

Closeout

Wolfgang Lohmann, BTU, DESY and RWTH

FCAL workshop DESY Hamburg, October 2018

Statistics

21 talks

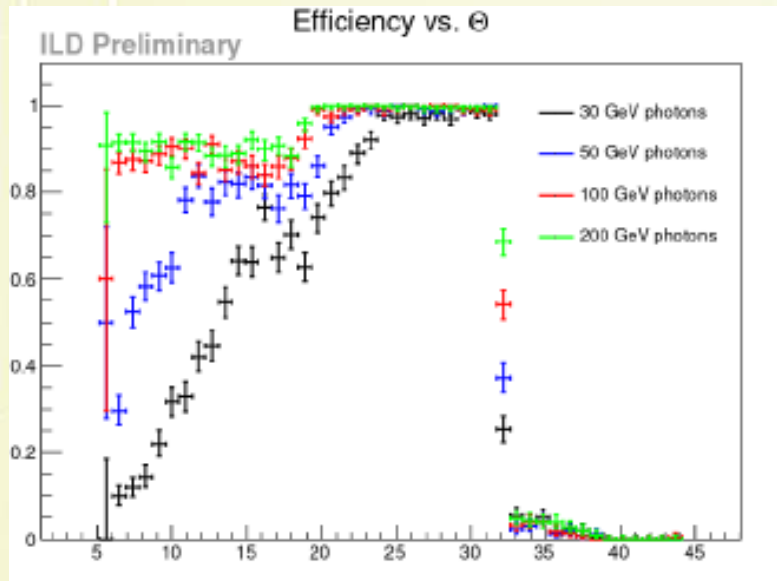
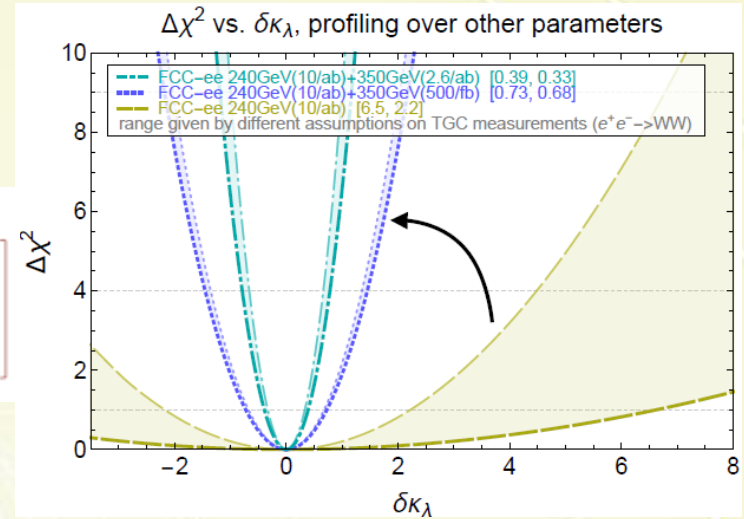
Electroweak symmetry breaking	1
WG reports	3
Sensors and detectors	3
Electronics	2
Simulations and design	5
Papers and publications	3
LAB activities	3
CLIC detector status	1

About talks

Electroweak symmetry breaking (Ch. Grojean)

At 240 GeV:

$$\sigma_{Zh} = \left| \begin{array}{c} e \\ \\ \\ e \end{array} \right. \begin{array}{c} Z \\ \\ \\ h \end{array} \right|^2 + 2 \operatorname{Re} \left[\begin{array}{c} Z \\ \\ \\ h \end{array} \cdot \left(\begin{array}{c} e^+ \\ \\ \\ e^- \end{array} \right) \begin{array}{c} Z \\ \\ \\ h \end{array} + \begin{array}{c} e^+ \\ \\ \\ e^- \end{array} \begin{array}{c} Z \\ \\ \\ h \end{array} \right]$$



There are tensions in the SM
(Sasha Borysow, B. Pawlik)

➤ Tasks:

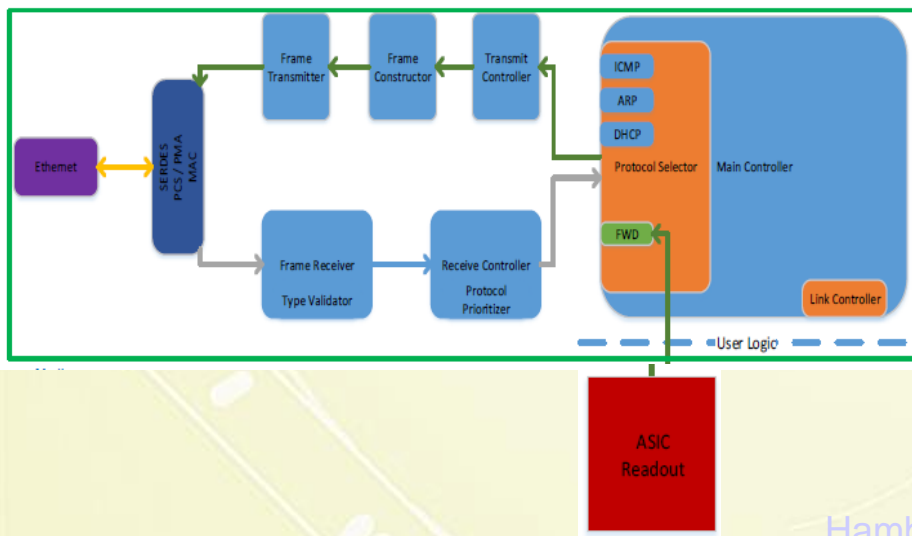
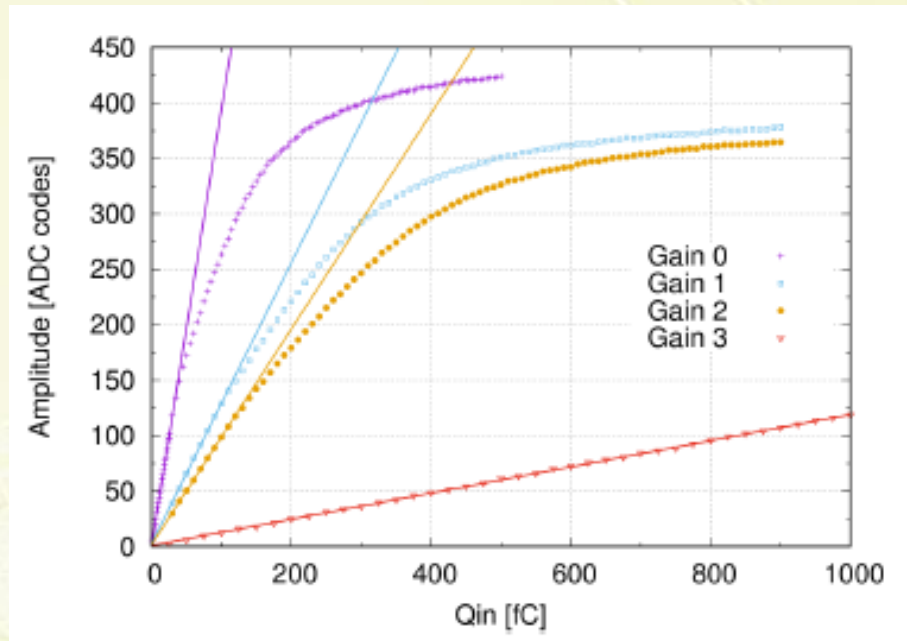
- validate performance with new ILD model
- study/improve Clustering Algorithms
- software Alignment/Calibrations with beam background (muons)

➤ Simulation/Validation :

Past/Present: A.P.S, B.P., O.B., S.L
Future: ??

About talks

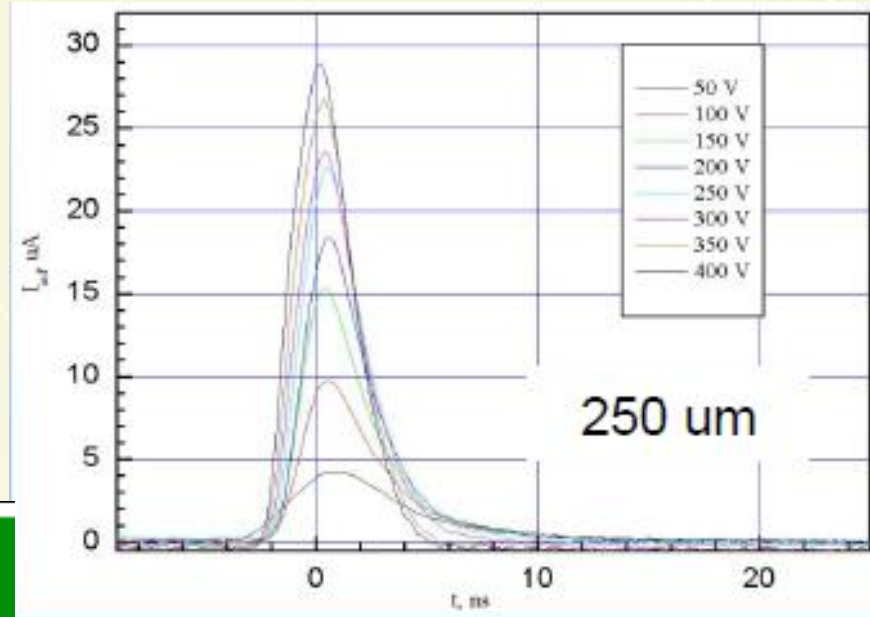
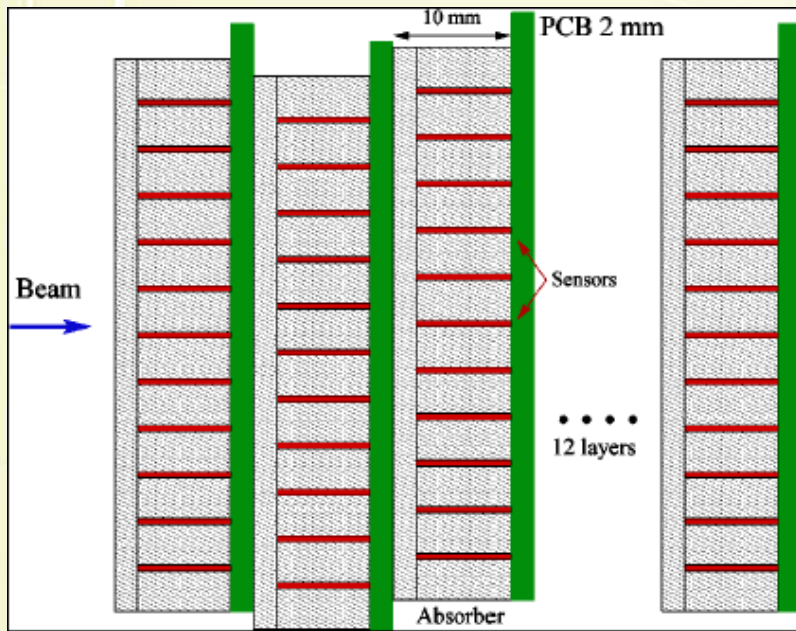
FE Electronics and read-out (J. Moron, M.Firlej,.....)



FPGA module (L. Zawiejski, W. Daniluk,)

About talks

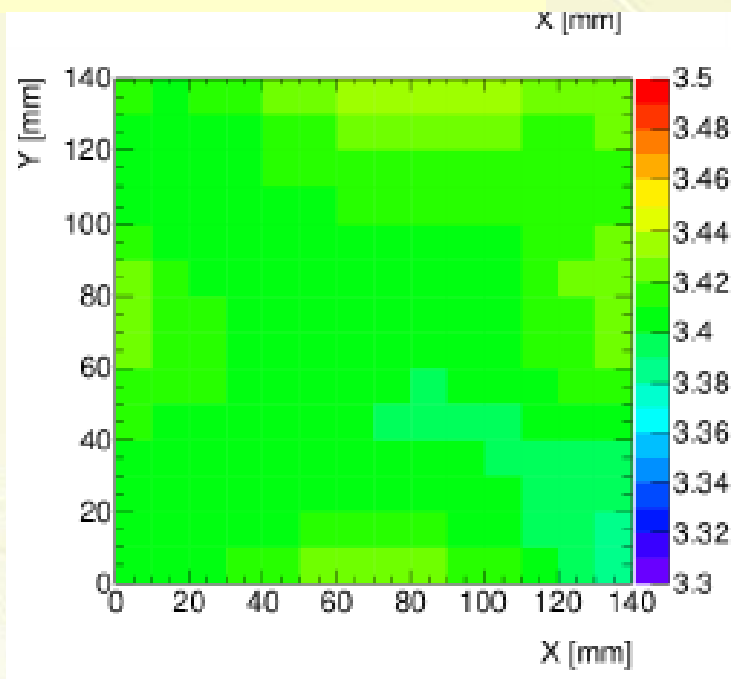
GaAs sensors (A. Tyazhev)



Sapphire sensors (S. Schuwalow)

About talks

Tungsten Absorber plates (A. Zhemchugov)



**CLIC 380
GeV**

(data without safety
factor!)

Cell size
[mm²]

Occupancy per
train
(average –
maximal)

Clicdp
(K. Elsener)

LumiCal

4 x 13-44

1 - 9

BeamCal

8 x 8

8 - 36

About talks

Activities in Kiev

(V. Aushev)



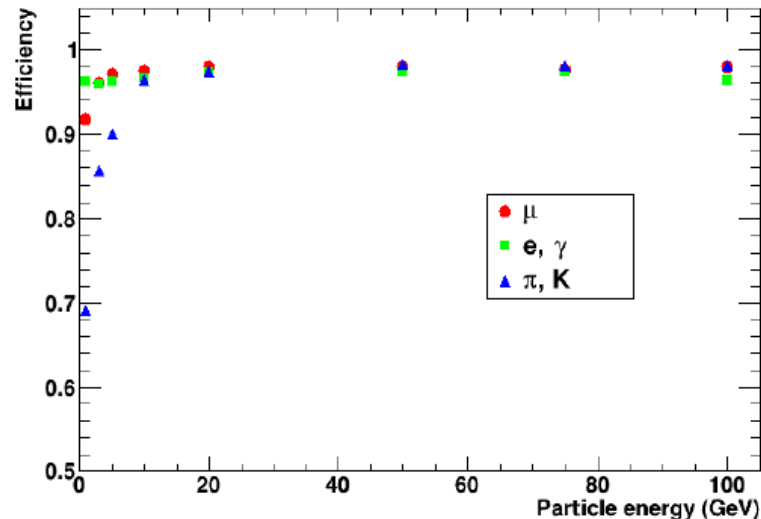
Field of our interests:

further study of LHCAL in order to optimize the detector design, e.g.,

- Use machine learning for detector studies.
- different segmentation of sensitive layers of the calorimeter,
- the sensitive region of LHCAL overlaps with LumiCal and it would be nice to see how this affects the development of the shower and the measurement in LHCAL.

Deposited Energy vs $\langle Z \rangle$ vs number of cells vs σ_L, σ_T

ML_W_sumEn_meanZ_nCell_sigL_sigT



LHCAL design
(Y. Ornishchuk)

About talks

Simulations Pair monitor (I. Bozovic)

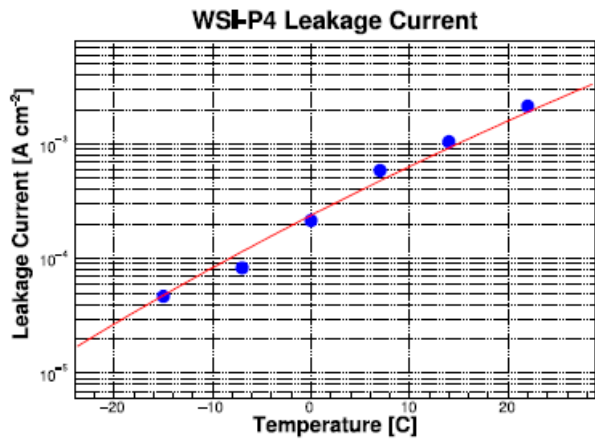
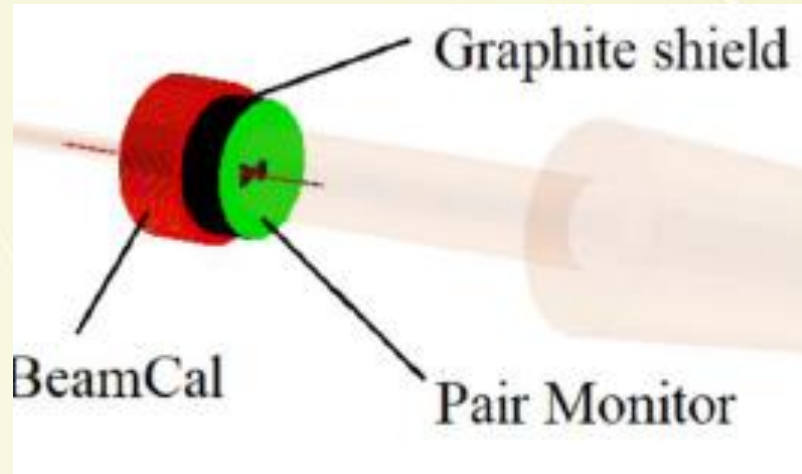


Fig. 2. Observed temperature dependence of the area current density of the WSI-P4 silicon diode sensor biased at 600 V, after irradiation. The fit is to the function of the form of Eq. (1).

BeamCal radiation field (B. Schumm)

Many thanks to

- Sergey,
- DESY
- All the secretaries who helped us

See you at CERN in March