

Fast Feedback Tools

Lessons learned from CERN 2006

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Experience – Online tools – Offline tools

Experience from CERN 2006

Light yield of only 12 in August

Could be solved by higher voltage

Coherent noise in August

Could be solved by hardware (HAB) changes

Temperature increase due to higher packing density in October

Could be solved by external cooling for 2nd week

Long turn-around of calibrations

Incidences of false beam parameters lead to bad or unusable data,
e.g. some positron runs in October

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Long turn: Examples for the neat experimental challenges
that prevent us from getting bored

Incidences:

e.g. some positron runs in October

lata,

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Incidences of
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Development, debugging and tuning the
tools took time – which we don't need anymore

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Temperature

Faster response is definitely needed!

October

Could

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Online: Working Point

Optimization of working point requires:

- Muon and gain data at different voltages

- Fast mip and gain calibrations

- Analysis code for half-module wise optimization

Suggestion:

- Run the standard calibration code on binary files directly from the RAID either on `caliceana` or a similar machine in the control room -> Immediate processing 'on demand' possible

To be done:

- Documentation of calibration code

- Fast database update for setup-related information (slow control?)

- Analysis tool (simple, but has to be done and checked beforehand)

Offline: Data Quality

Fast data quality still within beam period provide chance of 2nd take

Extract and monitor from each beam run:

- pedestal stability
- mip stability (each run contains muons)
- noise level
- energy sum in GeV (approx. with fixed sampling fractions)
- energy sum with and without Čerenkov
- veto amplitude, secondary contamination
- ...

To be done:

Code development and documentation

Discuss responsibilities (offline shifts?) and resources (grid?)