

Particle Showers in a Highly Granular Hadron Calorimeter

The CALICE collaboration has constructed highly granular electromagnetic and hadronic calorimeter prototypes to evaluate technologies for the use in detector systems at a future Linear Collider. The hadron calorimeter uses small scintillator cells individually read out with silicon photomultipliers. The system with 7608 channels has been successfully operated in beam tests at DESY, CERN and Fermilab since 2006, and represents the first large scale tests of these devices in high energy physics experiments. The unprecedented granularity of the detector provides detailed information of the properties of hadronic showers, which helps to constrain hadronic shower models through comparisons with model calculations.

We will discuss results on detector calibration strategies, on longitudinal and lateral shower profiles and on the energy reconstruction of hadronic showers. An overview over developments for the next generation of calorimeter prototypes will be presented.

Summary (Additional text describing your work. Can be pasted here or give an URL to a PDF document):

<http://www.mpp.mpg.de/~fsimon/InternalFiles/CALICE/SummaryVCI.pdf>

Primary author: Ms SEIDEL, Katja (MPI for Physics)

Co-author: Dr SIMON, Frank (MPI for Physics, Munich)

Presenter: Ms SEIDEL, Katja (MPI for Physics)