

Report from the technical board

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CALICE Collaboration Meeting Everywhere
March 24th, 2021



News since September

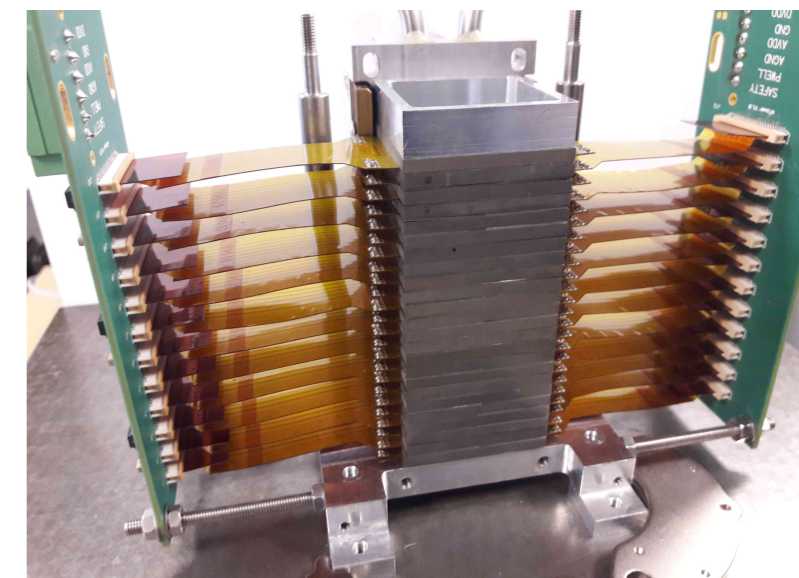
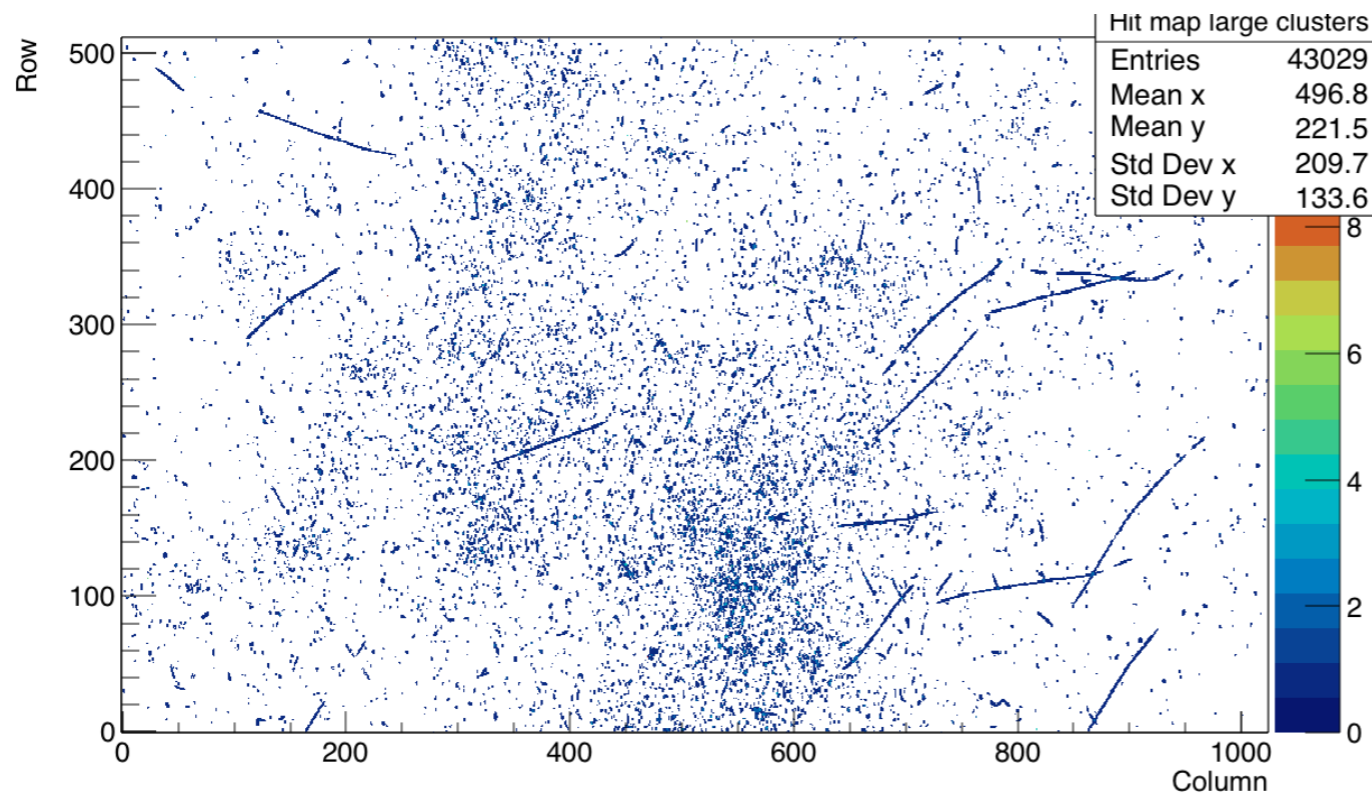
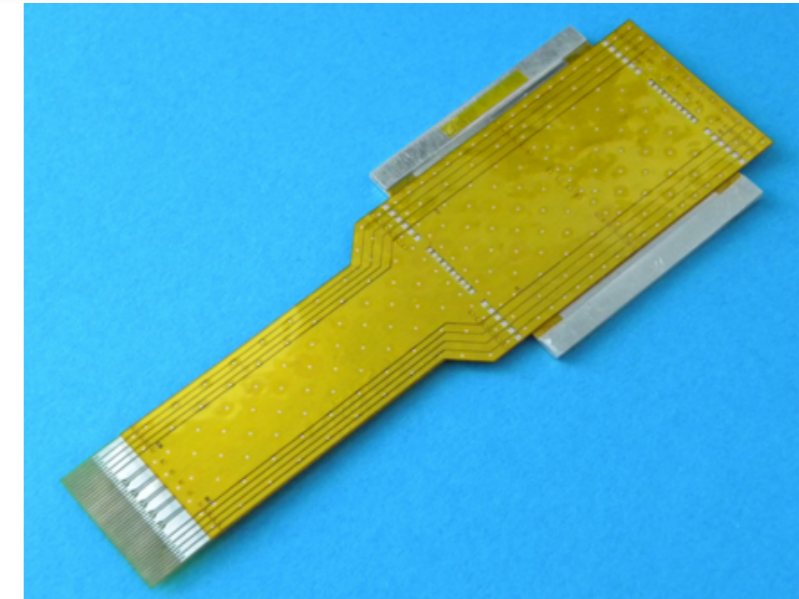
- **3 TB meetings**, last on March 10th replacing the one “during” the collaboration meeting
- **Testbeams:**
 - AHCAL: testbeam at DESY October 19th-25th
 - SiECAL: testbeams at DESY cancelled so far due to COVID restrictions
 - DESY facility closed for lockdown until March 14th
 - (CEPC) SciEcal: testbeam at IHEP end of 2020
- **Coordinated request for 2 weeks of testbeam at CERN**
 - Lead by SiECAL: 1 week standalone + 1 week together with other systems (candidates are AHCAL, SDHCAL, SciECAL)
 - Preference for SPS, but PS is considered a fallback solution
- **High granularity dual readout calorimetry** being considered for addition to the Technical Board as an independent system, discussion at Institute Board today

SiECAL

- **Testbeam preparations ongoing**
 - Stack is ready, but hardware, DAQ and simulation being updated in parallel
 - New wafers bought, new slabs produced, new FEVs with improved power distribution
 - Aim is to test the new prototype both standalone and combined with other systems as soon as possible
- **Related activities**
 - LGAD (APD) testbeams in Japan to test time resolution
 - Discussion on TDC resolution and time walk correction ongoing

MAPS ECAL

- **ALPIDE-based prototype (EPICAL-2)**
 - Data analysis of recent DESY testbeams ongoing
- Two papers in preparation: performance + technical
- Very promising results and good agreement with simulation
- Recent activity on large clusters seen in data



(CEPC) SciECAL

Technological
prototype under
test

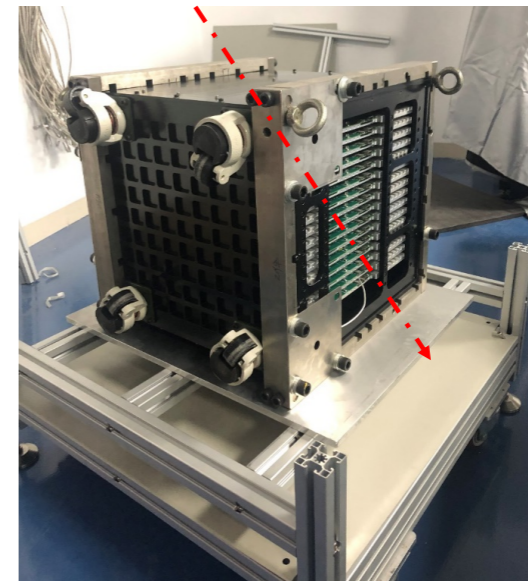
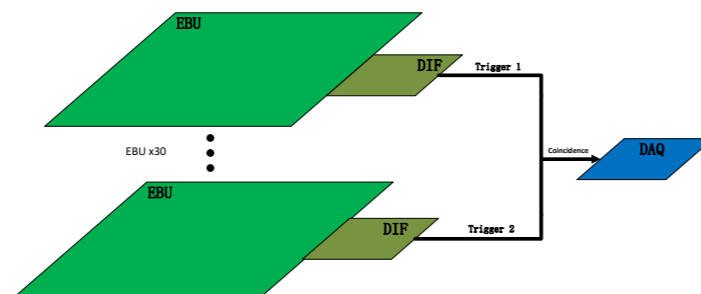
- 210 channels per EBU
- 16 super-layers with a total radiation length $\sim 23 X_0$
- Transverse dimension: 22.6 cm * 22.2 cm



The fully-integrated Sc-ECAL prototype

A long-term cosmic ray test

- The Sci-ECAL prototype is rotated by 90 degrees
 - Trigger: coincidence of Layer1 & Layer29
 - Event rate : $\sim 16/\text{min}$
 - Target for data collection: ~ 400 thousands

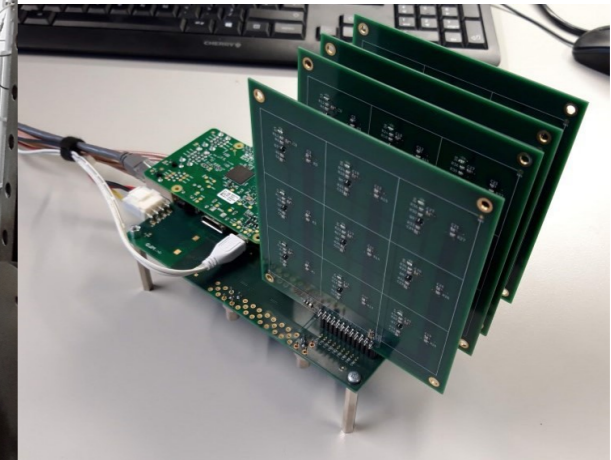
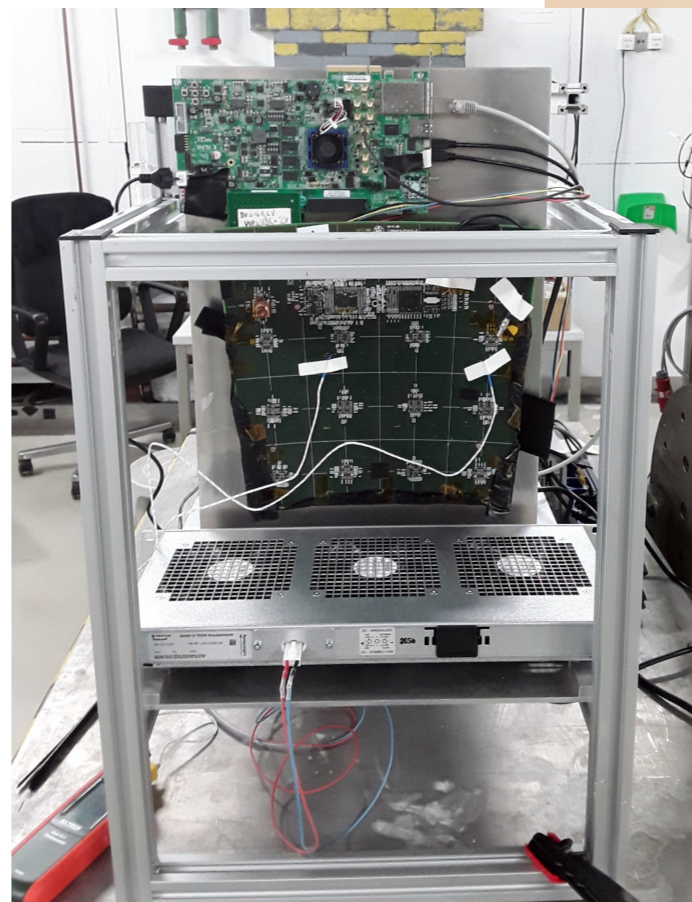
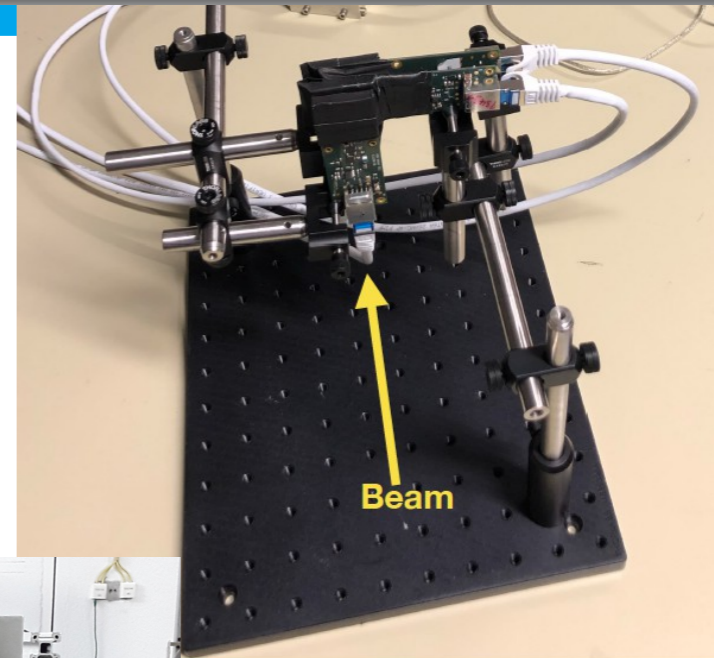


SDHCAL

- **Available for combined testbeams at CERN** in the second half of the year, no standalone testbeams foreseen in the near future
- **Ongoing electronics developments**
 - for compatibility with new DIF boards: firmware updates in HARDROC3
 - to include time information: PETIROC2 included in readout boards, DAQ development to be attacked next

AHCAL

- > 1 week in TB24 at DESY:
19-25 October 2020
- > 3 small setups
 - 4 individual tiles read out by Picoscope to determine hit time resolution (MPI Munich)
 - KlauS6 testboard (Uni HD)
 - HGICAL tileboard (DESY)
- > Corona conditions: max. 8 person in team, max. 3 in control room



Summary

- **Testbeam activity limited by COVID pandemic**
 - Currently only possible in Asia and at DESY by local teams
 - Available sets of data from the past campaigns being thoroughly investigated, showing very promising results
 - Preparations for more testbeams ongoing in all systems
 - Coordinated request submitted to CERN
- **High granularity dual readout calorimetry** being considered as additional system in Technical Board