

Forward Calorimetry

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Physics Goal:

- Excellent EM shower position reconstruction for the Luminosity measurement
- Highly efficient electron tagging with rad. hard sensors

Technology:

Finely segmented and extremely compact calorimeters

Challenges:

- small Moliere radius (~ 10 mm), compact calorimeters)
- precise mechanics ($dL/L \sim 10^{-3} \rightarrow O(10\mu\text{m})$)
- high occupancy \rightarrow fast readout (after each BX at ILC, after a few BX at CLIC)
- critical quantity: polar angle bias

Partners:

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

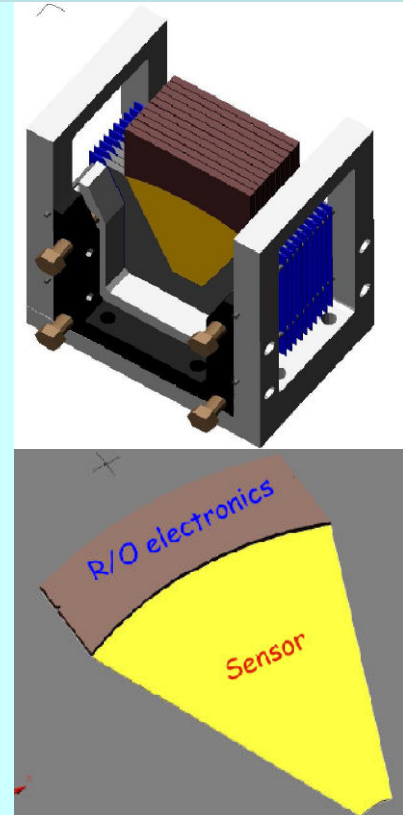
Infrastructure to tackle the scientific goal:

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

Common infrastructure:

- Power pulsing
- Data acquisition
- Tracking in front of the calorimeter
- ECAL as 'tail catcher'



Where we are

Prototypes of FE ASICs are available (8 channels per chip)
System test under way

ADC ASICs are available as one-channel version,
Development needs to be completed

Si Sensors (LumiCal) are produced, just tested

GaAs Sensor prototypes are available for BeamCal
Not yet tested.

No assembly done so far.