



Contribution ID: 80

Type: Poster

Luminometers for Future Linear Collider Experiments

Monday 15 July 2019 19:40 (20 minutes)

The electromagnetic sampling calorimeters projected for the forward region of the future linear collider are presently being designed by the FCAL Collaboration. The LumiCal and BeamCal detectors are dedicated systems for luminosity measurements at the ILC/CLIC experiments. The LumiCal detector provides a precise measurement of the integrated luminosity, while the BeamCal is designed for instantaneous luminosity measurement and beam-tuning when included in a fast feedback system, as well as for tagging beam particles scattered through low angles. To achieve the stringent ILC performance requirements, it is necessary for the calorimeter designs to be as compact as possible and to identify radiation tolerant sensors and readout technologies.

The performance of a prototype LumiCal was studied in an electron beam at DESY with a momenta in the range of 5 GeV. We'll present the design of this prototype as well as the result of this test beam study.

In addition, efforts are underway to develop a multi-channel ultra-low power ASIC for the LumiCal readout as well as an ASIC with a dual readout scheme for the BeamCal. We will also present the status of these development efforts, as well as radiation-damage results on candidate sensor technologies.

Authors: Dr GHENESCU, Veta (Institute of Space Science (RO)); LOHMANN, Wolfgang (DESY); LOHMANN, Wolfgang Friedrich (Deutsches Elektronen-Synchrotron (DE))

Presenter: Dr GHENESCU, Veta (Institute of Space Science (RO))

Session Classification: Wine & Cheese Poster Session

Track Classification: Detector R&D and Data Handling