Poster Review

Calorimetry

Stefano Miscetti
Satoshi Mihara

Calorimetry Poster Session

- 29 contributions
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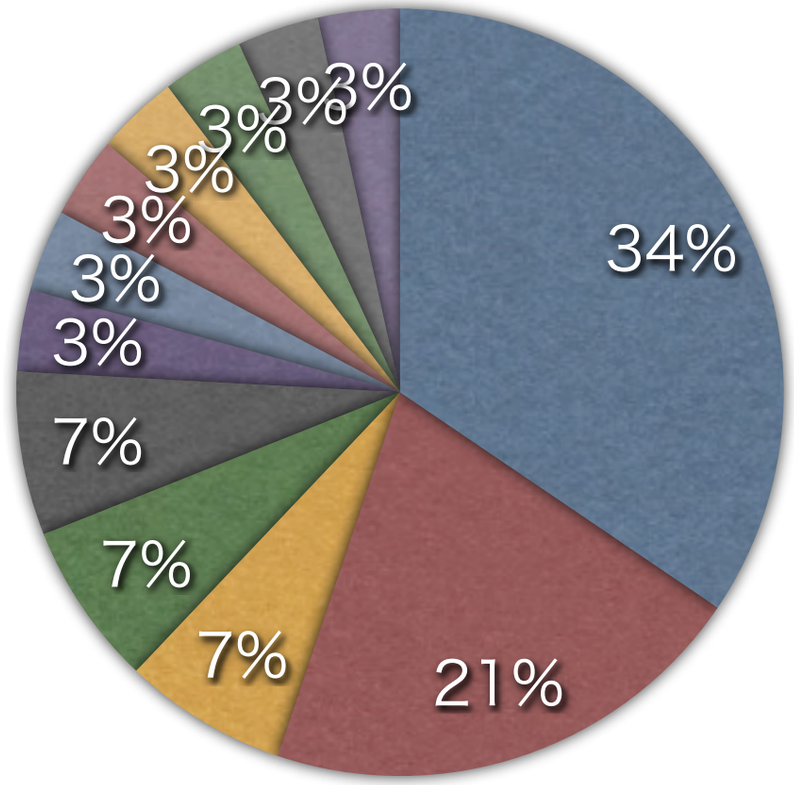
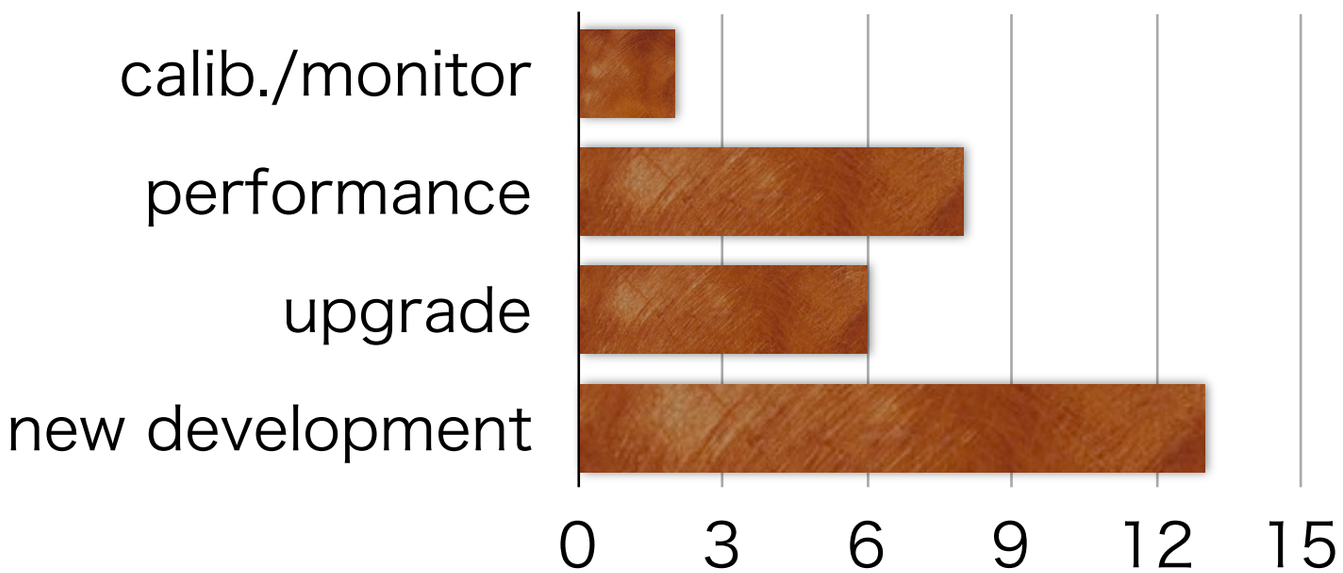
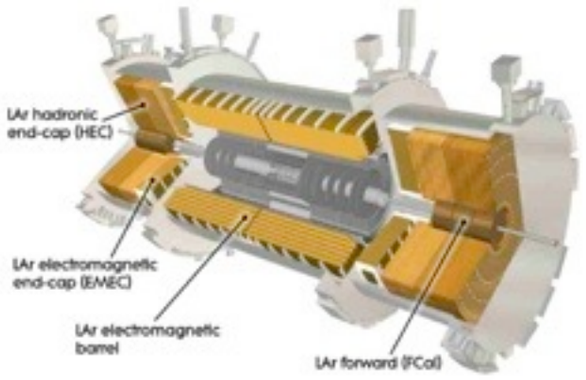




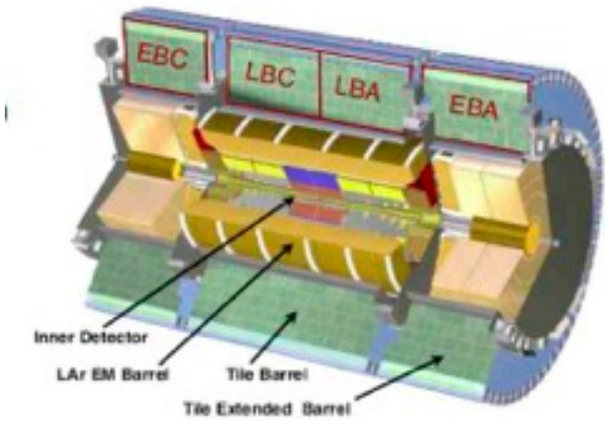
Performance report

- ATLAS LAr by L. A. Bella (LAPP)
- ATLAS TileCal by Y. Hernandez (IFIC) and E. Meoni (IFAE)
- Tau reconstruction at ATLAS by S. M. Consonni (Milano)
- Jet reconstruction at ATLAS by L. Kogan (Oxford)
- Single hadron response at ATLAS by M. J. Sousa (LIP)

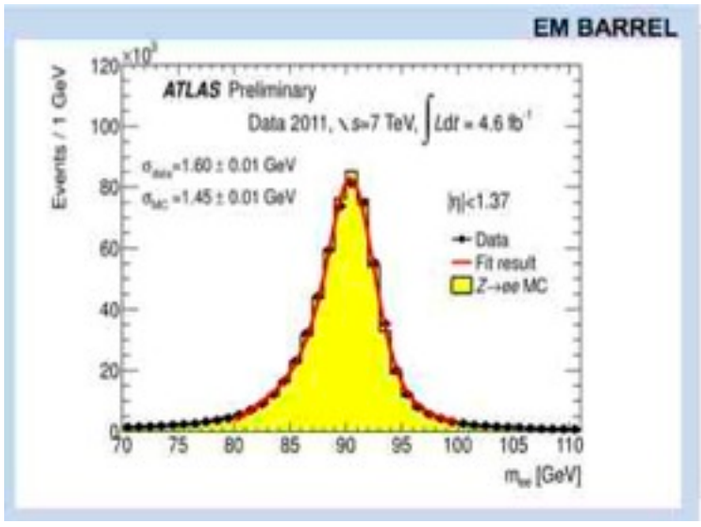
Performance Report

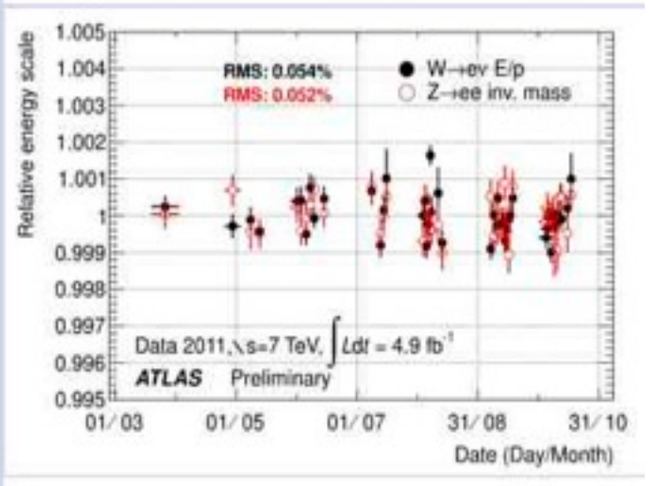


ATLAS

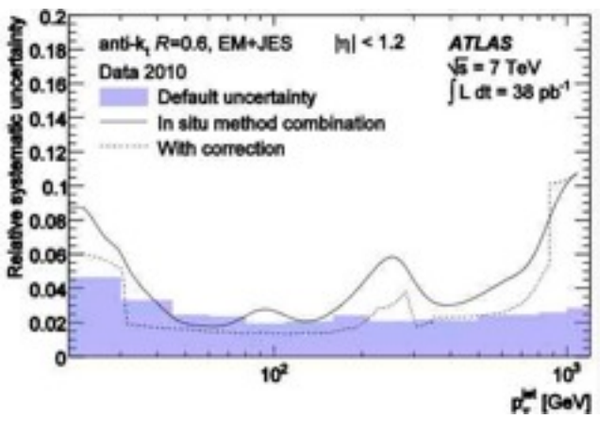


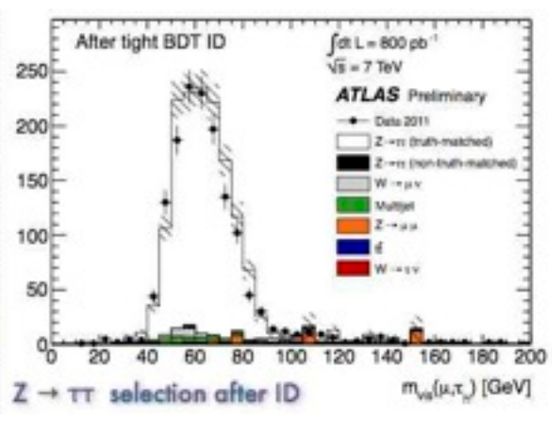
- LAr performance





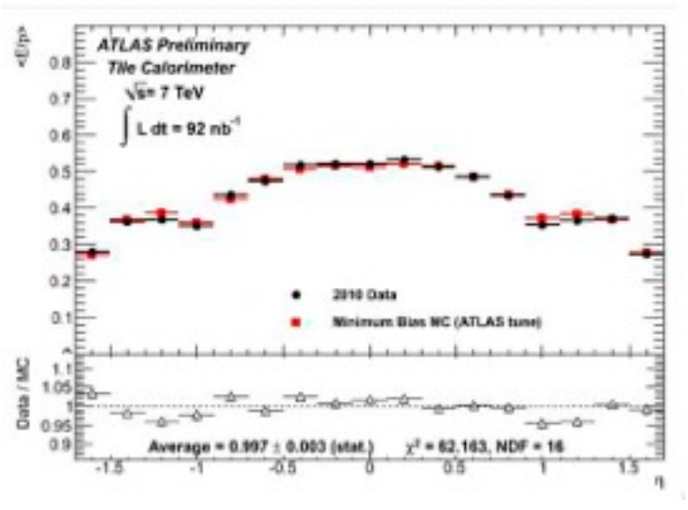
- Tau/Jet reconstruction

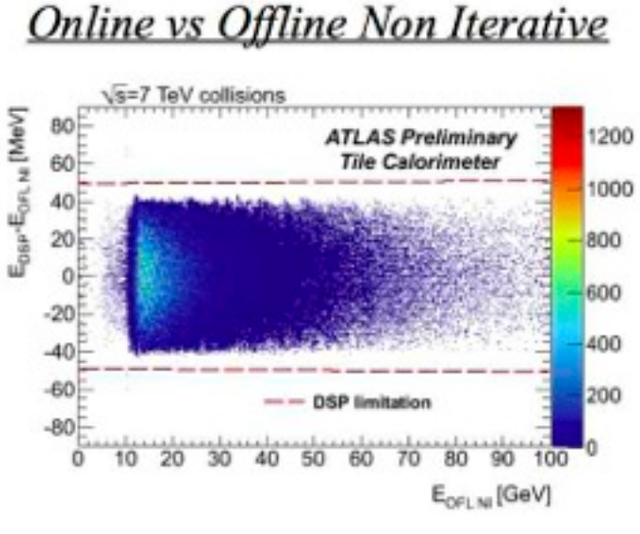




JES uncertainty 2-4%

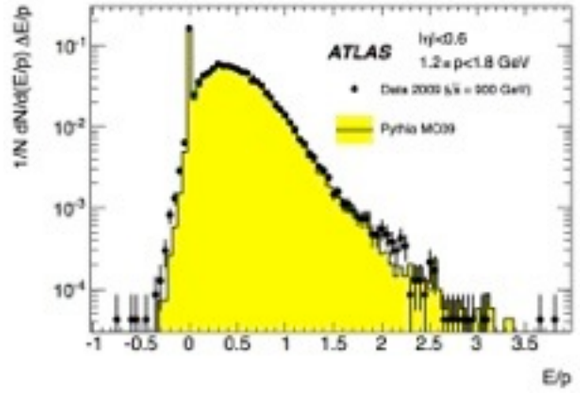
- TileCal performance





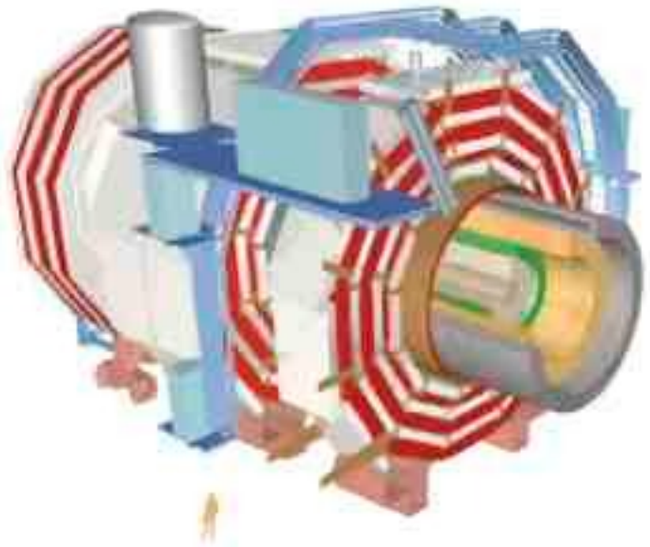
- Single hadron response

Largest contribution
to the Jet Energy
Scale uncertainty

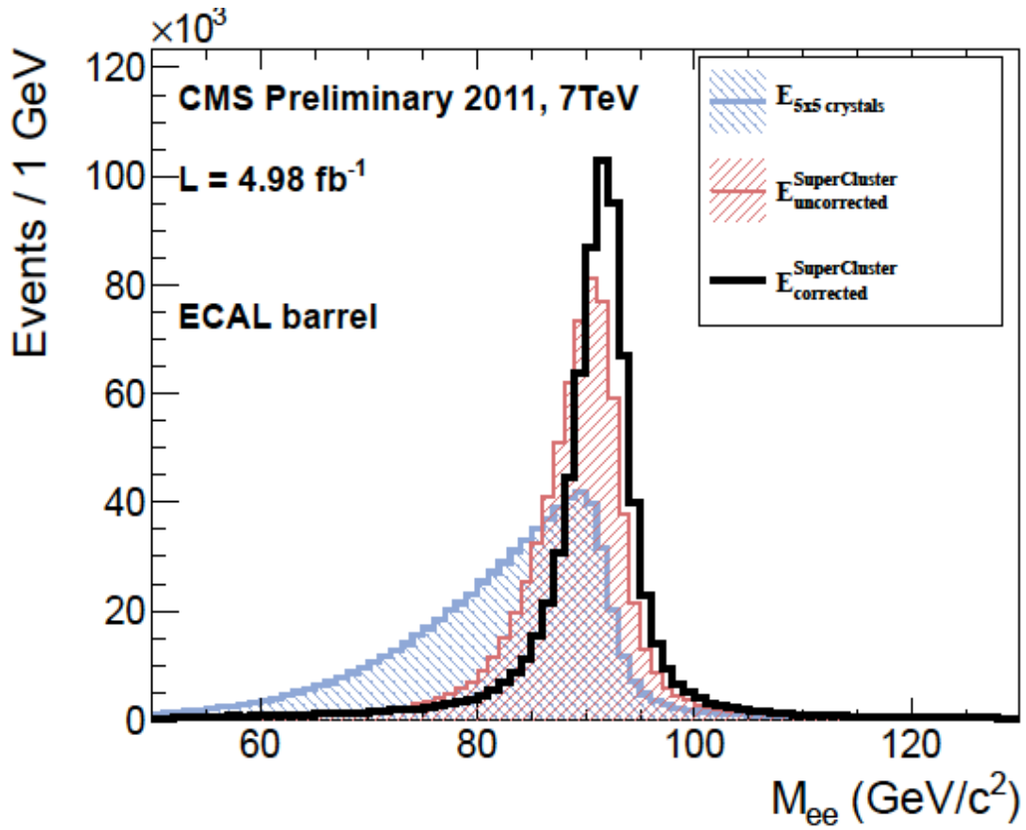


Performance report cont'd

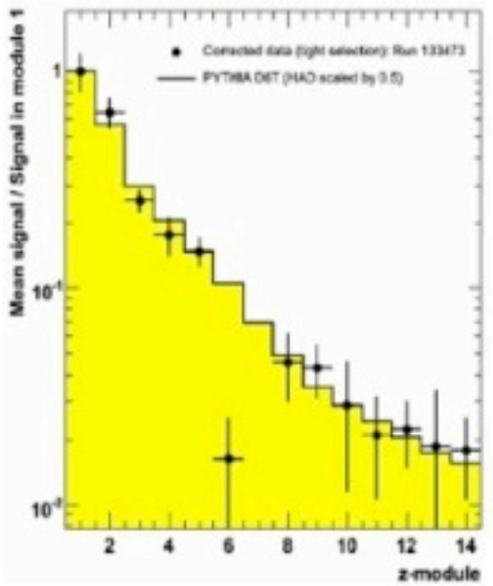
- CMS Ecal by J. L. Faure
- CMS forward calorimeter CASTOR by A. P. Panagiotou (Athens)

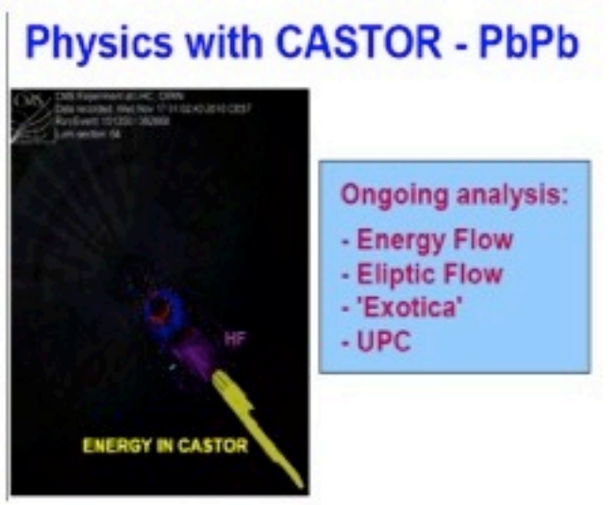


CMS



impact on the Z→ee energy scale and resolution from the incorporation of more sophisticated clustering and cluster correction algorithms.



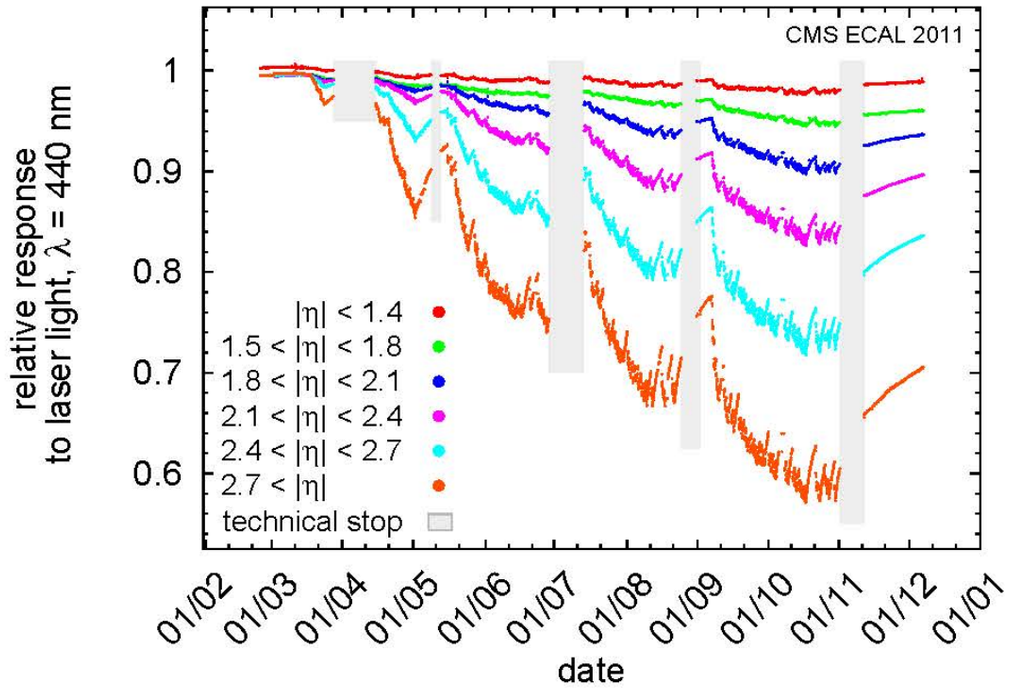


Calibration/Monitoring

- CMS Ecal calibration using LHC collision data by M. Obertino (Piemonte)
- Calibration and monitoring system for the ATLAS TileCal by D.Boumediene (U. Blaise Pascal)

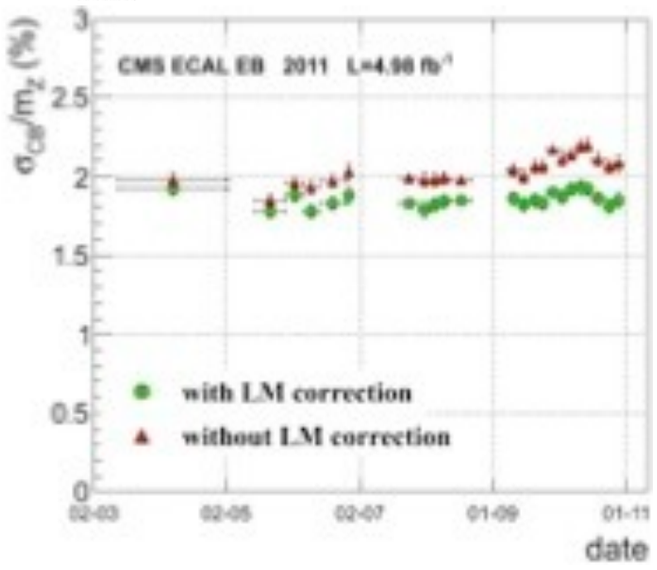
Calibration/monitoring

CMS ECAL laser monitoring system

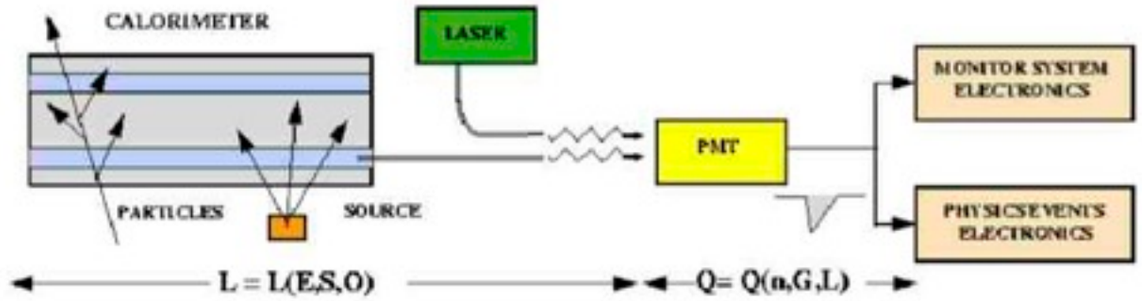


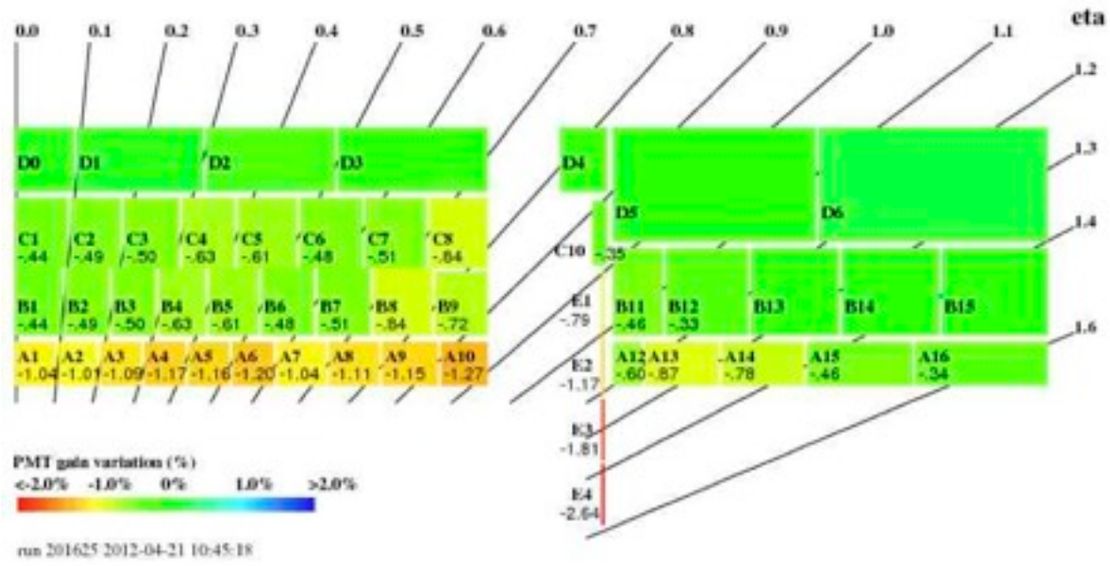
cross-check using $Z \to e^+e^-$ data

stable within 4%



ATLAS TileCal calib./monitoring systems





The mean gain variation of the 10000 channels is computed cell by cell as a function of eta and radius, between the 19 March 2012 and the 21 April 2012

Upgrade Plan

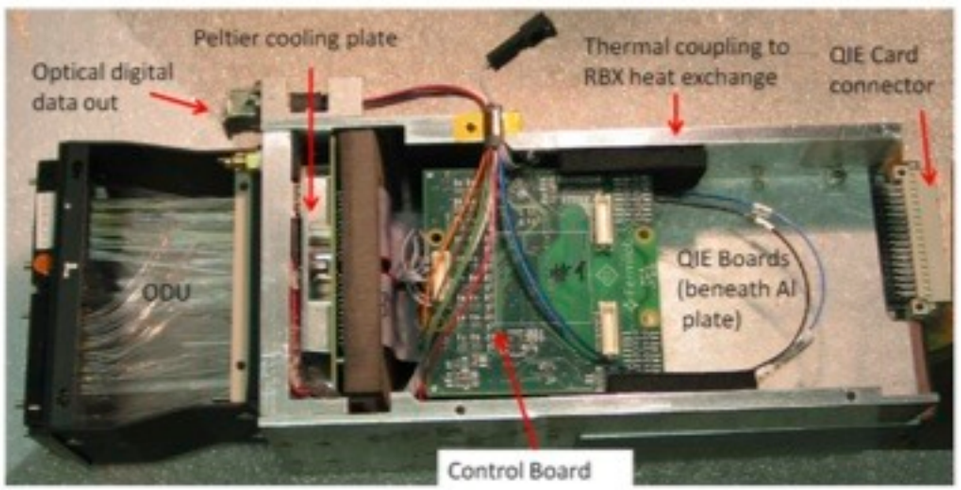
- CMS HCAL front-end electronics by J. Anderson (FNAL)
- Upgrade of the CMS HO with SiPM by J. Anderson (FNAL)
- New photosensor for the CMS HCAL by J. Anderson (FNAL)
- ATLAS TileCal readout electronics upgrade by F. C. Argos (Valencia)
- ATLAS LAr readout electronics upgrade by S. Staerz (Dresden)
- ATLAS FCal upgrade by M. Fincke (Victoria)

CMS HCAL/HO Upgrade

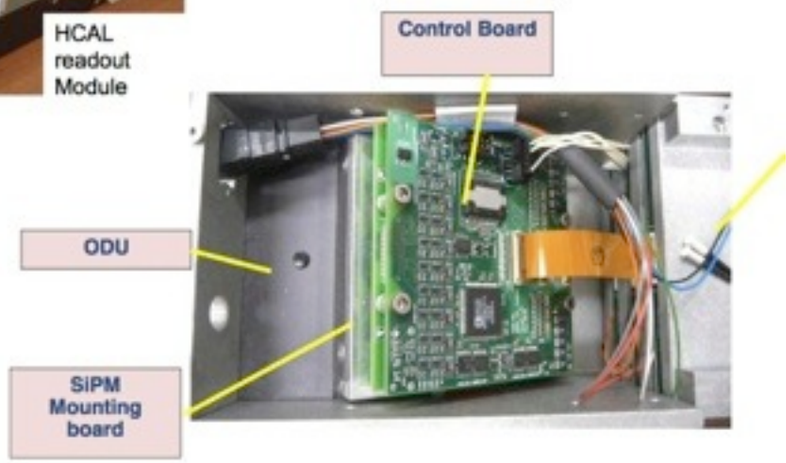
major luminosity increase expected in 2017

FE Electronics for HCAL Upgrades

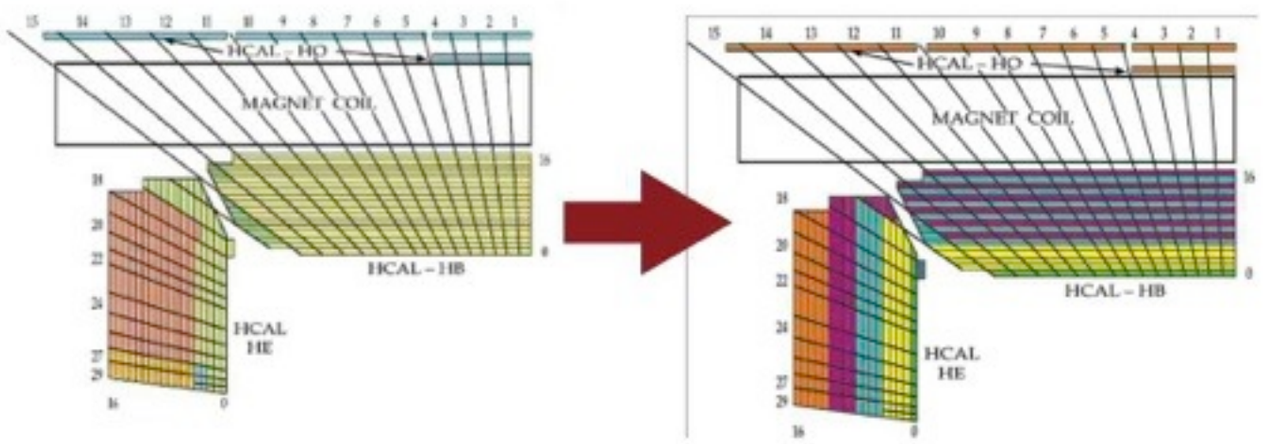
- Installation Plan
  - LS1 – HF/HO Photo-sensor replacement,commisson BE μTCA
  - LS1.5 – HF FE electronics replacement
  - LS2 – HB/HE/HO FE electronics replacement (HB/HE photo-sensor, FE electronics. HO FE Electronics)
- Cost/Schedule Constraints
  - Re-use as much of the existing infrastructure as possible
  - Reuse optical data links, H2O cooling, readout boxes
  - Modular FE readout & control units allow for easy replacement of FE electronics
  - Radiation Environment (2E12 n/cm^2, 100 Gy), B-field: up to 4T



Full HO SiPM System installation in 2013

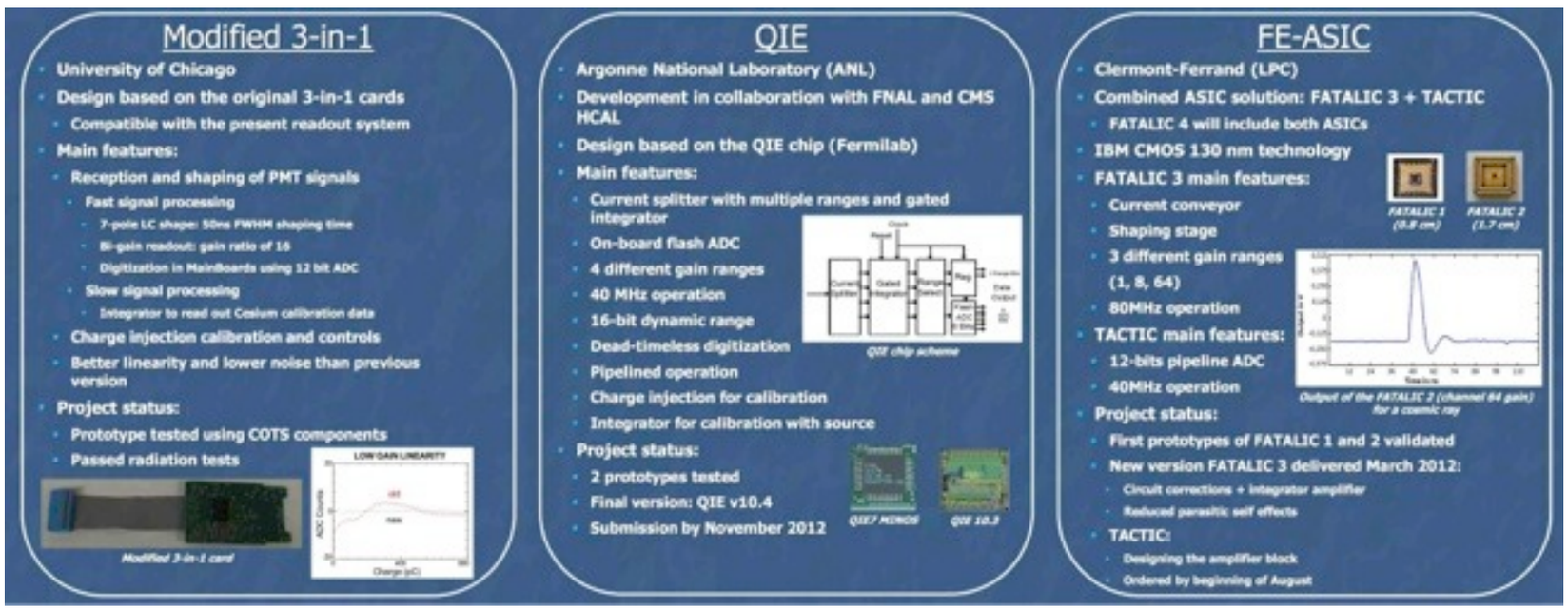


HCAL photosensor HPD -> SiPM

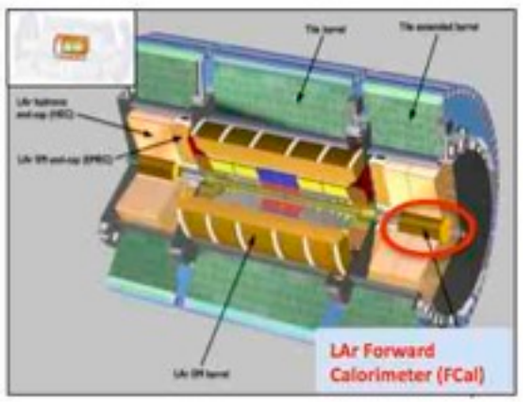


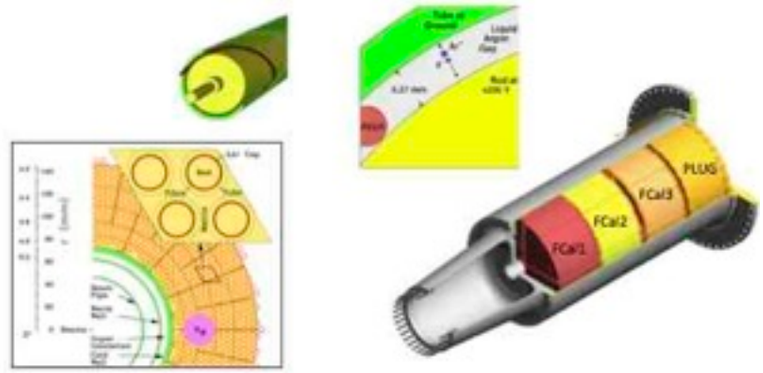
ATLAS Calorimeter Upgrade

TileCal readout electronics upgrade three options

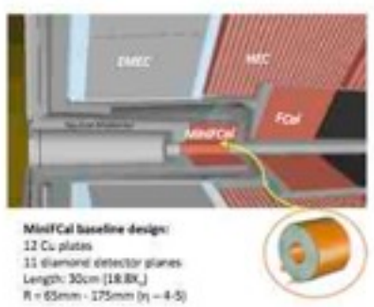


FCal Upgrade





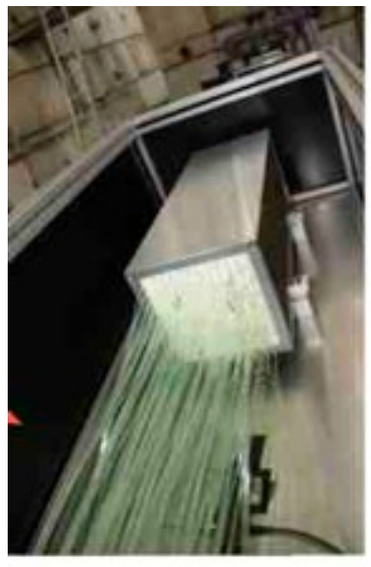
sFCal or MiniFCal?

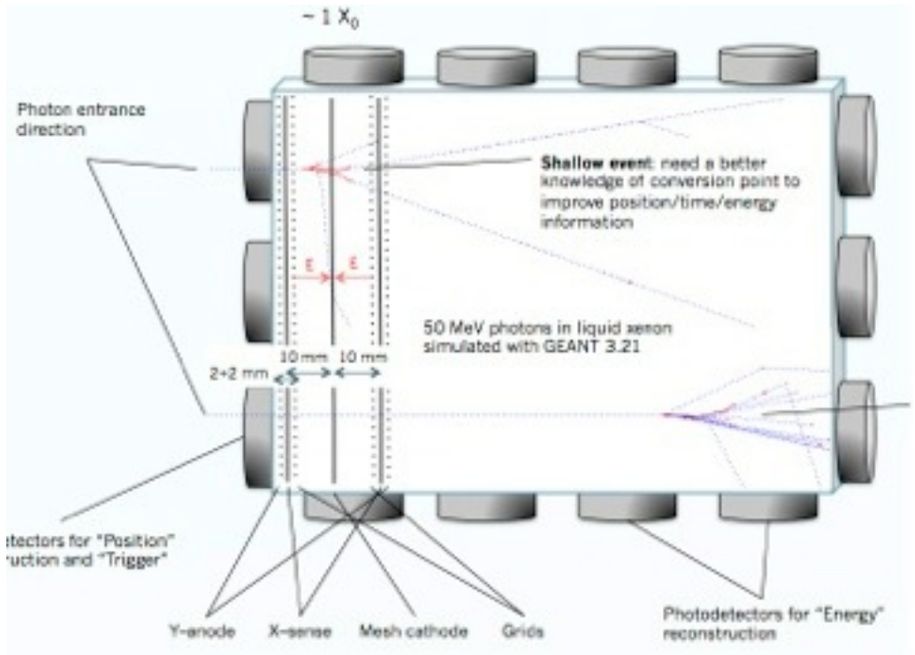


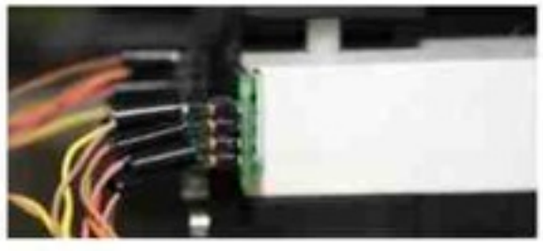
LAr readout electronics development as well

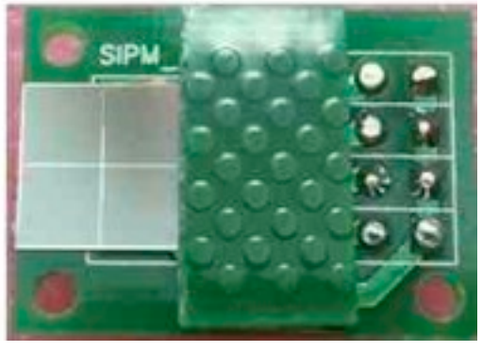
New development

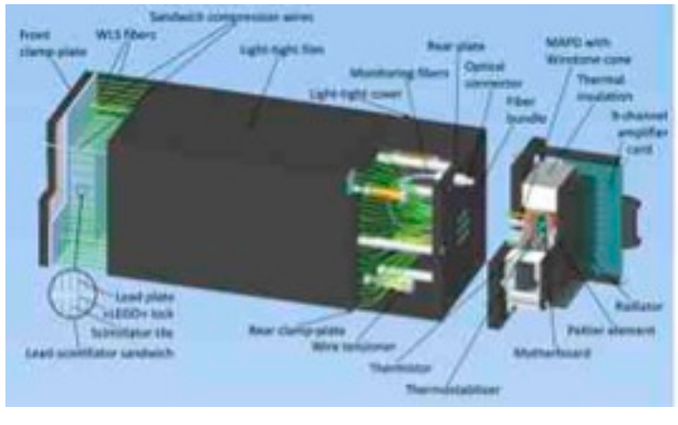
- LXe detector R&D by G. Signorelli (Pisa)
- SiPM readout for Shashlik and crystal-based calorimeter, TWICE by A. Berra (MIB)
- MAPD readout for Shashyk EM calorimeter for COMPASS II by I. Chirikov-Zorin (JINR)

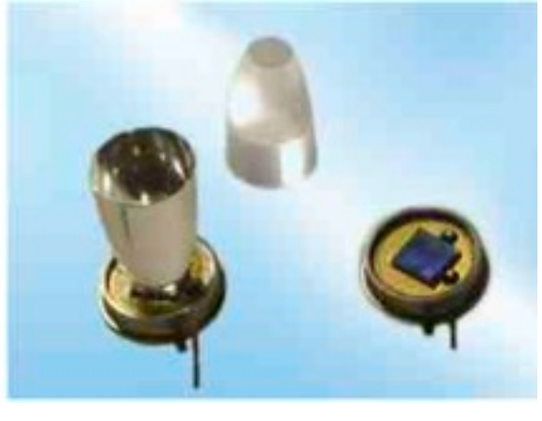












New development cont'd

- DREAM project by M. Cascella (Lecce)
- Study on integration time, super B by D. Pinci (Roma)
- mu2e detector by G. Onorato (FNAL)

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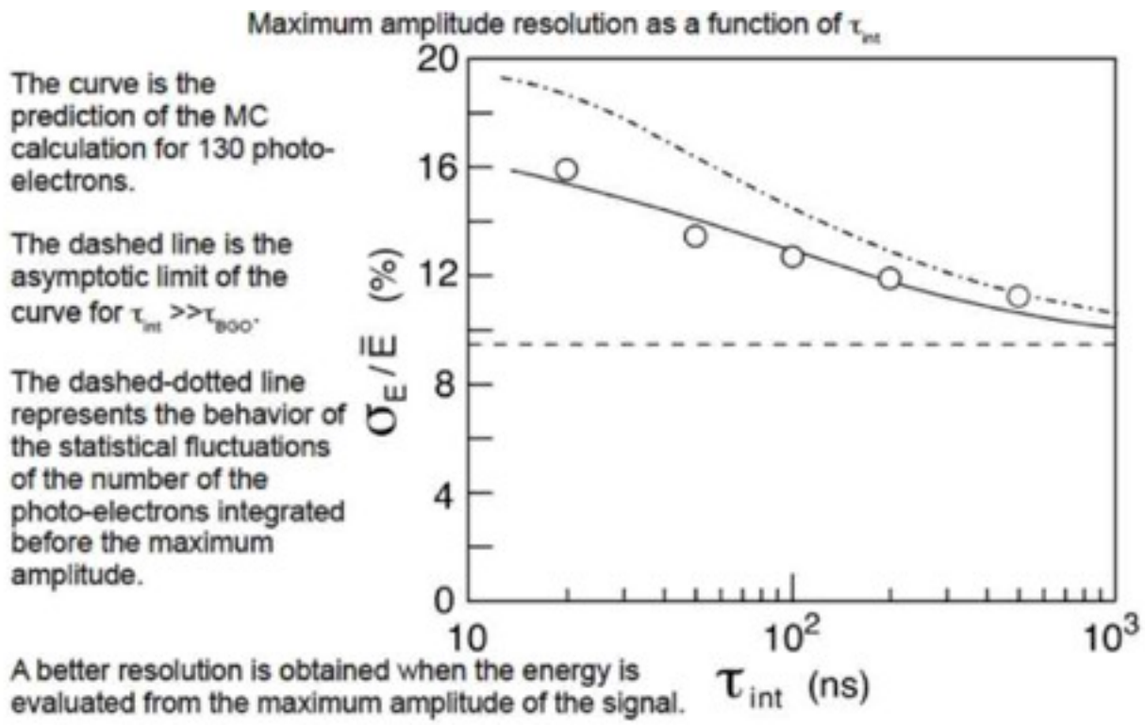
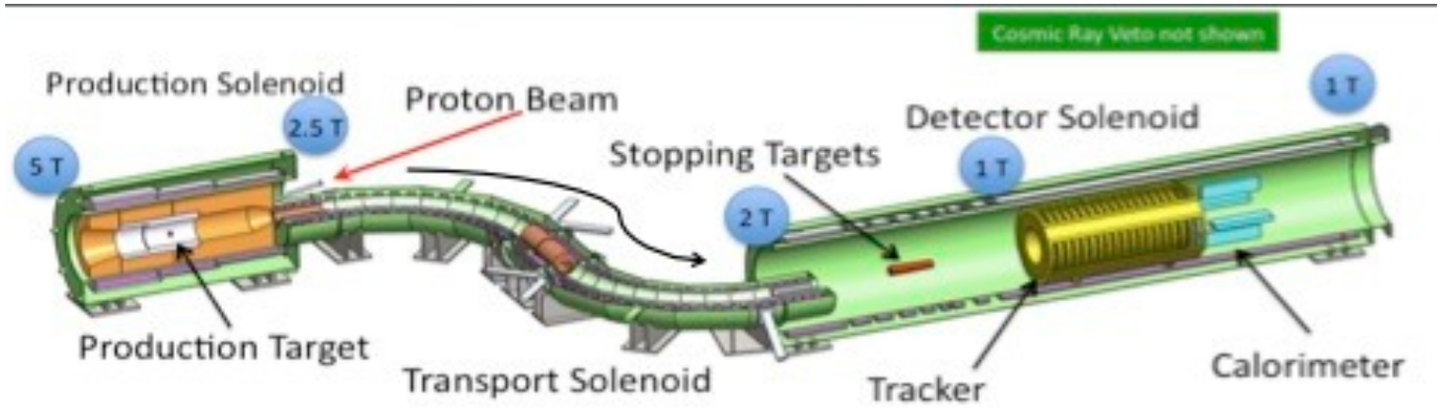
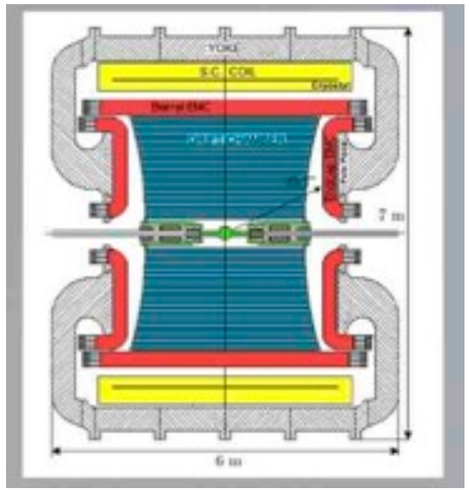




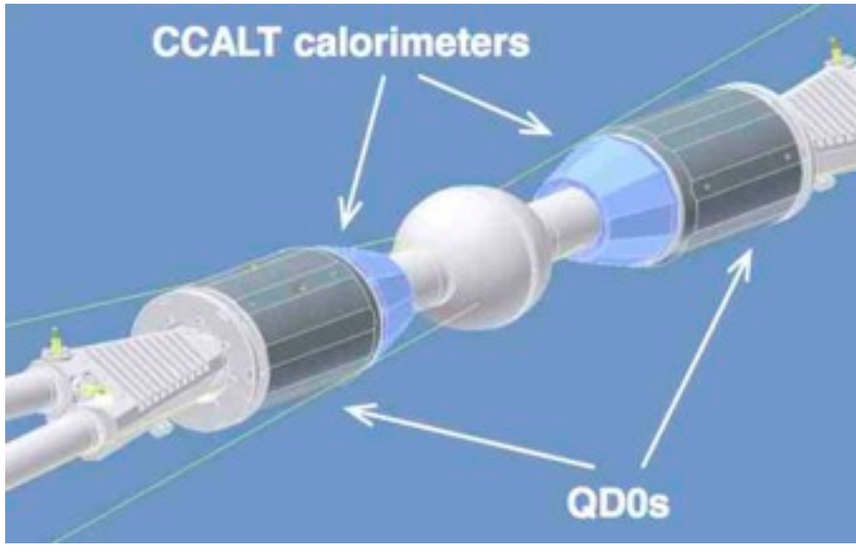
New development cont'd

- KLOE-2 CCALT by S. Giovannella (LNF)



LYSO
Preliminary test

Upgrade of the DAFNE machine layout

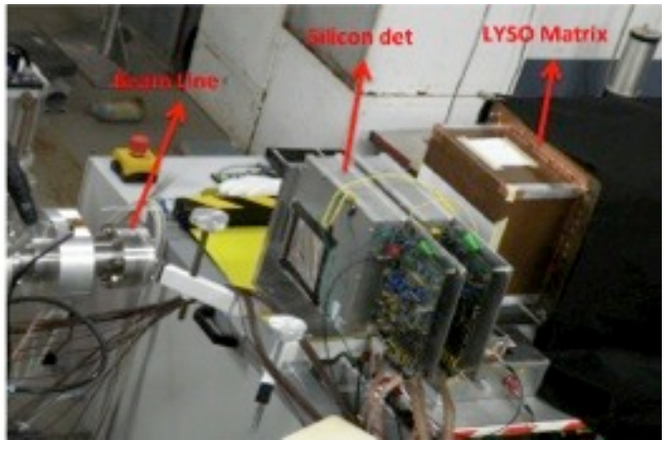


- KLOE-2 QCALT by A. Saputi (LNF)

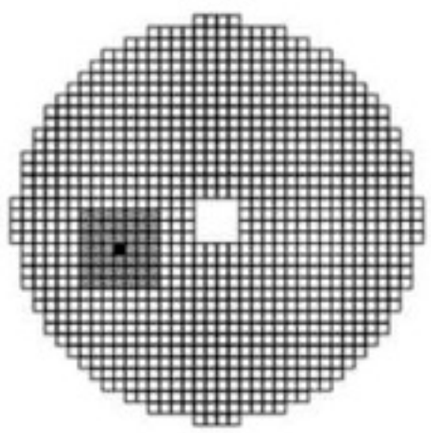
Construction in progress

New development cont'd

- LYSO calorimeter for SuperB by A. Rossi (Perugia)

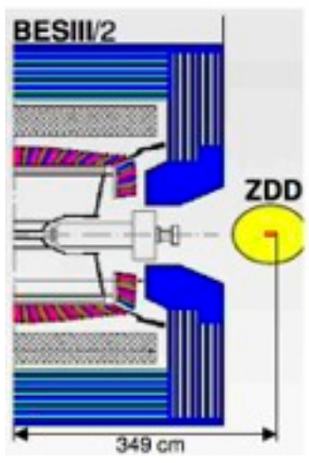


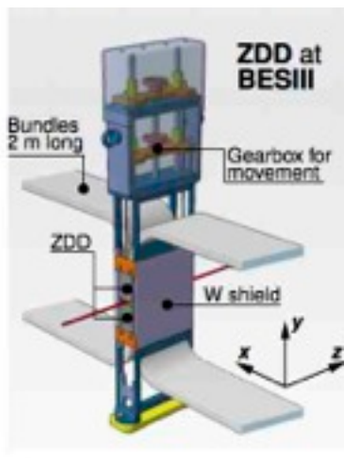
- Shower Library technique H1by N. Raicevic (Montenegro)



- Contains energies in a box around the hottest cell
- Binned logarithmically in energy , linearly in impact position inside the hottest cell and impact angle
- Translational invariance used to place showers for different hottest cell

- Pb-Scifi Calorimeter for BES III by A. Zallo (LNF)

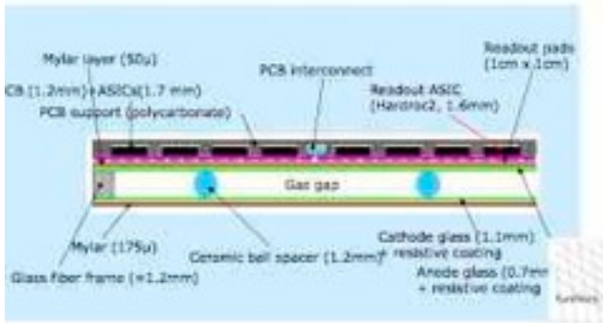


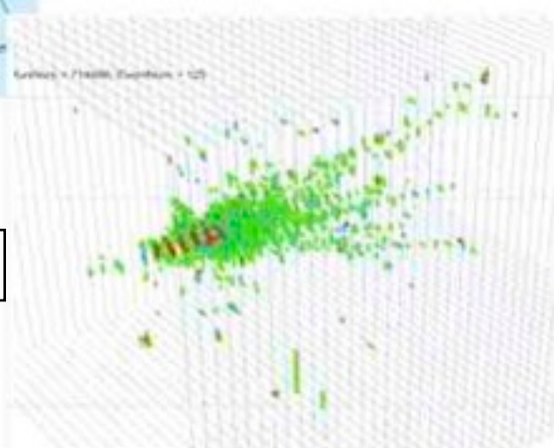


New development cont'd

- Semi-Digital HCAL using GRPC for ILC by S. Mannai (UC-Louvain)
- CALICE scintillator-tungsten HCAL for CLIC exp. by A. L. Timoce (CERN)

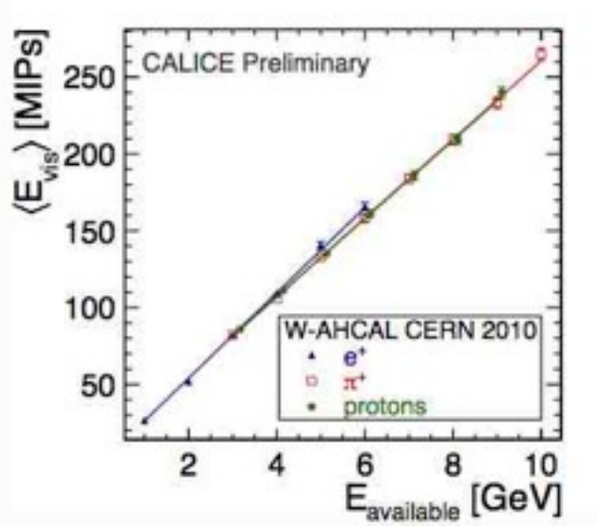
Glass Resistive Plate Chamber





test beam May 2012 !

- Built by CALICE collaboration: $1 \times 1 \times 0.75$ m^3 prototype, **30 layers**
- Absorber: tungsten alloy (density: 17.8 g/cm^3)



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