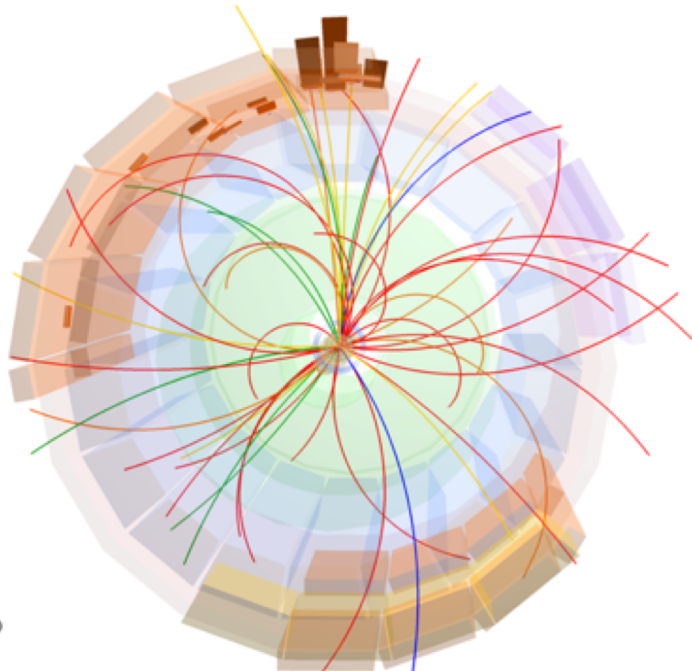


EMCAL in o2: Status and Plans



ALICE



Run:266438
Timestamp:2016-11-26 17:57:12(UTC)
System: Pb-p
Energy: 8.16 TeV
EMCAL L1 jet triggered event

Markus Fasel (ORNL)

For the EMCAL collaboration

ALICE Offline Week, Dec. 5-7, 2018



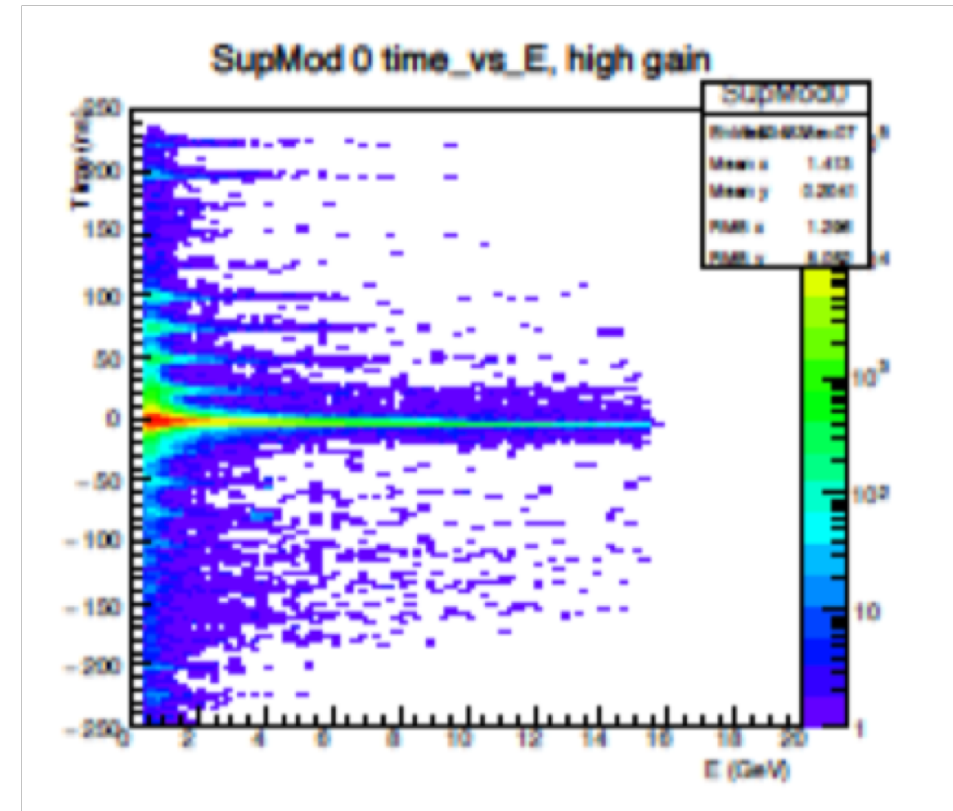
Done:

- Geometry
- Detector simulation

Ongoing:

- Digitization
 - Prototype existing
 - Improvements ongoing
- Pending:
 - Trigger simulation

- Prototype implemented
- Next: MC Label integration
- Refinements (noise simulation, energy/time smearing) ongoing
- Digits summable, allowing for pileup simulation
 - Even though EMCAL is triggered several bunch crossings fit within the readout time of the EMCAL

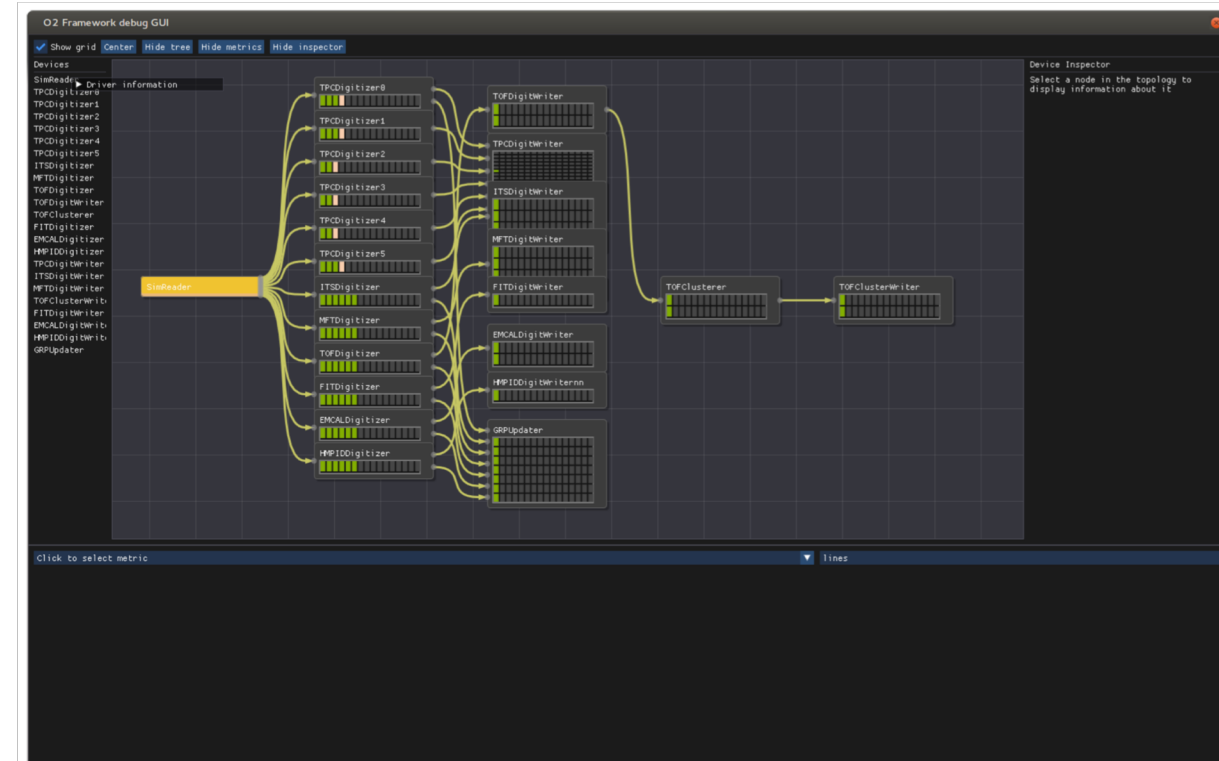


Digitization integrated into the digitizer workflow:

- DigitizerSpec
- DigitsWriterSpec

Plan for additional cell writer performing compression of the digits format to forseen cell format

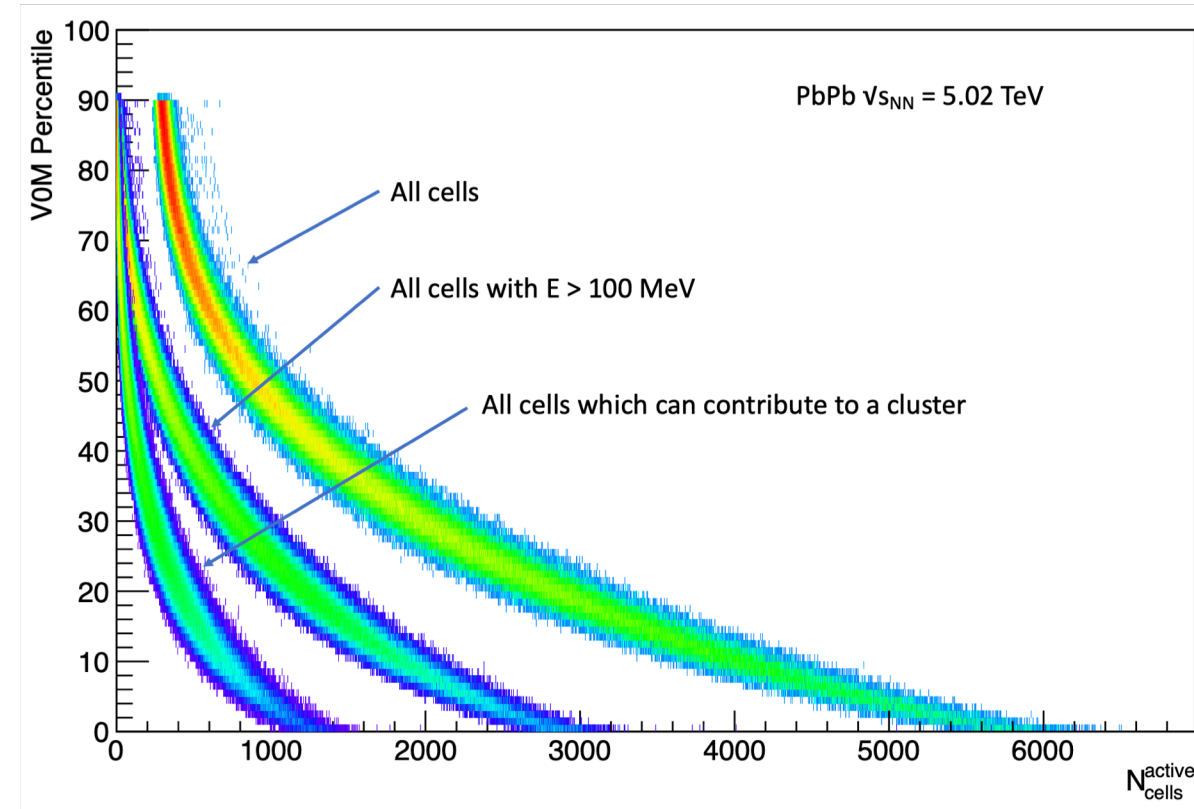
Reconstruction: No integration necessary – clusterizing will be performed on-the-fly



- Bad/Dead channel map
- DCS configuration
 - Trigger DCS settings (TRU/STU settings, trigger mask)

Reconstruction status

- New (faster) clusterizer, tested on the HLT in the PbPb run, to be ported to o2
 - Used on the EPN for online QC and in the asynchronous stage at analysis level
- Work on Raw Analyzer to be started in the first Quarter of 2019



EMCAL needs to write tower information persistently, but in a compressed format
 Compression during asynchronous reconstruction (Compressed Timeframe -> AOD)

- Calibration steps similar to what was done for run2
- Try to port bad channel calibration / time calibration to the EPN
 - Needed for
 - Online QC
 - Compression of the cell data
 - Eventually use machine learning methods to reduce statistics needs for bad channel calibration

- Currently 3 people working on EMCAL o2
 - Anders Knospe (University of Houston) -> Digitization
 - Ruediger Haake (Yale University) -> Reconstruction
 - Markus Fasel (ORNL) -> Simulation / Reconstruction
- Needs for 2019-2020:
 - QC development: 2 persons, each 0.5 FTE
 - Calibration development: 4 persons, each 0.5 FTE (CCDB, detector algorithm, bad channels at the EPN, timing calibration at the EPN)
 - Simulation: Trigger simulation: 1 person, 0.5 FTE