

Software test and experimental results

- ✓ Testing correctness of online context, 'transactions' etc. (knobs and orbit correction) – ok. Feedback: probably need an 'immediate trim' application.

Current sequence:

1. Compute settings -> create knob-> save knob in db -> generate initial knob settings -> knob available for trim
2. Compute settings (orbit correctors) -> load into yasp-> trim

Proposed sequence (to be discussed):

1. Compute settings -> if necessary trim (in fractions) -> save settings as a knob if useful
- ✓ Knob creation – software ok
 - ✓ Orbit correction – software ok ; cross-check with yasp ok; no beam check due to bad bpms;
 - ✓ Multi-turn data for coupling analysis (Frank)

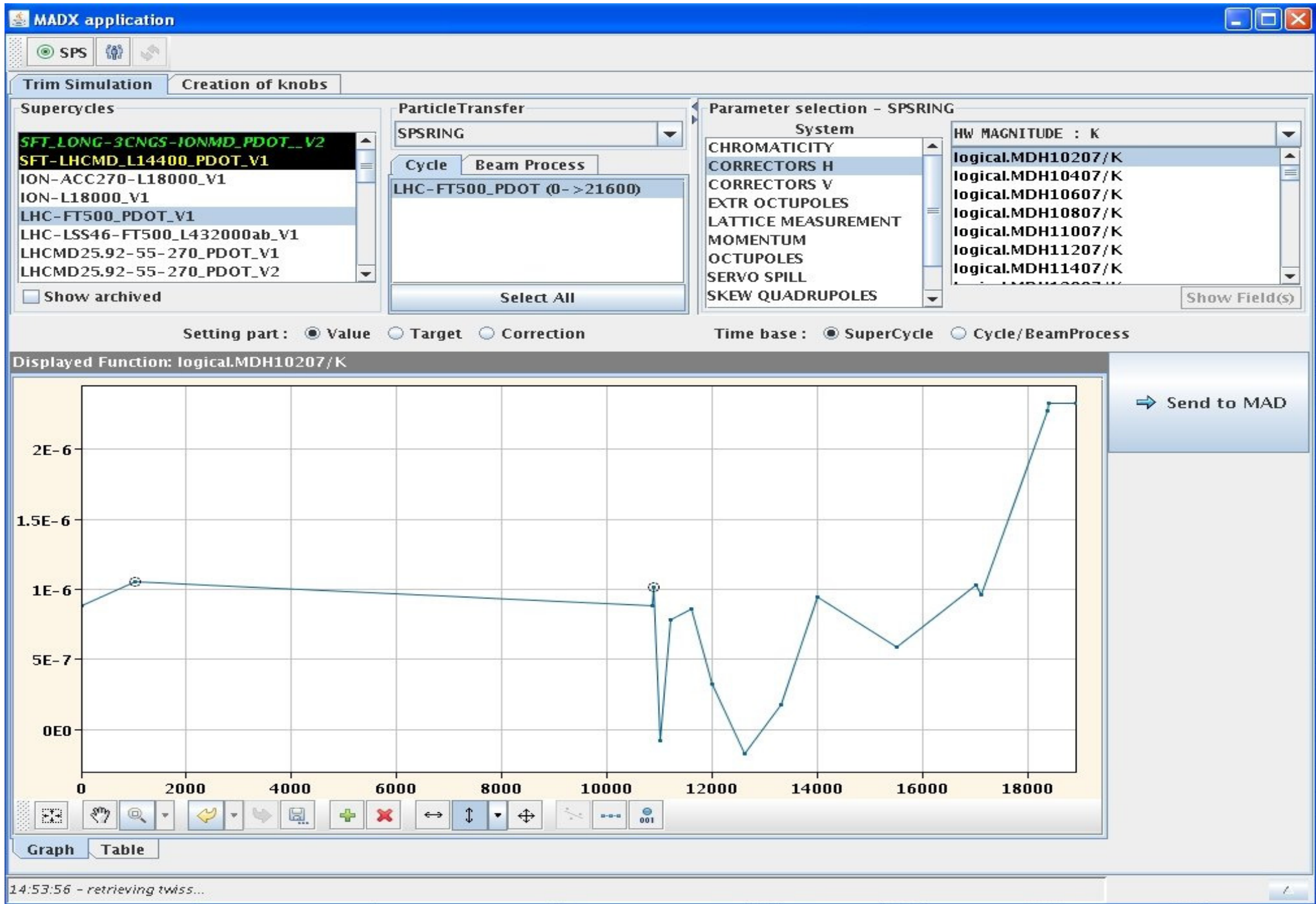
Immediate plans (October 2007)

- ✓ TI2 commissioning – to be defined (compare optics to beam screen data, match optics,...)
- ✓ Finishing trim simulation application (see this slides, later)
- ✓ Testing trim simulation during remaining SPS run (including optics model benchmark)

Longer term plans

- ✓ Sliding bump application; LSA knob application run through OM server (ML et al.)
- ✓ On-line repository for LHC (including model selection, fitting procedures etc.)
- ✓ Testing trim simulation and others with LHC supercycles
- ✓ Write documentation
- ✓ Release in the strict sense
- ✓ Analysis toolkit – many bits and pieces available but needs organising

Trim simulation screen-shots (from Jutta Netzel)



Trim simulation screen-shots

MADX application

Trim Simulation Creation of knobs

Supercycles

- SFT_LONG-3CNGS-IONMD_PDOT_V2
- SFT-LHCMD_L14400_PDOT_V1
- ION-ACC270-L18000_V1
- ION-L18000_V1
- LHC-FT500_PDOT_V1
- LHC-FT500_PDOT_V1
- LHC-FT500_PDOT_V1
- LHC-FT500_PDOT_V1

ParticleTransfer: SPSRING

Cycle: Beam Process

LHC-FT500_PDOT (0->21600)

Parameter selection - SPSRING

System: CHROMATICITY, CORRECTORS H, CORRECTORS V, EXTR OCTUPOLES

HW MAGNITUDE : K

- logical.MDH10207/K
- logical.MDH10407/K
- logical.MDH10607/K
- logical.MDH10807/K

Madx result display

Beam parameters (for beam size)

| E_h | E_v | σ_{Eh} |
|-------|-------|---------------|
| 3.0 | 3.0 | 0.0010 |

Particle Transfer Element Types

SPSRING

- HKICKER
- HMONITOR
- INSTRUMENT
- MONITOR
- OCTUPOLE
- QUADRUPOLE
- RBEND
- RCOLLIMATOR

Select All

OPTICS BEAM

SPS-LHC-2007v1 B1

Function parameters

| Y Display param... | X Display param... |
|--------------------|--------------------|
| Beta | Position |
| Sqrt(beta) | |
| Alpha | |
| Phase advance | |
| Dispersion | |

Views

Horizontal plane [05/10/07 16:12:18]

Vertical plane [05/10/07 16:12:18]

16:12:18 - Beta for optic SPS-LHC-2007v1 displayed