Software Issues

Status report and plans

Niels Meyer, DESY

CALICE Analysis

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- Main drawback for progress at the moment

- Quite some momentum at the moment: Daniel joined, Paul has been at DESY

- Work packages at the moment:

  - Alignment constants: Paul

  - Simulation, fit constants: Daniel

  - Hit finding: NM

- Main questions at the moment:

  - Is alignment stable? (process all CERN data)

  - Can the scattering matrix for fitting be parameterized?

Tracking II

- Expect code changes at the moment:
  - Compatibility between MOKKA and TBTrack
  - TBTrackMapper re-written, some bugs avoided,
    TDC mapping in DB needs to be included in steering:

    ```
    /cd_calice_beam/TBTrack/TdcMapping

    /cd_calice_cernbeam/TBTrack/TdcMapping

    /cd_calice_fnalbeam/TBTrack/TdcMapping
    ```

  - Changes expected in fitting, hit time treatment in MC, ...
  - Re-discuss non-standard DB interface

- Documentation is evolving at:
    https://twiki.cern.ch/twiki/bin/view/CALICE/TrackingDocu

Calorimeter Alignment

- Needs reliable tracking, so cannot always be parallelized to effort on track reconstruction

- Some bugs on stage position treatment fixed recently

- Staggering introduces correlation between different DB folders, better admin tools would help a lot

- Lack of experts, all this done by myself at the moment

- Great help comes from David, who runs tracker-to-detector alignment and works on new alignment method using mip tracks rather than showers

Energy reconstruction

- HCal
    - Temperature correction on single runs shown since last autumn
    - Have new code and constants for CERN'07 for automated T-correction of arbitrary run
    - Currently revisiting constants for all periods, followed by code release (had hoped to have it this week already)
- SiW ECal
    - Some code fixes for missing noise information during digitization
- TCMT : Saturation? T-dependence? No news...

Miscellaneous

- Multiplicity counter
  - Tools to extract calibrations, storage classes, methods to apply multiplicity cut

- Beam energy
  - From beam line: not always available at CERN, still missing at FNAL
  - Nominal: only available from e-Log, very tedious to browse or to integrate into data stream

calice_run

- Things converge, but are still far from being complete

- Reprocessing whole data set quite some effort, most analyses still based on relatively few runs

- If you wait for new processing, get started by running reco *as is* yourself with tools at:
  CVS: `/calice/calice_tools/calice_run`

- Some documentation provided by README, otherwise contact Niels.Meyer@desy.de

Alignment

- Currently, we store alignment as hit positions
  - Incomplete geometry (cell sizes, neighbours)
  - Redundant information in output file
  - Updated alignment requires re-processing
- Alternative:
  - Alignment on analysis level
  - Needs careful DB tagging for reproducibility
  - Faster turn-around, but requires user-friendly tools