

ATF2 Flight Simulator Plans



- Core software and EPICS plans.
- Application plans.

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Core Software

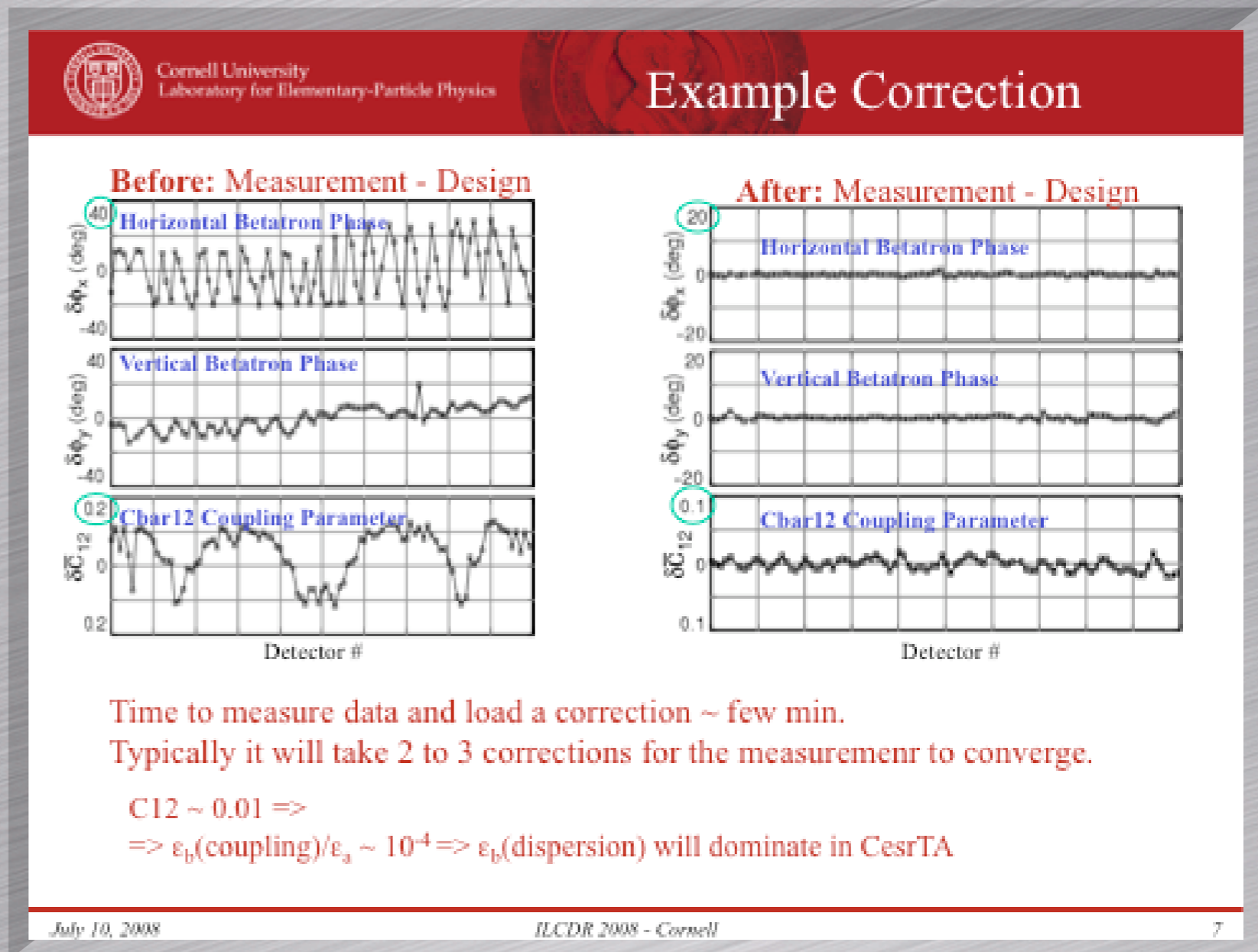
- Server currently runs at ~1.4 Hz max
 - Mainly due to EPICS CA access time for 100's of PVs.
 - Can speed up through better use of monitors
 - Needs some structural changes to FS server.
 - Aim to keep up with 3.12Hz running if possible.
- Finish debug of core apps
 - watchdogs
 - thread support
- Improve speed and reliability of server-client communications
- Documentation

Application Plans

- Integrate Sextupole multiknob routines into GUI-based interface.
 - More generic multi-knob interface with user-definable linear and non-linear knobs.
- Automation of wirescans?
 - Use MQD18X - MQF16FF to interpolate beam location wrt. last wire positions.
 - Automate finding and scaling of wire scan parameters and data acquisition.
 - Requires EPICS access to wirescanner movers and detector.
- Automated/user-friendly EXT-IP matching procedure?
 - Use FS-MAD interface.
- Feedback

BMAD for DR Corrections

- D. Sagan et al. from Cornell want to use BMAD s/w developed for CsrTA
- Looking at using FS interface similar to existing MAD, PLACET & SAD interfaces
- Need to implement ET turn-by-turn readout into FS
 - ET already controllable and can be readout through EPICS.
 - Need concept of multi-turn readouts in FS.



Include Linac & BT?

- FS currently has DR + EXT + FFS + DUMP
- FS deals with this as a single line, effectively deals with final turn DR orbit + extraction.
- Need for inclusion of Linac + BT?
 - Need to think about how to do this- probably use multiple beamlines within Lucretia, needs large code modification

Control System

- EPICS control requests:
 - Control of MW*X movers
 - Range, step size, go command
 - Detector readout
 - Control of DR freq ramp
- Synchronicity of data acquisition across different IOC's
 - Use of timesync through common ntp server good enough?
- Status of ability to remove use of “nanobpm socket server” for DR BPMs, DR magnets?
- What is needed to routinely run @ 3.12 Hz?

Sextupole Mover System

- Application of IP sextupole multiknobs will benefit from very robust, accurate and fast mover system for sextupoles.
- Need to study ways to optimise current system for these 5 magnets.
- Faster motor driver, new ADC for readbacks with more up-to-date EPICS VME system.
- Fix sources of non-orthogonality between x/y/roll DOF?