ITK October testbeam: Norway

- **We brought two 3D modules to the October testbeam:**
  - **SINTEF11: radiated at CERN, ~1.0*10^{15}CM^{-2}**
  - **SINTEF12: non-radiated, works fine in past two testbeam.**

- **Radiated module SINTEF11 was destroyed during the tuning:**
  - **The analog test scan is very bad without bias voltage, and it improves a lot at 10V.**
  - **Somehow we're not satisfied and increased the bias voltage to 50V. The leakage current increased a lot and didn't back to normal when we lower the voltage.**
  - **We found the two analog LV pins were in short. We suspect the fault was on the ASIC not on the PCB.**

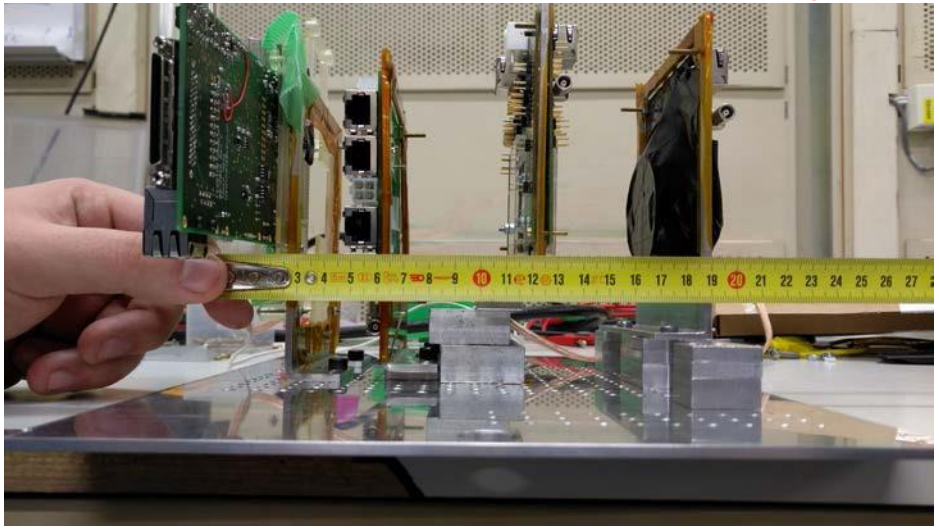
ITK October testbeam: Norway

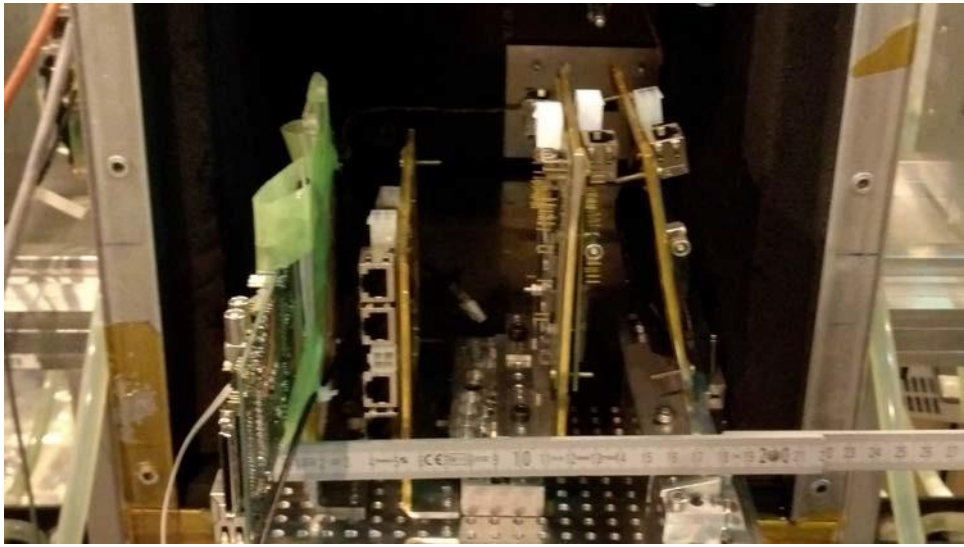
- **SINTEF 11 was removed from the box.**

- **SINTEF 12 in the beam to study the edge efficiencies, with different configurations:**
  - **two positions: straight and tilt (15 degree)**
  - **three thresholds: 3000e, 2500e and 2000e**
  - **different bias voltages: 5, 7.5, 10 and 15 V**

- **A good amount of data were collected, but not enough time for all the configurations.**

up





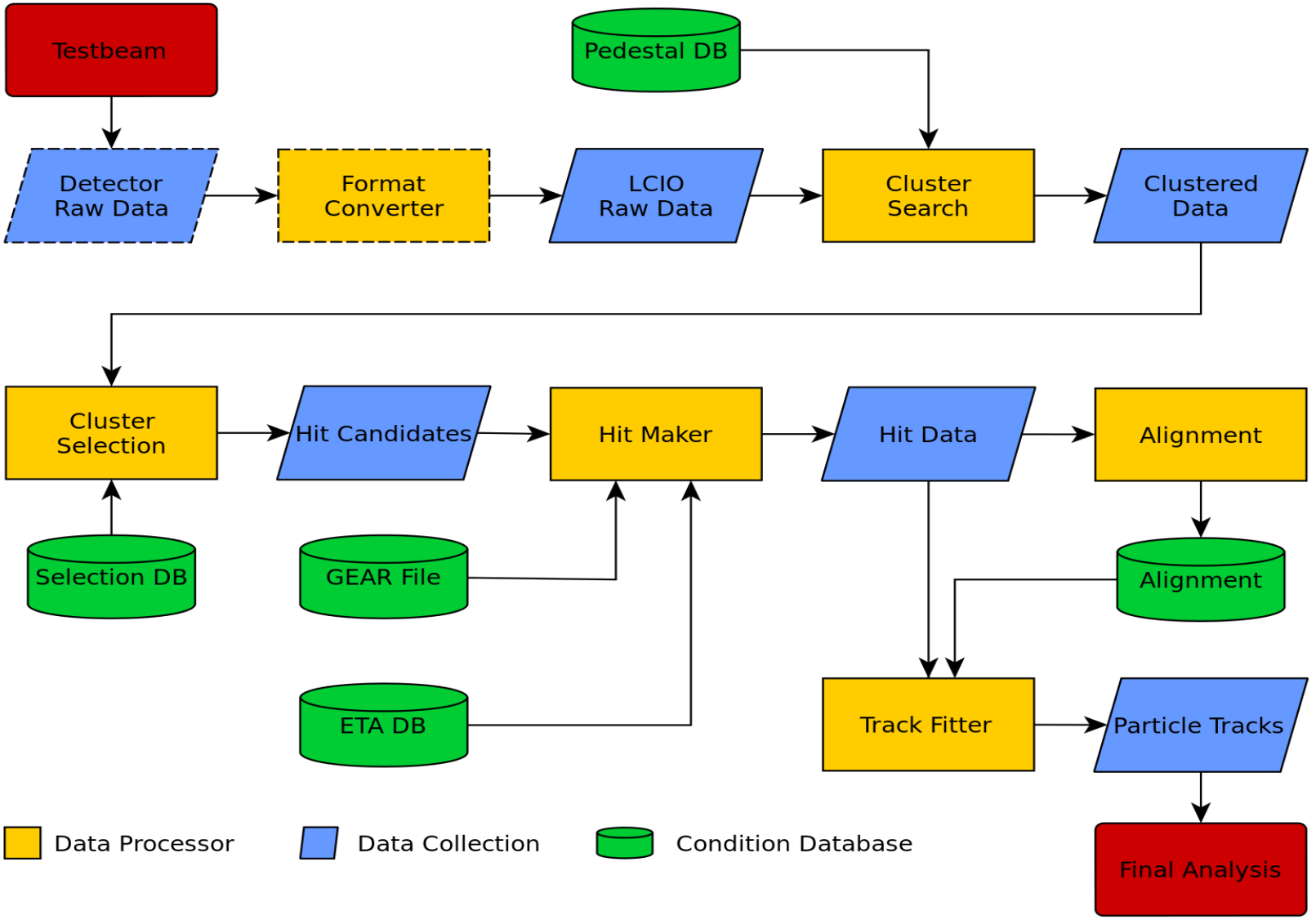
15 degree tilt

Summery of the run configuration

The Raw data are stored in EOS at CERN. We have a copy of relevant runs in Bergen locally: /disk/atlas2/ItkTestBeam/Nov2016

Run numbers	Bias Voltage (V)	Current (uA)	Threshold (ke)	Incident angle (degree)	Total number of events
7875-7880	10	0.51	3000	0	> 1 million
7893-7805	10	0.51	2500	0	> 1 million
7914-7923	15	12.7	2500	0	> 1 million
7924-7927	5	0.1	2500	0	> 1 million
7951-7990	7.5	0.13	2500	0	> 1 million
8036-8063	10	0.66	2000	0	> 1 million
8065-8108	15	12.0	2000	0	> 1 million
8109-8122	5	0.1	2000	0	> 1 million
8124-8139	7.5	0.13	2000	0	> 1 million
8141-8175	10	0.52	2000	15	~600 k

Track reconstruction: EUtelescope



http://eutelescope.web.cern.ch/

Track reconstruction

- EUtelescope installation instruction:
  http://eutelescope.web.cern.ch/content/installation
  I installed v01-17-10 in Bergen atlas computer. Examples can be found at:
  /disk/atlasprime/users/zcyang/itk/Nov2016

- Five steps with the example:
  jobsub.py --config=config.cfg -csv runlist.csv converter 7966
  jobsub.py --config=config.cfg -csv runlist.csv clustering 7966
  jobsub.py --config=config.cfg -csv runlist.csv hitmaker 7966
  jobsub.py --config=config.cfg -csv runlist.csv align 7966
  jobsub.py --config=config.cfg -csv runlist.csv fitter 7966
- Output root file is simple: identity, col, row, xpos_pred, ypos_pred

- Some ntuples can be found at:
  /disk/atlas2/ItkTestBeam/Nov2016_Ntuple_v1

```
[zcyang@atlasprime Nov2016_Ntuple_v1]$ ls
Ntuple_007875.root  Ntuple_007921.root  Ntuple_007943.root  Ntuple_007964.root  Ntuple_007980.root
Ntuple_007876.root  Ntuple_007922.root  Ntuple_007945.root  Ntuple_007965.root  Ntuple_007981.root
Ntuple_007880.root  Ntuple_007923.root  Ntuple_007946.root  Ntuple_007966.root  Ntuple_007982.root
```