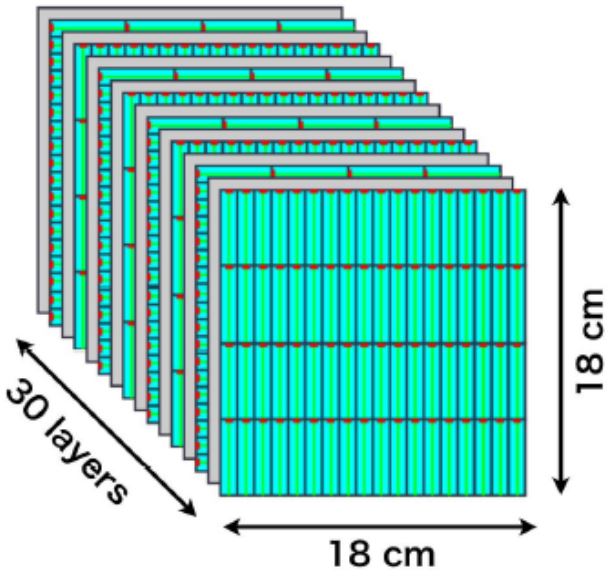
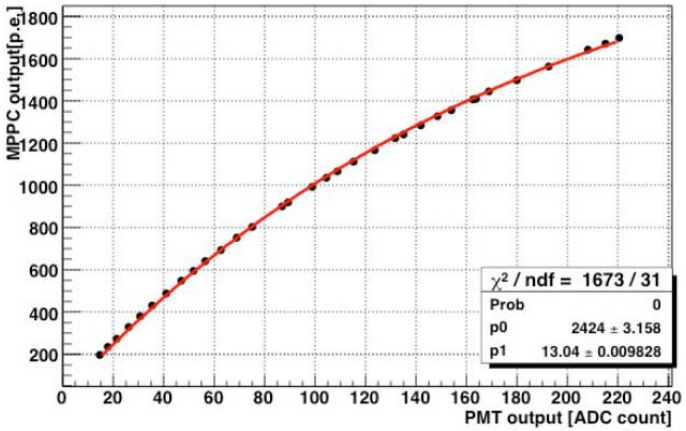
Summary of publications etc.

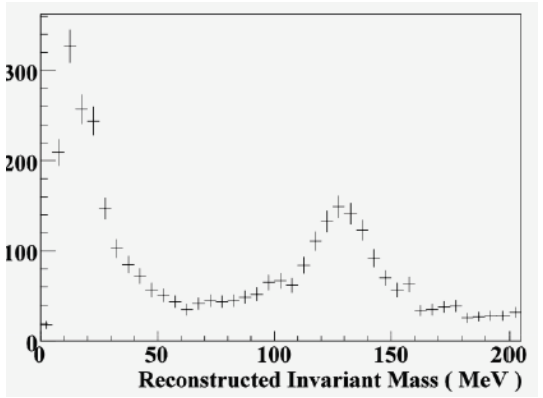
- Currently ~20 Papers
- + two very close to submission (PFA tests, TCMT paper)
- ~30 analysis notes Analysis Notes (approved preliminary results for conferences); at least 10 should turn into papers, possibly in suitable combinations. Two more currently under collaboration review.
- 15 theses listed ; almost certainly more; our records are not complete.
- Many Conference talks and posters

Scint-W ECAL results (CAN-016)

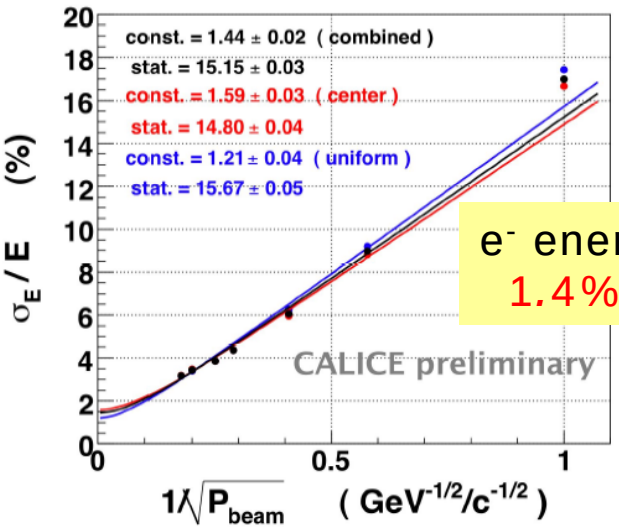


Saturation curve of MPPC

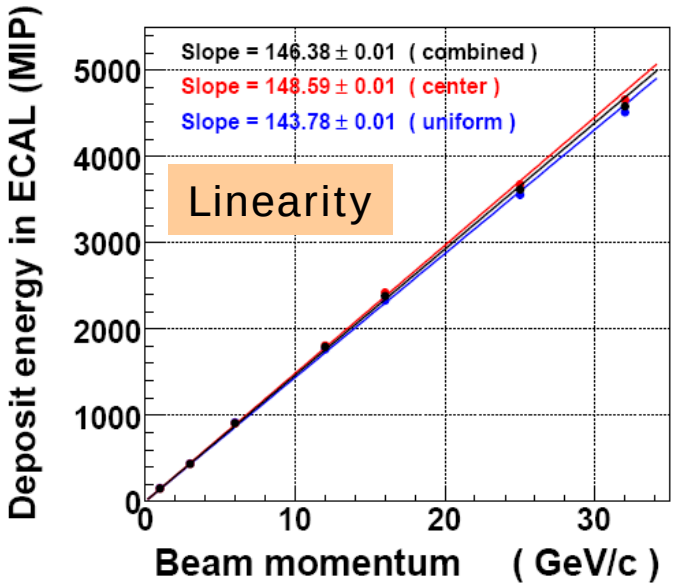




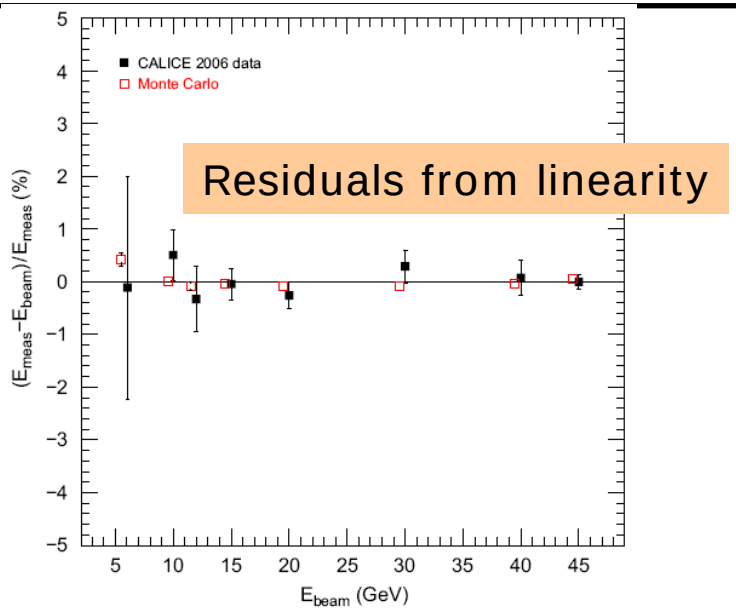
π^0 reconstruction



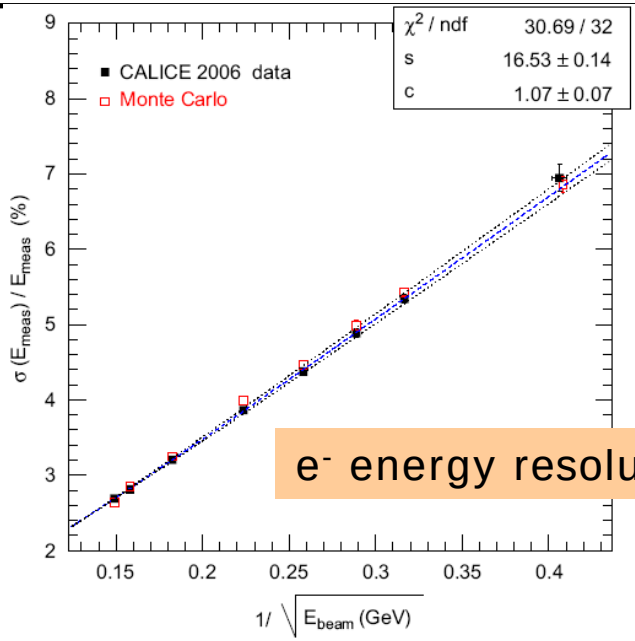
e⁻ energy resolution
$1.4\% \oplus 15.1\%/\sqrt{E}$



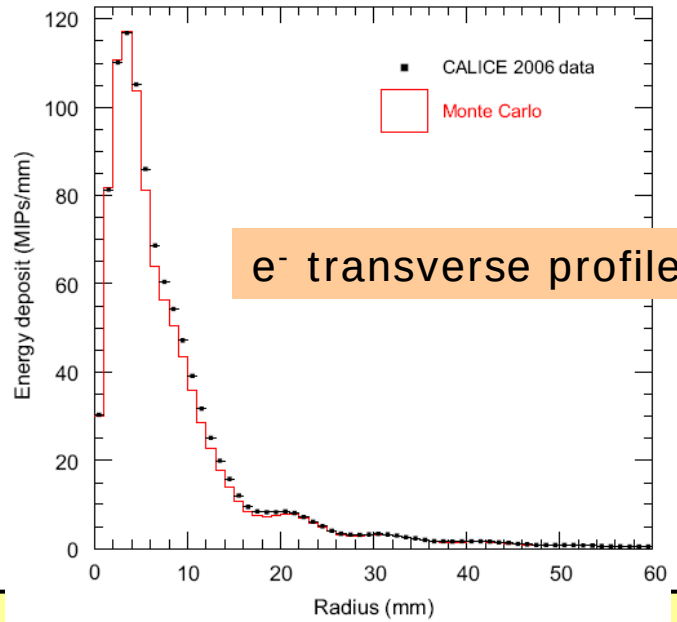
Some electron results in Si-W ECAL



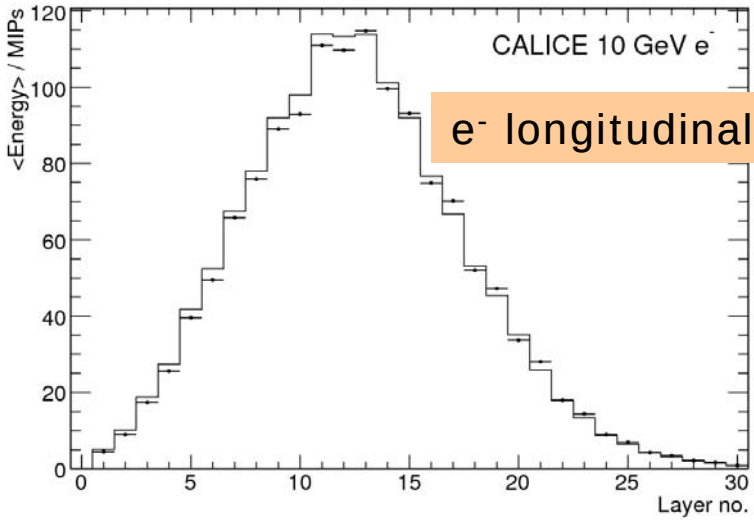
Residuals from linearity



e^- energy resolution

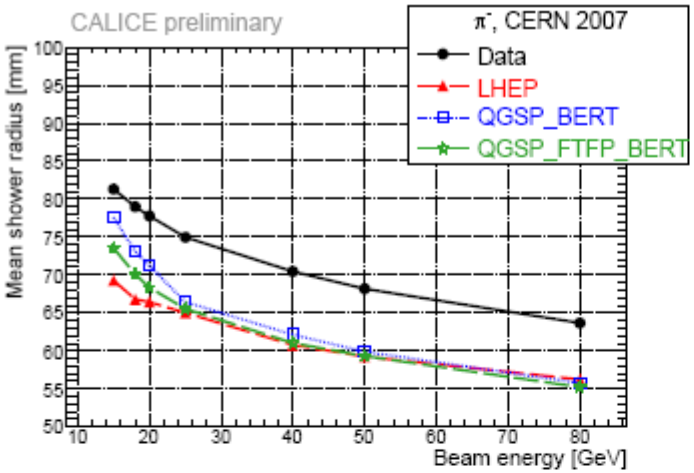


e^- transverse profile

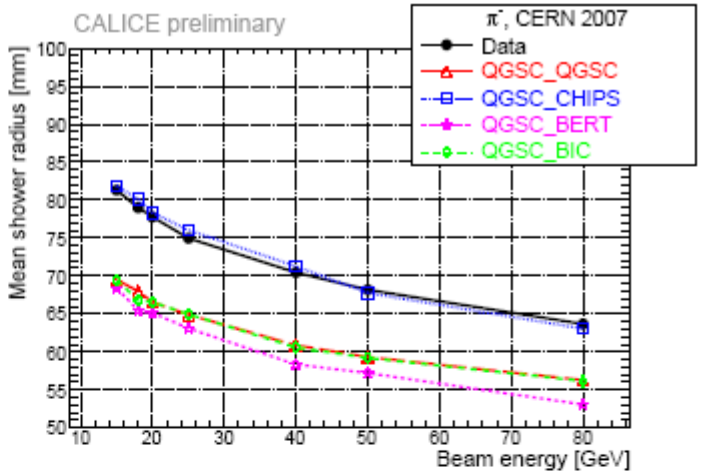


e^- longitudinal profile

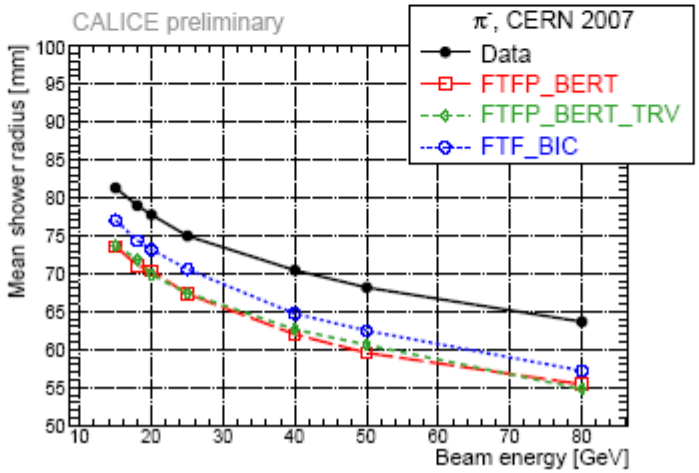
Mean shower radius in HCAL



(a)



(b)



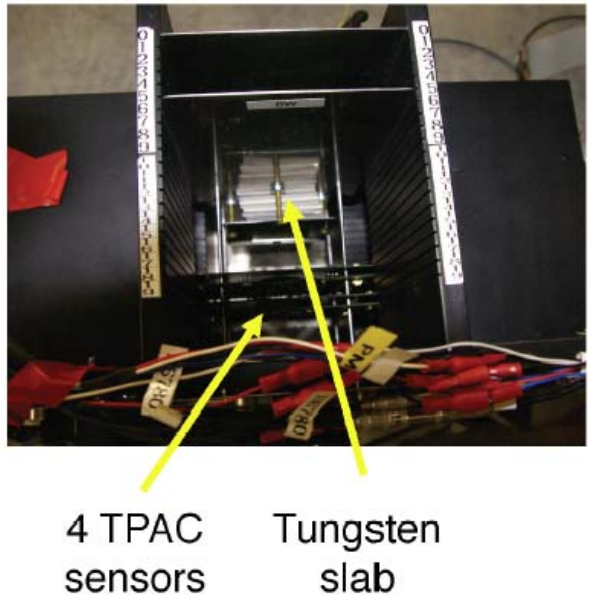
Most physics lists give too small shower radius

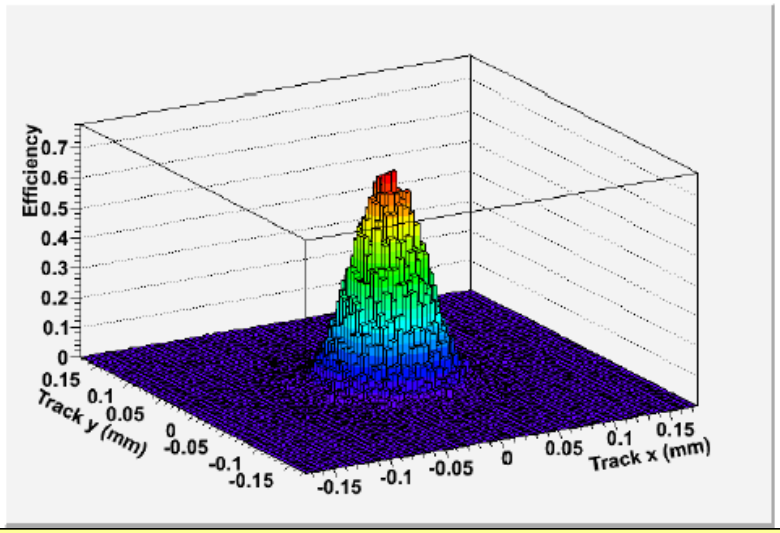
QGSC_CHIPS close

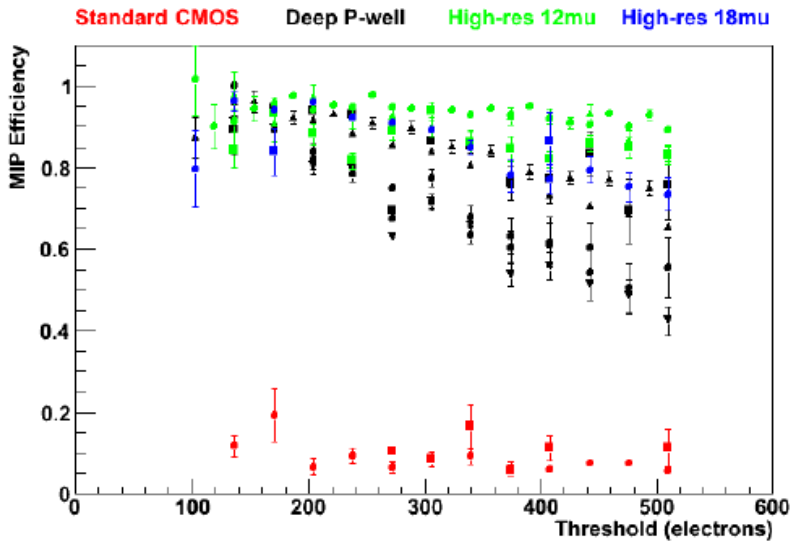
GEANT 4.9.2 used

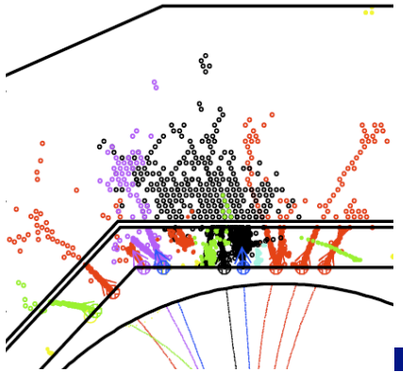
DECAL

- Idea to read out ECAL in digital mode.
- Simulations suggest the idea is vialble.
- High energy density⇒ very small pixel size, $\sim 50\mu m$.
- Explore use of MAPS CMOS sensors
- Successful beam tests of sensors.
- Project now suspended because of funding difficulties in the UK.



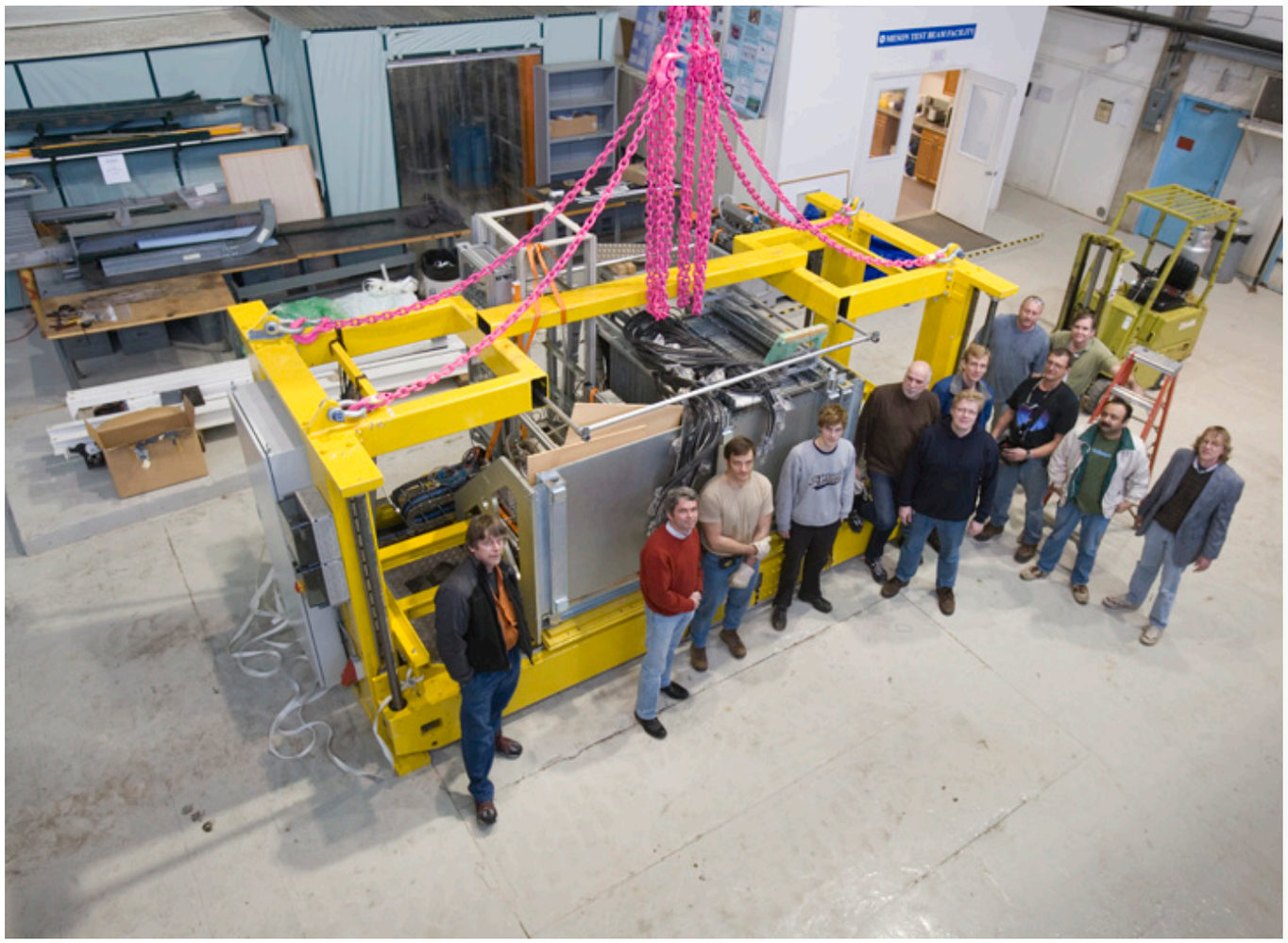


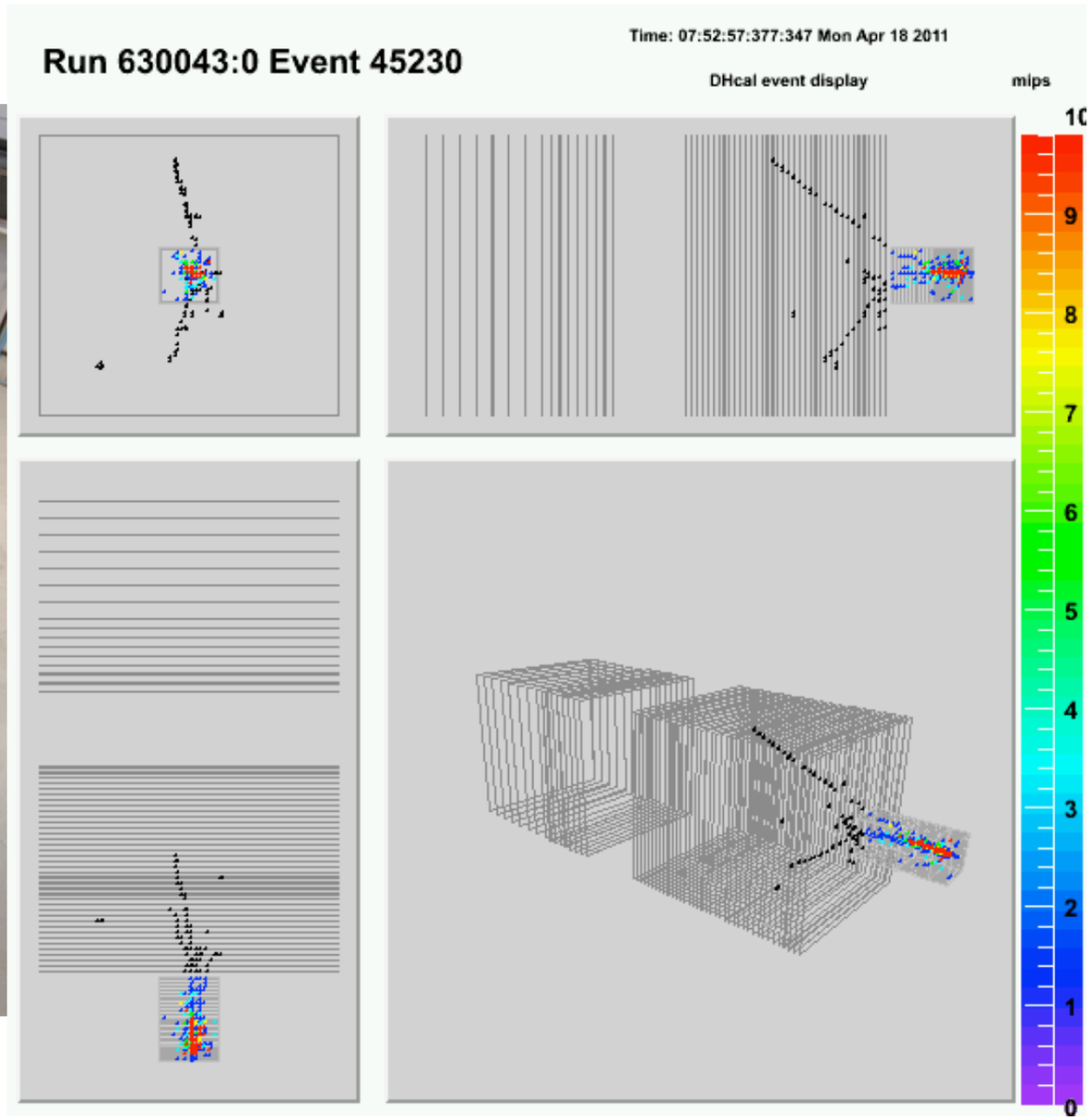


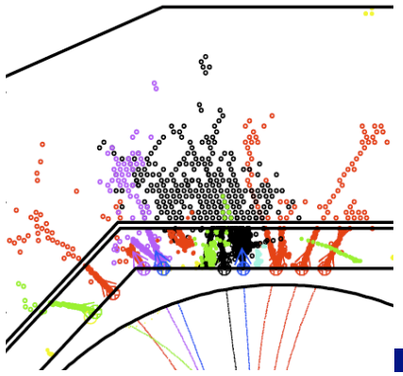


Thank you

- The DHCAL test at Fermilab uses the AHCAL absorber and movable stage which were built at DESY with this mind







Request to the PRC

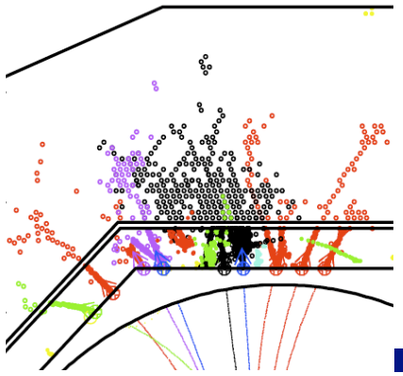
- We ask the PRC for **endorsement** of our program, in particular:

- to support the completion of **test beam data taking** and analysis and **prototype development** and test, in order to deliver the calorimeter input to the ILC detector baseline documents **2012**

- to acknowledge the **relevance** and fruitfulness of our studies for the advancement of the understanding of calorimetry in **general**

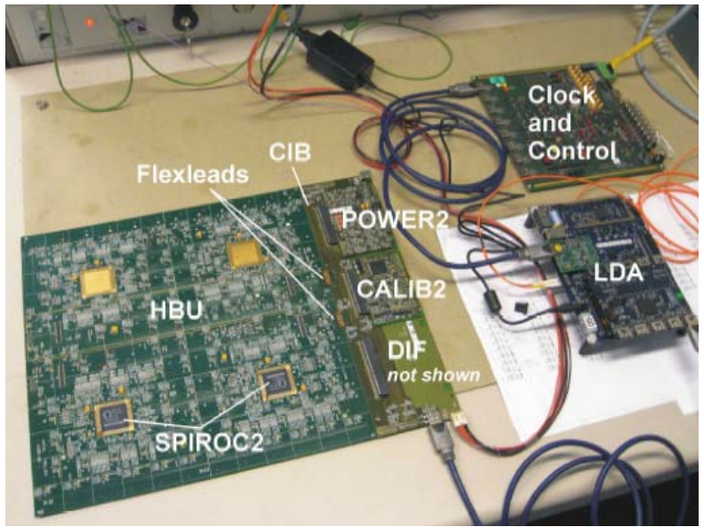
- to back up our requests for test **beam time** in view of the mission we have to fulfill within the global LC effort

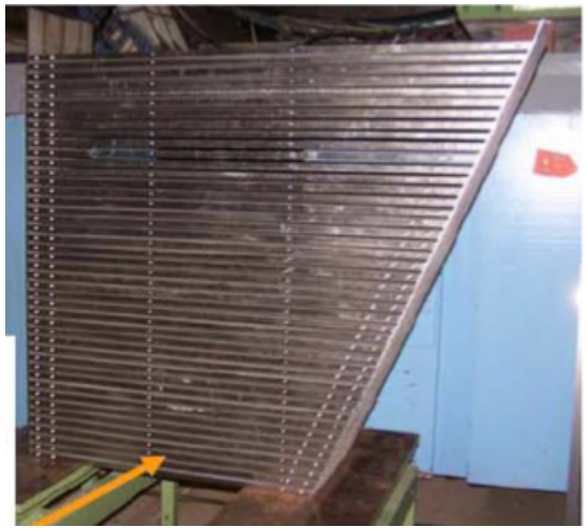
- to recommend a continuation of the scintillator based calorimeter **R&D effort at DESY**, including the studies with heavy absorber materials **beyond 2012**

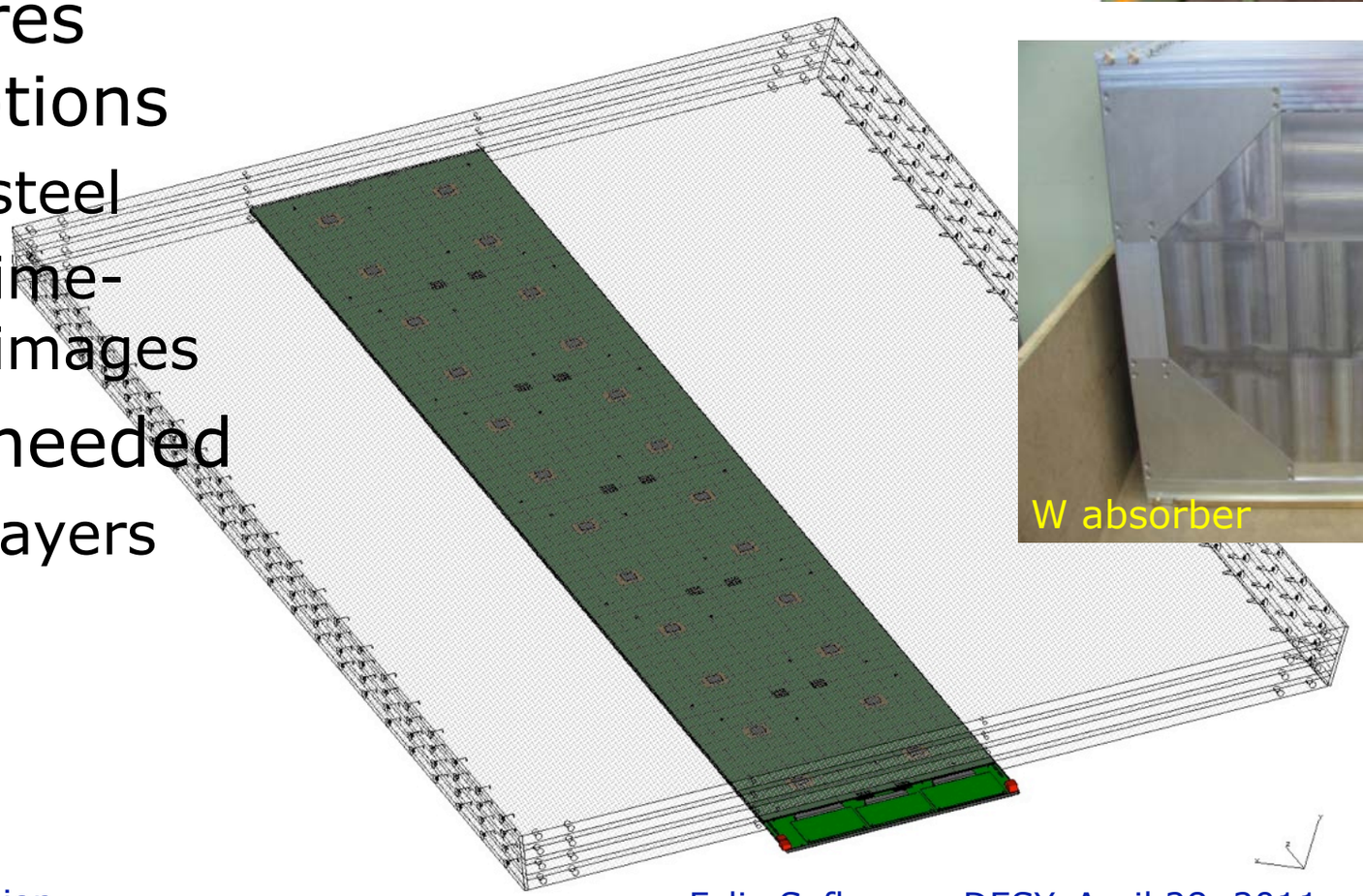


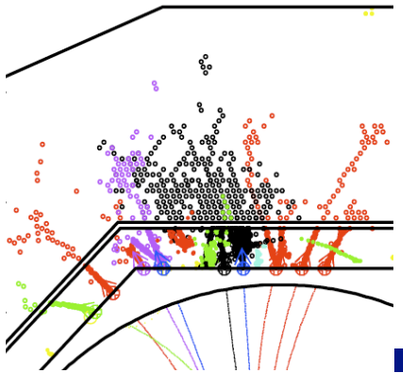
Scintillator HCAL plans

- ASICs and DAQ are in hand
- 1-2000 tiles with SiPMs on the way at ITEP
- different existing absorber structures open different options
  - EUDET stainless steel
  - AIDA tungsten: time-resolved shower images
- PCBs and SiPMs needed
  - 22000 ch for 40 layers









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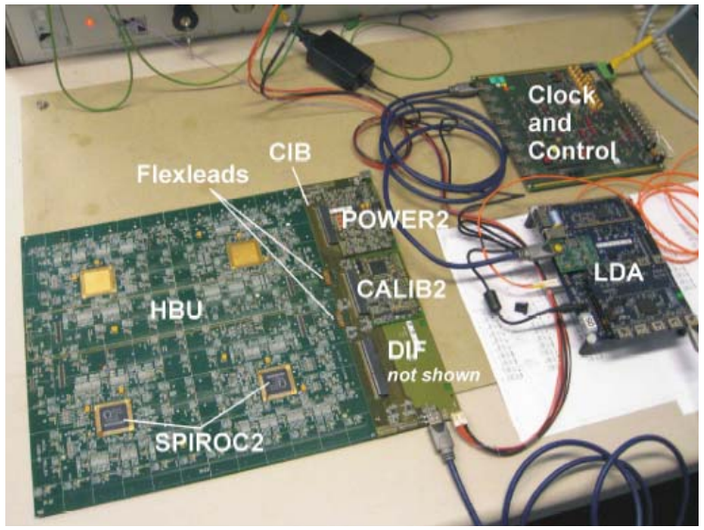

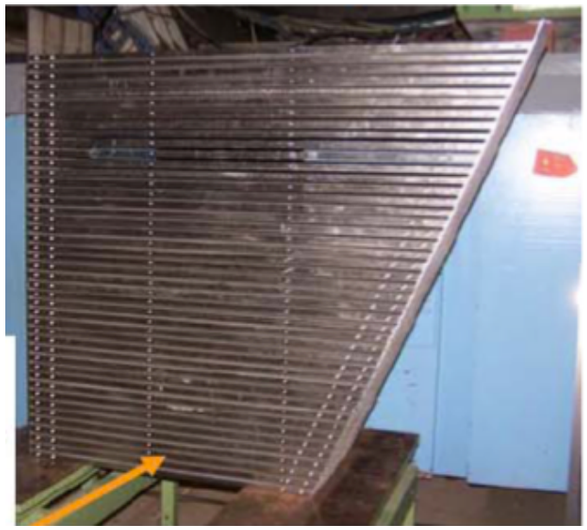

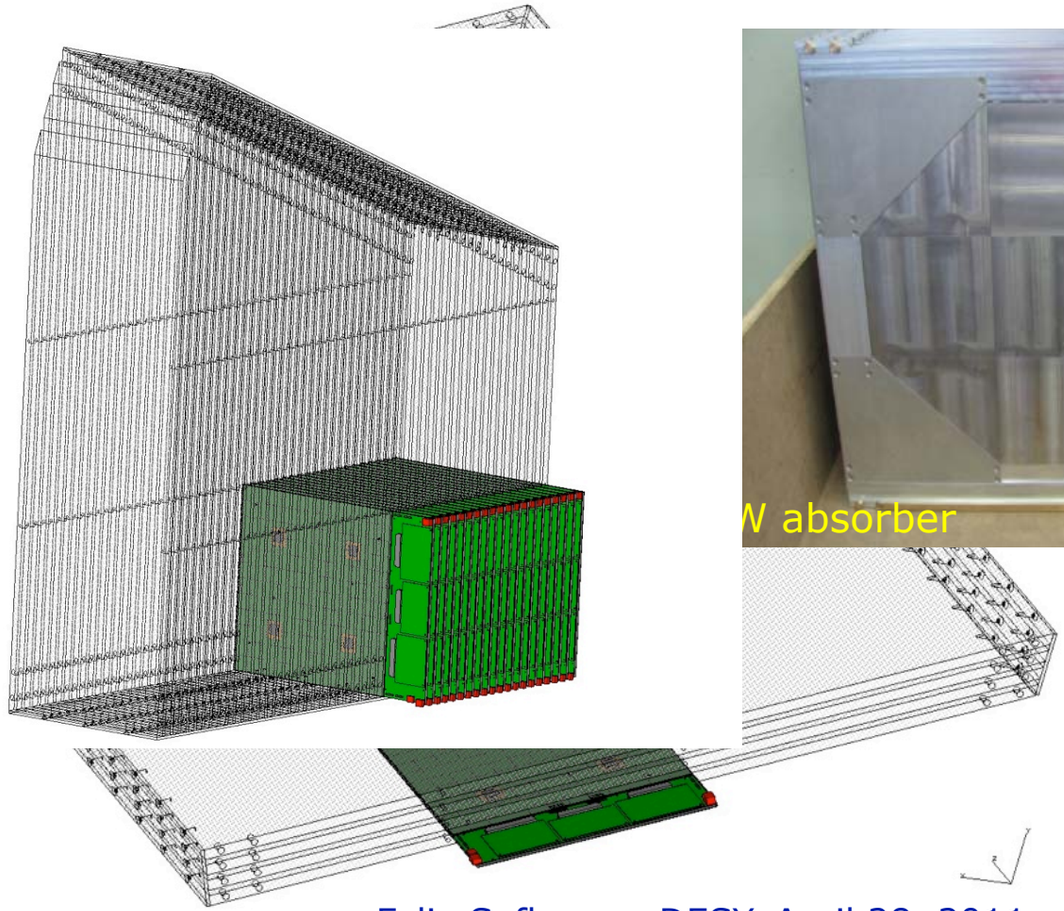

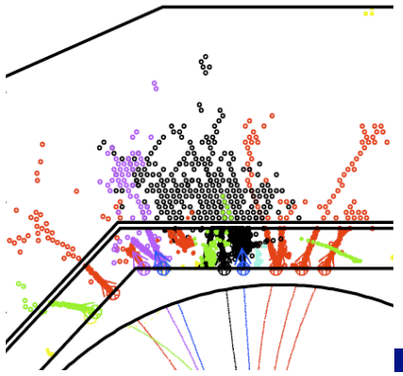

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