

ACQUISITION EQUIPMENT

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Four Talks :

- [Vittorio Remondino](#) (Room Temperature at Factories)
- [Hubert Reymond](#) (MMP6 Toolkit)
- [Maryline Gateau](#) (Functionality of MMP)
- [Laurent Deniau](#) (Data Analysis)

All speakers from CERN, which reflects the intense activity in this area at CERN.

Topics presented covered hardware, acquisition software, data analysis details, as well as some early results.

ROOM TEMPERATURE MEASUREMENT AT FACTORIES

First line of defense against bad magnets.

Early detection of defects :

- Quick feed down to production
- Minimize number of problem magnets

The team deserves to be congratulated for already detecting an error in production, which could be easily rectified, thanks to the early measurements.

I wish this result was presented with more emphasis, giving clear plots of harmonics before and after correction.

Early detection of trends

Already a trend has been observed toward increasing standard deviation in all harmonics. CAUTION : A similar trend was observed in the middle of RHIC dipole production, which was traced to a problem with coil curing shims.

HARDWARE STATUS

A minimal set is operational

All systems to be complete by the end of 2002

An observation : $\pm 0.3\text{mm}$ accuracy in 15m magnetic length appears unnecessary for the warm measurements at the factories

ACQUISITION SYSTEM

Acquisition system is at the heart of the entire magnetic measurement effort (other areas could be viewed as 'souls').

Reliability and consistency of the system can be an important factor in maintaining production schedule.

(It can also enhance or spoil the reputation of the entire magnetic measurement team)

System design appears to be on solid foundation :

- Sun workstation
- VME crates
- Lots of integrators (Trigger synchronism is perhaps something to look into).
- Labview based

MMP6 Toolkit

- 15 devices can be driven
- Up to 6 types of each device
- Current cycle and axial motion control
- On-line Analysis
- Exporting to databases

Observation

Managing distribution of up to date software can be challenging, particularly with Users in many countries.

FUNCTIONALITY OF MMP

Some Nice Features :

- Easily tailored to different types of measurements
- Different user privileges (BUT, assigning privileges without impacting work can become tricky !)
- Full log file ⇒ electronic record of all activities.
(The log file should be a protected file against unauthorized tempering)
An idea : It could be a binary file, instead of ASCII.
- Latest coil parameters loaded from a database. (Are the coils identified automatically ?)

ANALYSIS CAPABILITIES

- Enormous possibilities to display virtually any item of interest.
(BUT, could become more complex and/or slow to use, particularly when the database fills up with data for many magnets).
- A 21-parameter description of harmonics may not be unambiguously determined from the available data.
- The magnet test database structure appears to be finalized.