Contribution ID: **564** Type: **Parallel session talk**

Calorimetry with Extremely Fine Spatial Segmentation

Wednesday 26 May 2021 06:24 (18 minutes)

Particle Flow Algorithms (PFAs) attempt to measure each particle in a hadronic jet individually, using the detector subsystem that provides the best energy/momentum resolution. Calorimeters that can exploit the power of PFAs emphasize spatial granularity over single particle energy resolution. In this context, the CALICE collaboration developed the Digital Hadron Calorimeter (DHCAL). The DHCAL uses Resistive Plate Chambers (RPCs) as active media and is read out with 1 x 1 cm2 pads and digital (1-bit) resolution. In order to obtain a unique dataset of electromagnetic and hadronic interactions with unprecedented spatial resolution, the DHCAL went through a broad test beam program. In addition to conventional calorimetry, the DHCAL offers detailed measurements of event shapes, rigorous tests of simulation models and various analytical tools to improve calorimetric performance. Here we report on the results from the analysis of DHCAL data and comparisons with the Monte Carlo simulations.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

Funding information

Authors: BILKI, Burak (The University of Iowa (US), Beykent University (TR)); REPOND, Jose Olivier (Argonne National Laboratory (US)); XIA, Lei (Argonne National Laboratory (US)); ONEL, Yasar (University of Iowa (US)); GULER, Yalcin (Cukurova University (TR))

Presenter: BILKI, Burak (The University of Iowa (US), Beykent University (TR))

Session Classification: Experiments: Calorimeters

Track Classification: Experiments: Experiments: Calorimeters