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CALICE DHCAL Results from Fermilab Beam Tests

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The large CALICE Digital Hadron Calorimeter prototype (DHCAL) was built and tested in the Fermilab and CERN test beams between 2009 - 2013. 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. With a world record of nearly 0.5M readout channels, the DHCAL offers the possibility to study hadronic interactions with unprecedented spatial resolution. Here we report on the results from the analysis of pion and positron events of momenta between 2 to 60 GeV/c collected in the Fermilab test beam. Particular emphasis is given to the intricate calibration procedure. The analysis demonstrates the unique utilization of detailed event topologies in the DHCAL.

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