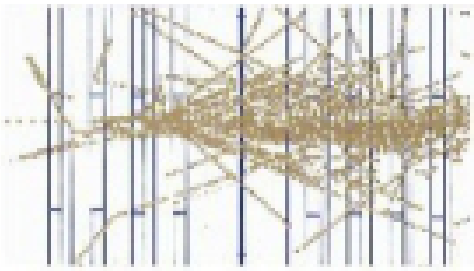

Contribution ID: **18** Type: **oral presentation**

Calibration and monitoring of a scintillator HCAL with SiPMs

Friday, 30 May 2008 09:20 (20 minutes)

Summary

The CALICE Collaboration

This talk will present the operational experience with a highly-granular analogue hadronic calorimeter (AHCAL) consisting of 7608 individual scintillator tiles readout via Silicon-Photo-multipliers (SiPM). The calibration of each cell is based on minimum ionizing particle signals for which a muon beam is used in first approximation. The full calibration of a cell, though, requires to account for the non-linearity introduced by the finite number of pixels (1156) in the SiPM. The aspects of temperature and voltage dependence of SiPM are addressed, and monitoring and calibration procedures are discussed. Such procedures are essential for the extrapolation of calibration factors over several days of data taking with the calorimeter. For this purpose a versatile UV-LED light distribution system was developed, capable of delivering light to all tiles with intensity from a few photo-electrons to the saturation of the SiPM. The procedures are tested using data collected with the AHCAL at the CERN SPS test beam.

Presenter: LUCACI-TIMOCE, Angela (DESY)

Session Classification: Calorimetric Techniques

Track Classification: Calorimetric Techniques