitoring systems
 - Electronics noise not dominant
- Multibunch
 - ILC like beam structure
 - Extraction of beam positions



ATF nanoBPM program

- Operation 2007/08
 - Attempt to reach electronics thermal noise limit
 - Demonstrate multibunch operation
 - Essential for ATF2 Q-BPM operation with ILC train
 - Test stand for ATF2 electronics and analysis
 - Diagnostics of existing slow systematic drifts of extracted beam
 - Magnet cooling water
 - Extraction
 - Dispersion correction
 - Full monitoring of BPM system
 - Electronics (ATF2 electronics)
 - Mechanical (nanoGrid)
 - Refactor nanoBPM into Q-BPM like system (i.e. test readout and algorithms required for ATF2 during ATF operation)

NanoBPM location in ATF2



- Either location A or B reasonable for nanoBPM
 - Optics as yet not checked
 - Low dispersion important
- Proximity to laserwire IP could be beneficial to subtract beam motion from laserwire measurements
- Cross check of ATF Q-BPMs
- Independent test stand, not essential to ATF2 operation but similar enough to Q-BPMs

Installation schedule

- Not overly complicated
 - Not essential for ATF2 commissioning
 - Complete system might be able to move without complete disassembly
 - Restraint of flexures
 - Between space-frame and carbon metrology tube
 - Individual BPM hexapod flexures
 - Move complete system including table?
- Disassemble and reassemble at start of summer shutdown 08,
 - Single operation (one to two weeks)
 - Require input and personnel from LLNL and SLAC
 - Assistance from UK