



Contribution ID: 1113

Type: Parallel Talk

## Hadronic Energy reconstruction in highly granular calorimeters

*Friday, 8 July 2022 17:15 (15 minutes)*

Prototypes of electromagnetic and hadronic imaging calorimeters developed and operated by the CALICE collaboration provide an unprecedented wealth of highly granular data of hadronic showers for a variety of active sensor elements and different absorber materials. We will discuss detailed measurements of the spatial and the time structure of hadronic showers to characterize the different stages of hadronic cascades in the calorimeters, which are then confronted with GEANT4-based simulations using a variety of hadronic physics models. These studies are performed on the two absorber materials, steel and tungsten, used in the prototypes. The high granularity of the detectors is exploited in the reconstruction of hadronic energy, both in individual detectors and combined electromagnetic and hadronic systems, making use of software compensation and semi-digital energy reconstruction. The results include new simulation studies that predict the reliable operation of granular calorimeters.

We will report on the performance of these reconstruction techniques for different electromagnetic and hadronic calorimeters, with silicon, scintillator and gaseous active elements.

### In-person participation

No

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