

10th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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Type: Poster

Beam test results of the sPHENIX HCal prototype and Performance Characterization of Scintillator Tiles

Tuesday, June 2, 2020 7:30 AM (1h 20m)

The sPHENIX detector at BNL's Relativistic Heavy Ion Collider (RHIC) will quantify the properties of quark-gluon plasma created in relativistic heavy ions collisions with a focus on the measurements of jets and Upsilon states. A crucial component to the sPHENIX detector design for jet measurements is the hadronic calorimeter (HCal) which is located outside of the solenoid magnet and composed of alternating layers of tapered steel plates and scintillator tiles. sPHENIX has performed four tests of the HCal prototypes at Fermilab since 2015 and pre-production design of the EMCal and HCal in the $\eta \sim 1$ configuration was tested at the Fermilab Test Beam Facility as experiment T-1044 in the spring of 2018. We will present the results of 2018 HCal prototype beam test, the results of sPHENIX-like calorimeter system and corresponding GEANT4 simulations. The energy linearity and resolution of pions and electrons will also be presented.

Collaboration (if applicable)

sPHENIX

Track

New Experimental Developments

Contribution type

Poster

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