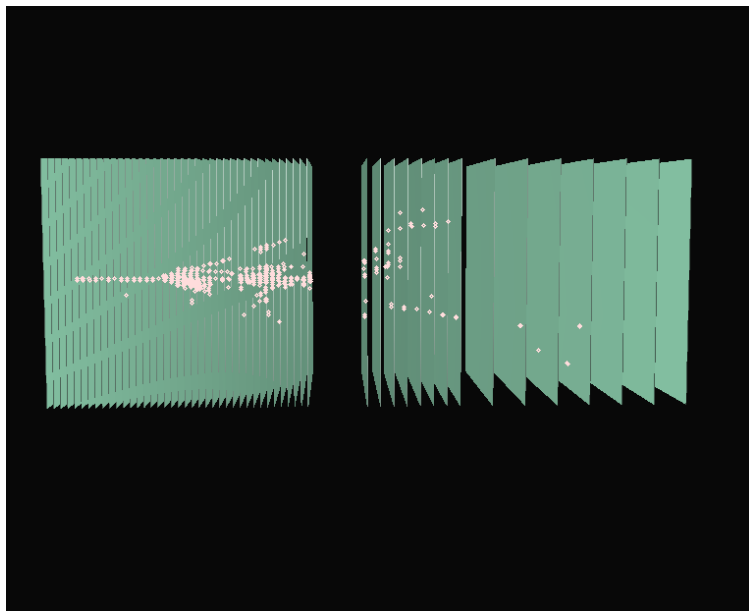


DHCAL Overview



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CALICE Collaboration Meeting
DESY, Hamburg, Germany
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Activities of the Next Year

Emphasis on data analysis

R&D with resistive plates (decrease resistivity and increase rate capability)

Build and test RPCs with new Bakelite plates

(new, lower resistivity Bakelite, Bakelite with resistive paint layer inside the plate)

Build and test RPCs with new, semi-conductive glass plates

1-glass RPCs (pad multiplicity ~ 1 , resistive layer not critical, thinner, higher rate capability)

Build more large chambers and continue to test

Set-up of large cosmic ray test stand with DHCAL layers

Development of next generation readout (token ring passing, lower power consumption...)

Currently on hold (no funds)

Plans for Publishing Test Beam Results

Instrumentation paper

On hold due to missing electronics measurements (sensitivity)
Draft exists

Electronics paper

On hold due to missing electronics measurements (sensitivity)
Draft exists

Noise paper

Analysis started
Student left
Studies need to be completed
At the moment no manpower

Fe-DHCAL

Muon response paper

CALICE_Note exists
Analysis virtually completed

Fe-DHCAL

Plans for Publishing Test Beam Results

Pion/positron/calibration paper

Analysis well advanced
CALICE_Note being drafted

Fe-DHCAL

Pion shower shapes

Analysis ongoing
Still ways to go

Fe-DHCAL

Longitudinal calibration paper

Analysis virtually completed
Thesis exists
CALICE_Note to be drafted

Fe-DHCAL

Plans for Publishing Test Beam Results

Combined Si-W ECAL + DHCAL data

No concrete plans to analyze (yet)

Fe-DHCAL

Minimal absorber data

No concrete plans to analyze (yet)

DHCAL

W-DHCAL data

CALICE_Note exists with response/resolution
Analysis being taken over by CERN group

W-DHCAL

Software Compensation with W-DHCAL data

W-DHCAL better suited than Fe-DHCAL
No concrete plans (yet)

W-DHCAL

Plans for Test Beams after Shutdowns

Fe-DHCAL data

Completed

W-DHCAL

Completed

Tests of individual RPCs/GEMs

High rate RPCs (GIF, FNAL)

1-glass RPCs (FNAL)

GEM prototypes w/ or w/out DHCAL (FNAL)

Overall Goals for the DHCAL

No matter what

- Complete test beam analysis and publish
- Develop and test high-rate RPCs
- Built and test more 1-glass RPCs
- Seek involvement in other experiments where RPCs might be needed

Assuming **no** ILC project in near future

- Increase involvement in ATLAS upgrade
- Look for other possibilities to utilize RPC technology

Assuming ILC project materializes

- Activities need to be coordinated with new reality: detector collaborations?
- Design and prototype next generation readout
(low power, better time-stamping resolution, higher channel count...)
- Build and test gas recycling system (Iowa)
- Continue work on HV distribution system (Iowa)
- Start work on LV distribution system (DC-DC converters?)
- Re-start work on HCAL engineering design