

Report from the Technical Board

Lucia Masetti
JGU Mainz

CALICE Collaboration Meeting everywhere
September 28th, 2020



News since March

- **My first report as TB chair:** election on May 10th, actual start in August
- **A huge thank you to Katja** for her work in the last years as TB chair and for her help and patience in the hand-over period
- **Testbeams in times of Covid-19:**
 - Shutdown at DESY from March 16th to May 24th
 - Modified schedule after restart: no slot available for (CEPC) SciECAL
 - Completed testbeam after restart:
 - AHCAL: August 17th - 23rd in TB24 + TB21
 - Planned testbeams until end of 2020:
 - AHCAL: October 19th - 25th in TB22
 - SiECAL: November 30th - December 6th in TB22
- **Open call for testbeam requests at DESY in the first half of 2021**
 - Deadline: October 7th
- **File catalogue migration almost complete**

File catalogue migration

CALICE data on grid

files located on various storage elements: DESY, IN2P3, UK, ...

file locations registered in a filecatalogue

in past: used a LCG filecatalogue [LFC] hosted at DESY

– now nearing end-of-support

need to migrate filecatalogue to modern system: ilcdirac



LFC catalogue populated with entries for

- **CALICE files**: TB data, log files, MC samples, ...
- files in **user directories**

File catalogue migration

• Status in July

	all	nearlyOK	notOK
/grid/calice/tb-cern	157k files	21k	11k
/grid/calice/tb-desy	34k	6k	1.5k
/grid/calice/tb-fnal	24k	6k	5k
/grid/calice/tb-desy-siw-2012	7k		7k
/grid/calice/tb-MCProduction	97k		97k
/grid/calice/software	54		54
/grid/calice/SDHCAL	137k		137k
/grid/calice/gain	67k		67k

→ this will be painful; may be possible to delete some?

→ all @ Lyon → asked Gerald Grenier to deal with these

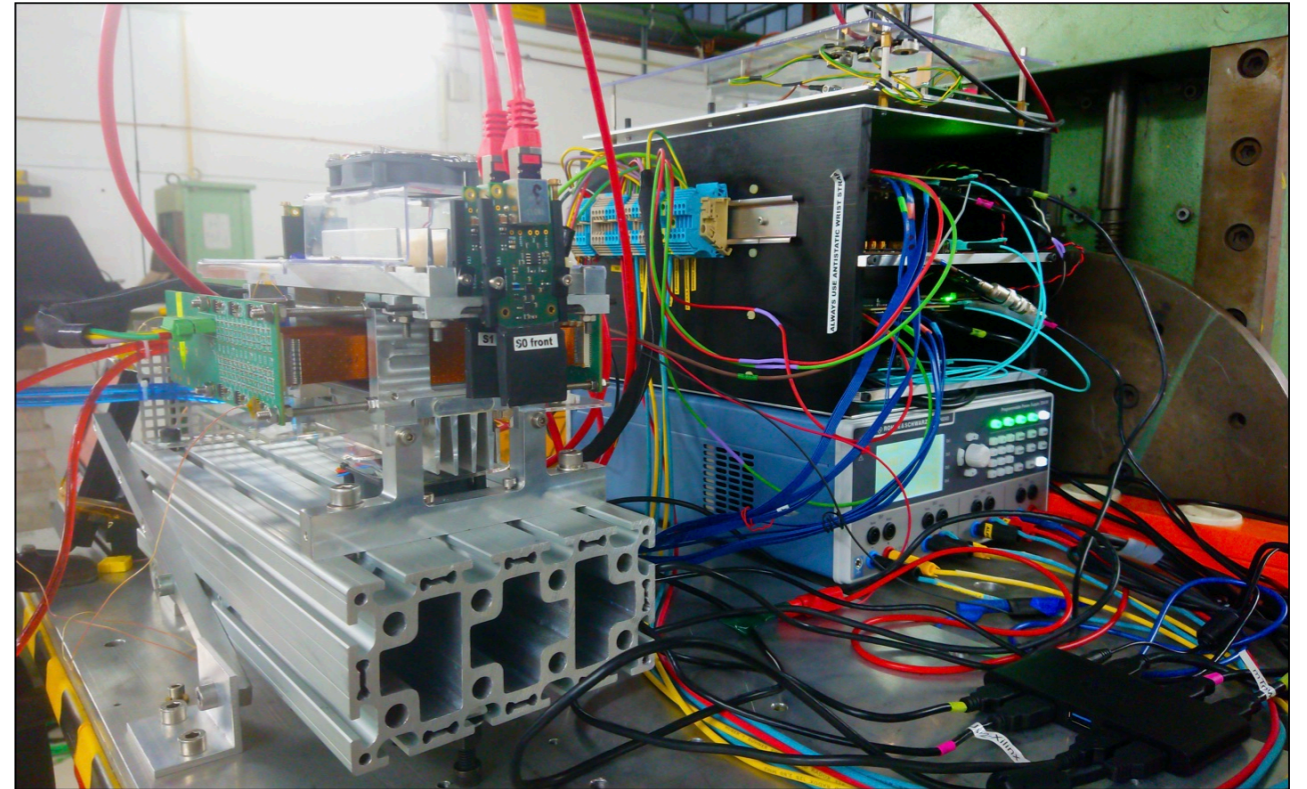
→ all AHCAL-related, stored @ DESY → Eldwan will deal with these

File catalogue migration

- **Current status**
 - Last transfers ongoing
 - Old (physics prototype) Montecarlo data to be copied only on request → no requests received → all data deleted
 - Non-accessible copies of data now accessible in ilcdirac have been deleted as well
 - User files will become inaccessible. If you need to keep access to your files on the grid, act NOW
- **Many thanks to Daniel, Eldwan, Gerald and to the ILCDirac support (Andre Sailer/CERN)!**

MAPS ECAL

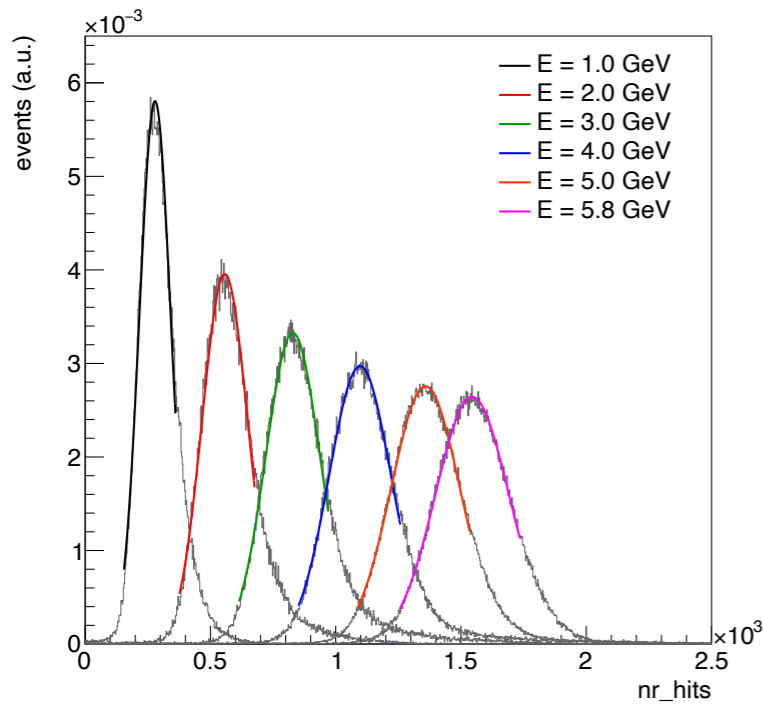
- **ALPIDE-based prototype:**
 - Works in calorimetric environment
 - Can read out high density hit patterns
 - No artefacts seen in EM shower shapes up to 5.8 GeV (to be confirmed with higher energy at SPS)
 - Performance similar or better than MIMOSA
 - Higher readout rate than MIMOSA



Test beams at DESY:
Nov 2019 (12 layers), Feb 2020 (24 layers)

R. Barthel, A. van Bochove, E. Broeils, N. van der Kolk, T. Peitzmann, S. van Rijk, M. Rossewij, H. Yokoyama (*Utrecht, Nikhef*) – R. Bosley, N. Watson (*Birmingham*) – V. N. Eikeland, E. H. Solheim (*Bergen*) – Q. W. Malik (*Oslo*) – F. Pliquett (*Frankfurt*)

MAPS ECAL

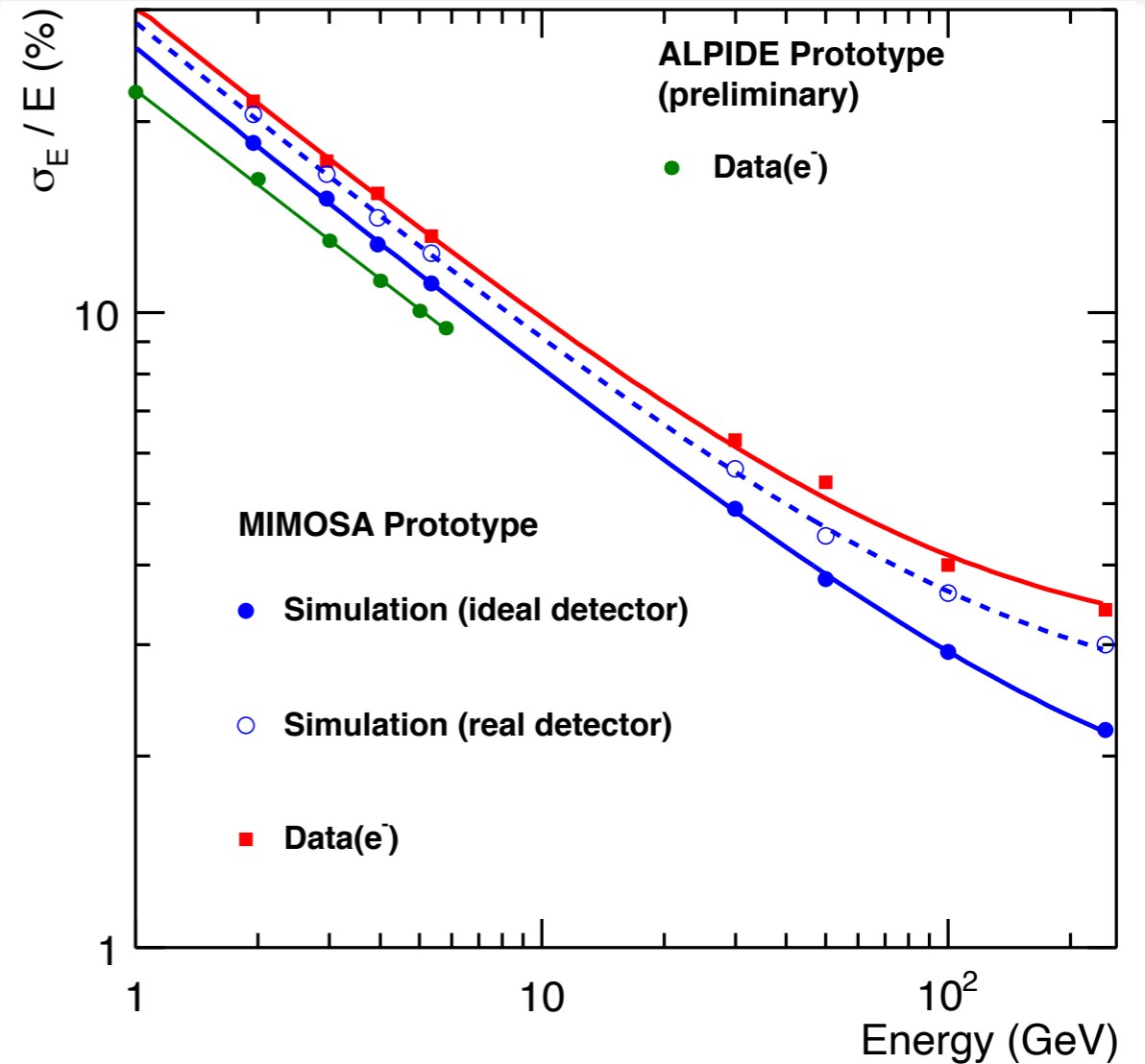


preliminary results of DESY test beam

- using preliminary pileup rejection and calibration

MIMOSA prototype:

$$\frac{\sigma_E}{E} = \frac{28.5\%}{\sqrt{E/\text{GeV}}} \oplus 3.0\%$$



ALPIDE prototype:

$$\frac{\sigma_E}{E} = \frac{22.3\%}{\sqrt{E/\text{GeV}}} \oplus 0.2\%$$

MAPS ECAL

- **Next steps:**

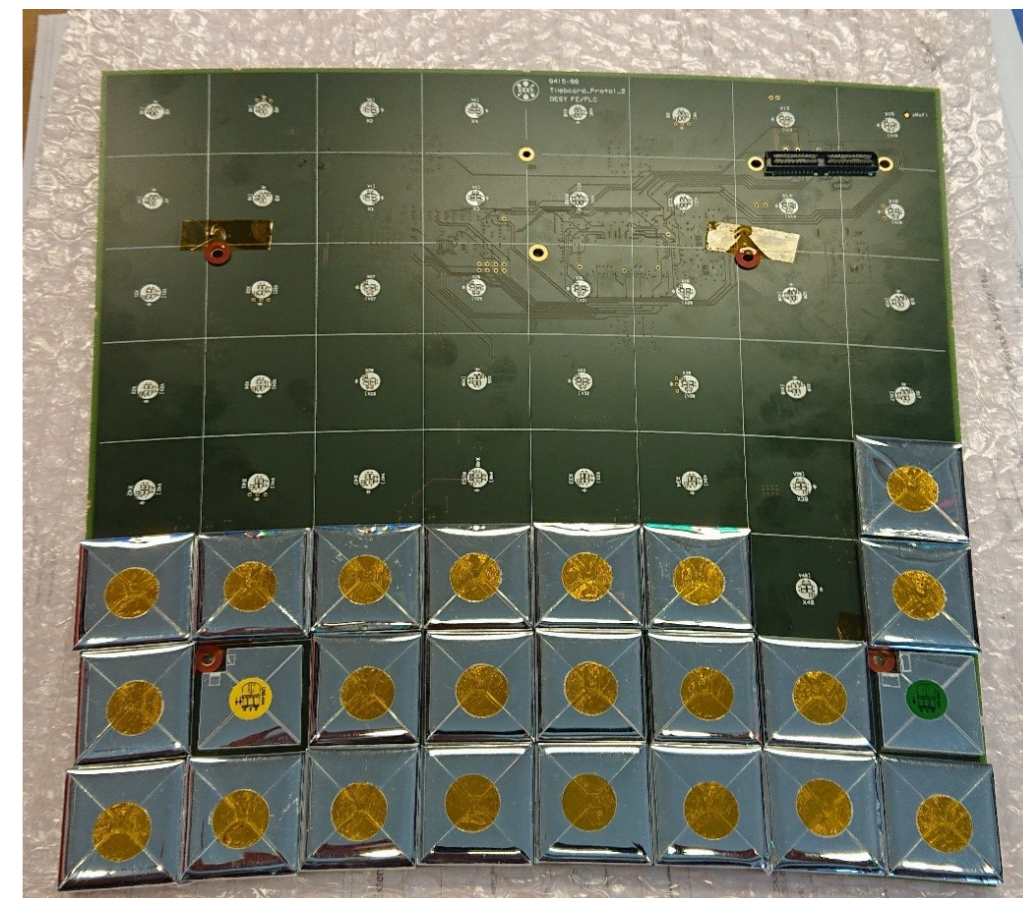
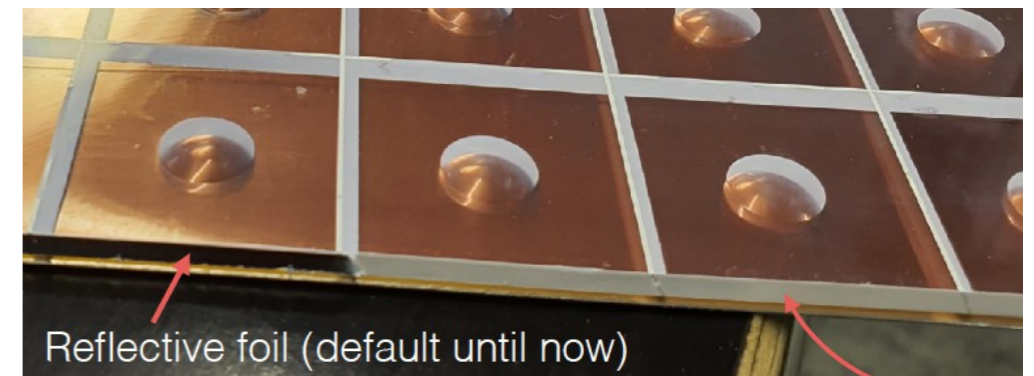
- Can still further exploit data of MIMOSA-based prototype: detailed shower shapes up $E = 244$ GeV
- Ongoing analysis with ALPIDE based prototype
 - Solve a few issues: residual pileup, artefacts from trigger inefficiency
- Further beam tests
 - Another beam test at DESY (improved setup)?
 - Long-term: high energy data at SPS
- Gearing up for first papers

- **Status of FoCal in ALICE:**

- LHCC approval of Lol: June 2, 2020
- Lol available at <https://cds.cern.ch/record/2719928>
- Now preparing for TDR
- **Interested groups welcome!**

AHCAL

- 1 week in TB24 at DESY: 17-23 August
 - Low occupancy at DESY: got also TB21
- Setup 1 in TB21: Megatile (Mainz)
 - **Talk tomorrow**
- Setup 2 in TB24: HGICAL tileboard prototype
 - **Talks tomorrow**
- 1 more week at DESY: 19-25 October 2020
 - New Covid19 travel rules make planning difficult
 - More tests of smaller setups: Megatile, HBU with Klaus ASIC, HGICAL tileboard
- **Depending on SiECAL status, might consider tests for common DAQ in November 2020**
 - Would need Jiri, travel restrictions unclear

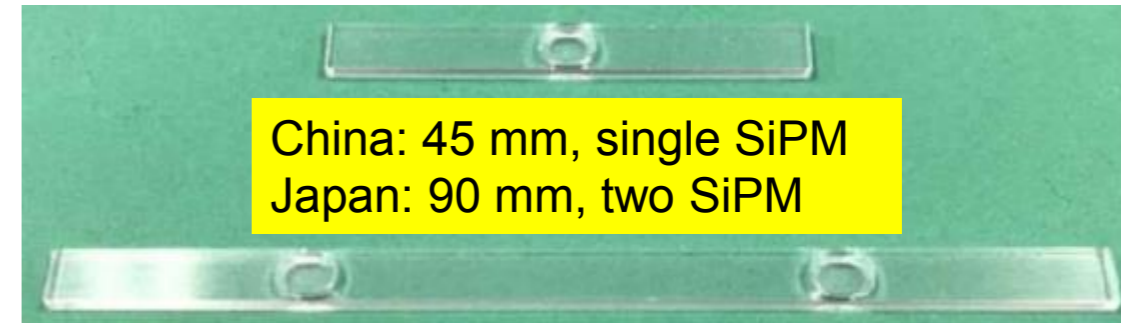


SiECAL

- **Almost all layers running**
 - 2 in repair, some concerns about glue?
- **Testbeam preparations**
 - Analysis and commissioning of layers
 - DAQ preparation: cosmic ray data taking, online monitoring, EUDET2 integration
 - So far only continuous running more, no power pulsing
 - Biggest uncertainty: Covid19 restrictions in Germany and at DESY
- **“Towards an FEV14” brainstorming on June 26th**
 - New version compatible with both 6” and 8” wafers
 - 8” wafers only available end of next year
 - Many improvements for better scalability and maintenance
 - Compatibility with new DAQ and monitoring
- **Talks later today**

CEPC SciECAL

- All the **super-layers** (16) were assembled and tested using cosmic rays to check the performance
- **The prototype was trail assembled**
 - The preliminary test shows that the performance of the prototype is OK
- **Next steps**
 - Long-term cosmic ray test.
 - Ship the prototype to IHEP for a beam test in the beginning of November if the beam is OK
- **Talks later today and tomorrow**



SDHCAL

- No testbeams foreseen this year
- Main activities
 - New readout system for large chamber with HR3 and CIEMAT DIF
 - Addition of timing information
 - Main challenge for new ASIC: data rate
- Talks tomorrow

Summary

- **Testbeams at DESY** restarted in May after Covid19 shutdown
- One completed, two more planned until end of the year
 - Possibly combined SiECAL+AHCAL DAQ test in November
- **Requests for first half of next year at DESY to be submitted until Oct. 7th**
- **Testbeams at CERN expected to restart in Autumn 2021**
- Testbeam data analysis of ALPIDE prototype data ongoing, first results look very promising
- File catalogue migration close to completion