SDHCAL software status

Gérald Grenier

IPN Lyon/Université Lyon 1

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Quick status

Simulation
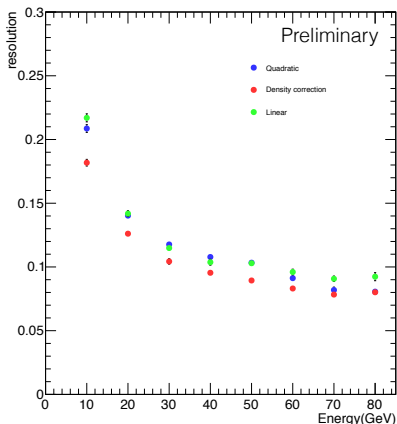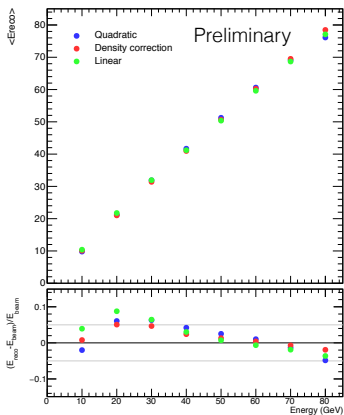DD4HEP implementation of SDHCAL done. Will need to ensure long term maintenance activity.

Reconstruction
- Digitizer fully implemented in ilcsoft
- Energy reconstruction OK in ILCSoft v01-19-05 with ILDConfig v01-19-05-p01.
- Work has started to look if package LCCalibration can be used to improve ILD option 2 calibration.

PFA
Work to improve arborPFA under study. See Bo Li's talk at ILD Analysis/Software meeting on January 31st 2018.
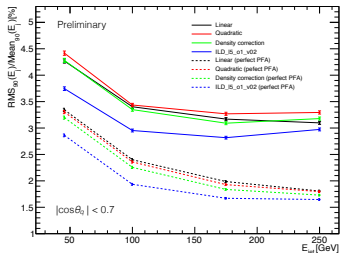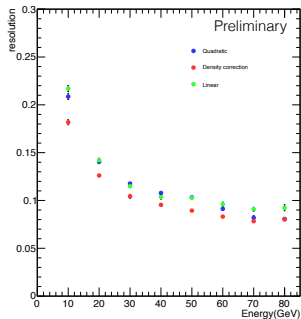
Reconstruction

- ▶ Calibration options implemented as PandoraPFA SDK energy corrections plugins.
- ▶ Simulation based on QGSP-Bertini, hadronic shower more compact than in real data, resolution poorer in simulation.
- ▶ Improving calibration should improve performance.

Reconstruction

Improving calibration should improve performance. (left red bullet to right green curves)

ArborPFA parameter tuning under study.

Conclusion

- ▶ SDHCAL simulation in good shape.
- ▶ SDHCAL digitisation in good shape.
- ▶ SDHCAL Reconstruction in good shape but not yet optimal.
- ▶ Studies to improve energy calibration (current parameters and new variables) and ArborPFA parameters tuning.