



## Forward Calorimeters Test Beam Results for Future Linear Colliders

*Saturday 7 July 2012 18:00 (1 hour)*

In detectors at Future Linear Colliders a Beam Calorimeter (BeamCal) is foreseen. The main BeamCal goals are coverage of low polar angles for new physics searches and beam tuning. The challenges are radiation hardness of sensors due to a large amount of beamstrahlung remnants, fast readout, fine granularity and compactness. A prototype of a BeamCal sensor made of GaAs with pad structures was assembled and successfully tested in the laboratory and on the 4,5 GeV electron beam (DESY II, Hamburg). Two test beams results are present 2010-2011. The sensor was connected to a fan-out, and specially developed front-end ASICs and flash ADC. Multichannel read out was shown working with recently developed DAQ. Results are obtained for signal-to-noise and the response as a function of the position on and between the pads.

In addition, results of the sensor characterization are presented: the leakage current measured as a function of temperature and the charge collection efficiency as a function of the operation voltage.

### Financial Support Justification for Early-Stage Researchers

A PhD student of DESY I would like to ask for support to go to ICHEP. My Mary Curie contract finishes in May and new DESY contract does not include travel money.

### Summary

FCAL collaboration is doing for last two years test beams for the Luminosity and Beam Calorimeters prototypes.

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