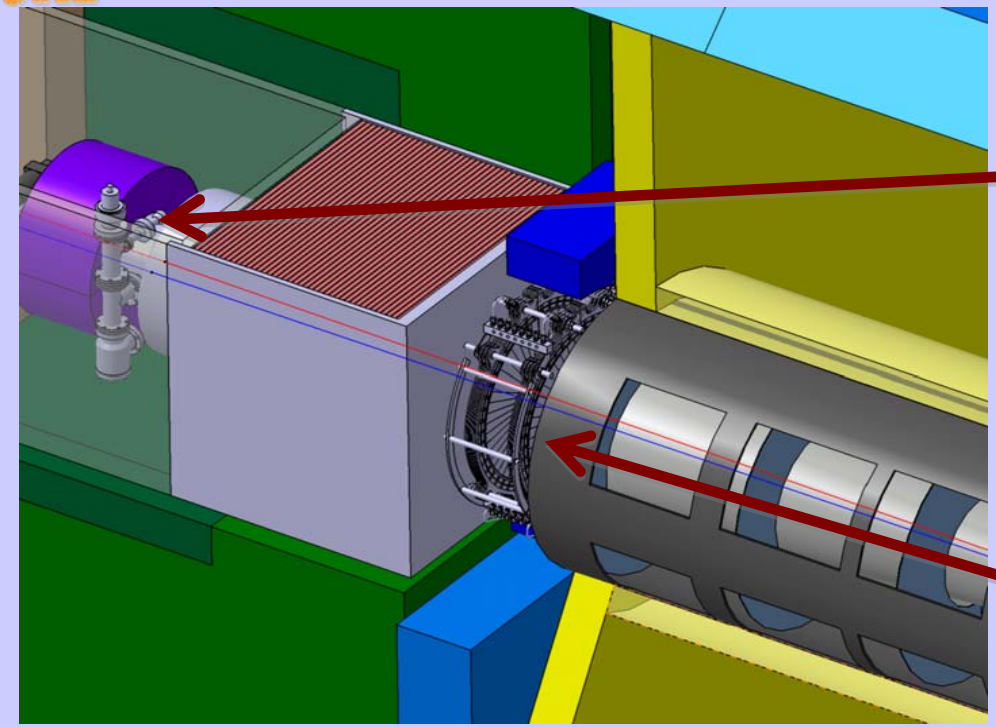
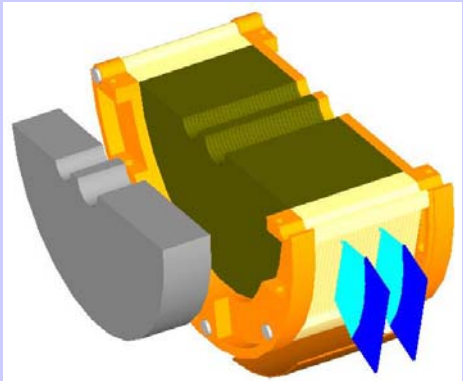
Conclusiions of the Cracow 2010 FCAL Meeting

Labs involved: Argonne, Vinca Inst, Belgrade, Bukharest, CERN, Univ. of Colorado, Cracow UST, Cracow INP, IKP Dresden, JINR, Royal Holloway, NCPHEP, Santa Cruz, Stanford University, SLAC Tuhoku Univ., Tel Aviv , Univ., DESY (Z.)

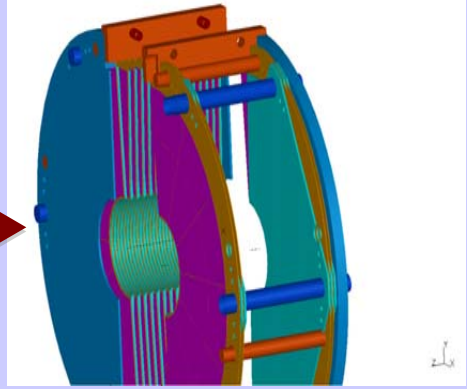
Very forward detectors- challenges



BeamCal + Pair Monitor



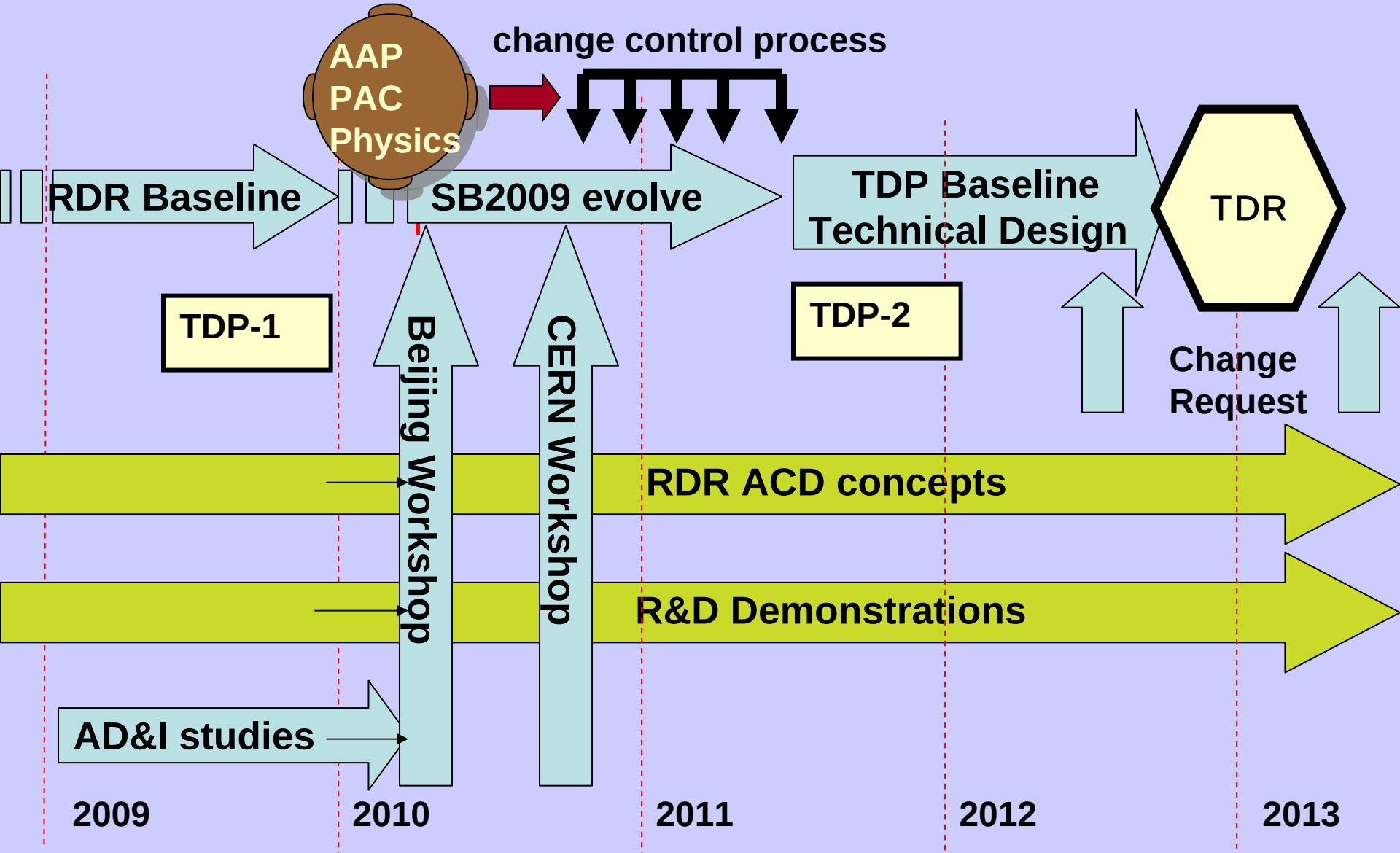
LumiCal



- Ongoing simulations to optimize detector design for
  - precise luminosity measurement,
  - hermeticity (electron detection at low polar angles),
  - assisting beam tuning (fast feedback of BeamCal data to machine)
- Challenges: radiation hardness (BeamCal), high precision (LumiCal) and fast readout (both)

Our Goal – Develop Technological Solutions to tackle the Challenges

ILD Planning



Simulation Studies to Refine the Design

BeamCal: Electron Detection Capability

SB2009 beam parameter, no anti DID??

Talks by Madalina, Olga, first results.

LumiCal: Study of systematic by Bogdan, Itamar, Ivan,.

Larger Background for SB2009, possibly no anti-DID, larger inner radius

Both: - exercise of a calibration concept, using muons and Bhabhas

- Conceptual design at 1 TeV, CLIC Design at 3 TeV

CLIC CDR in 2011 !!Good progress to estimate background, talk by Andre, QD0 impact investigated by Eliza

Mechanics Design

New design of LumiCal (Woitek)

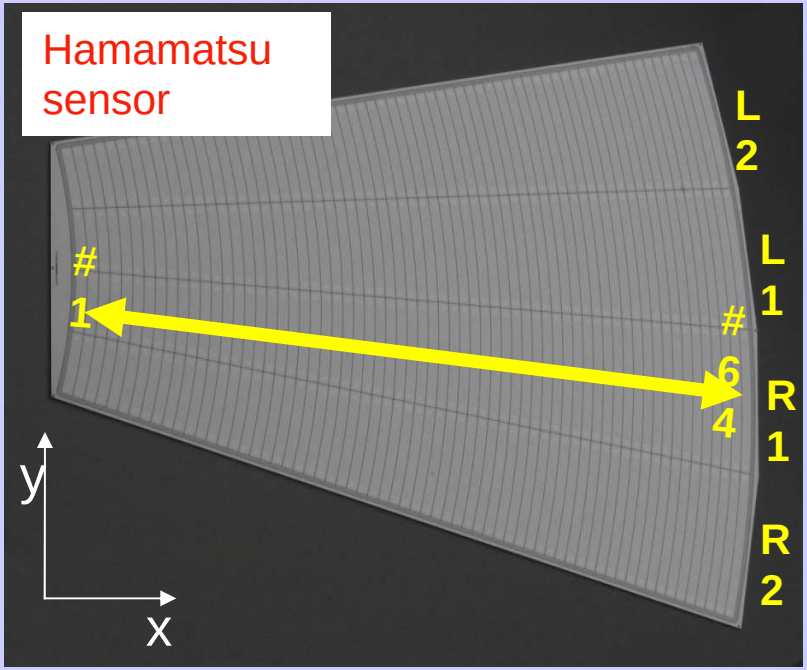
- Less material in the area of electronics
- Simplified support structure

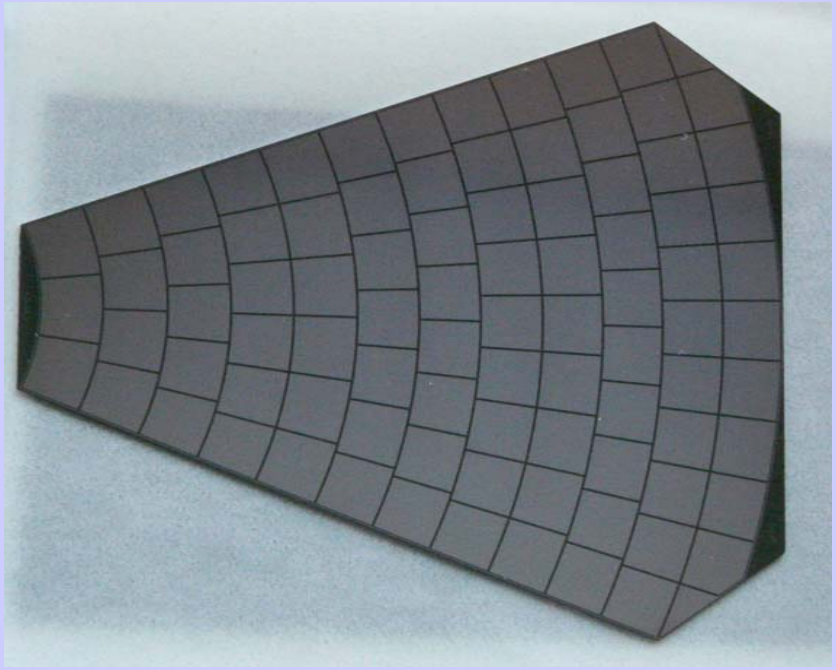
Test Beam

- Talks by Hans and Szymon, Jonathan
- Many details clarified, target: Testbeam end JULY
- Preparation meeting at DESY (Hamburg) to operate the telescope (May/June)

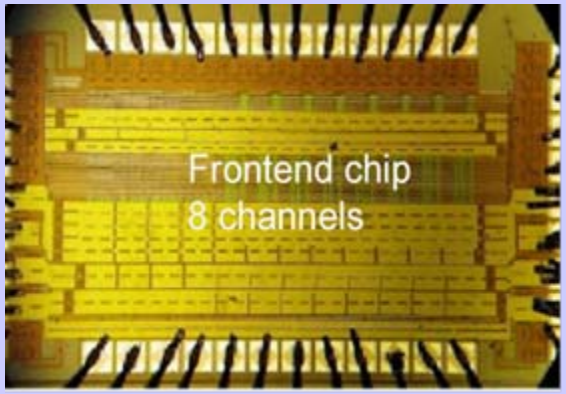
Sensors

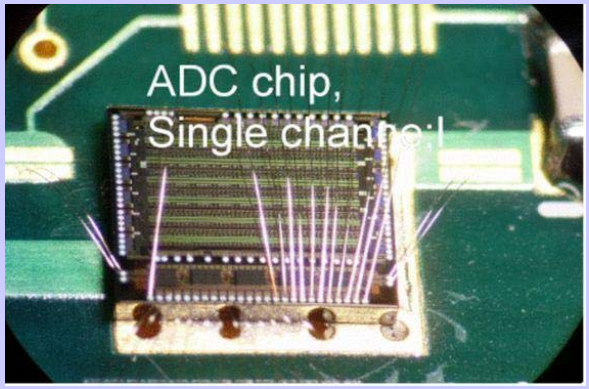
Sensors available and partly tested;
Before test beam a full test should eb done.



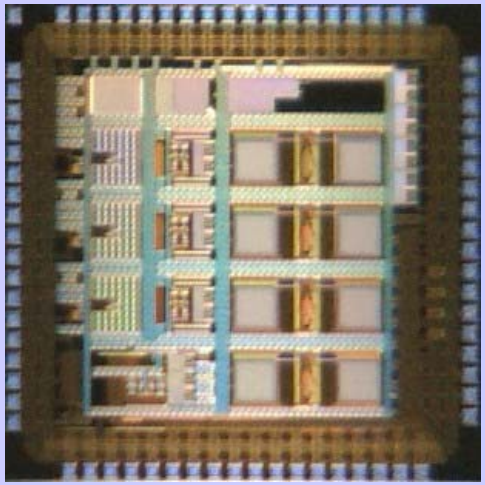


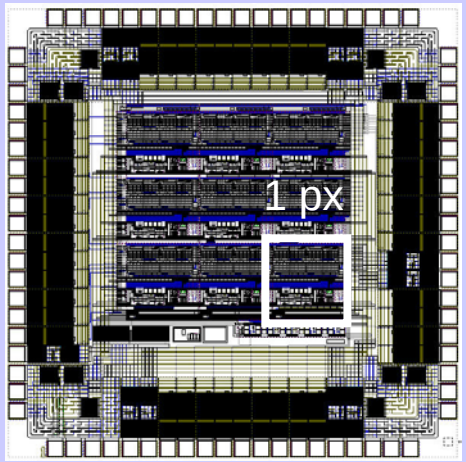
FE ASICs





- Talk by Krzystof, more clear picture on the system concept and data rates
- Sato-San report on rad studies of Pair monitor readout
- Angel on prototype studies – great success.





BeamCal sensors

New test program for diffferently doped silicon in UC Santa Cruz

By Bruce Schumm,

electrons spectrum similar to what we expect at the shower maximum

Plans for irradiation at CBAF

Test results presented by Sasha and Olga, promising.

Next steps in FCAL R&D

shortterm:
Refine simulation studies
Complete publication

Full assembly of a Prototype Sector

- Sensors and ASICs connection (Cracow, DESY, help from other labs)
- DAQ (+Tel Aviv, CERN)
- Goal: Beamtest in July at DESY

midterm:

FP7 application (AIDA)

- Infrastructure to allow 'Physics studies" after 2012
- Cracow (2x), DESY, Tel Aviv (from EUDET)
  + VINCA and IFIN-HH (associats)
- Test of KPiX (Stanford)
- Irradiation Studies (Santa Cruz)

FP7 Partners:

AGH-UST Cracow (Marek Idzik)
CERN Geneva (Lucie Linsen)
DESY Zeuthen (W. Lohmann)
IFJPAN Cracow (L. Zawiejski)
TAU Tel Aviv (H. Abramowicz)

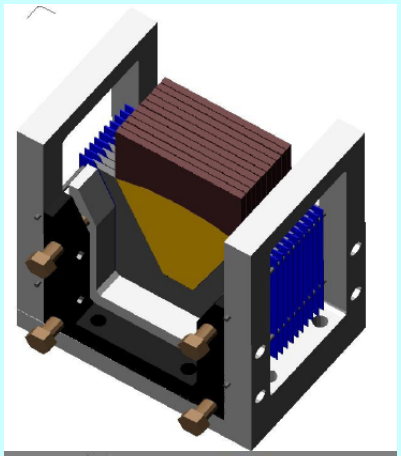
Infrastructure to tackle the scientific goal:

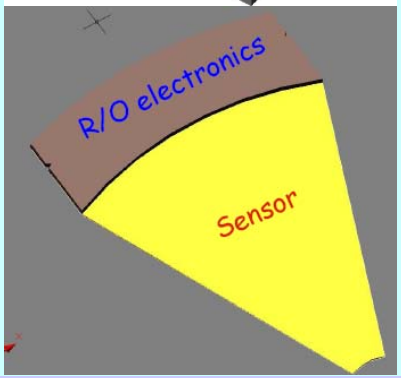
FCAL Specific infrastructure:

- Flexible, high precision tungsten structure
- Fast FE Readout
- Module construction and test devices (jigs, mechanics and electronics test facilities)
- Position control devices

Infrastructure common with others:

- Power pulsing
- Data acquisition
- Tracking in front of the calorimeter





Final Remarks

Next FCAL Workshop: Oct. 3-6 Tel Aviv

Next Linear Collider Meeting: Oct. @ CERN

Many thanks to the Oraganisers of this meeting, Leszek et al., Beata

The Institute of PAS for the Support

-The Dinner-