

Separation of two electromagnetic or electromagnetic-hadronic showers and properties of hadronic interactions in SiW ECAL

Thursday, 5 October 2017 17:10 (20 minutes)

CALICE collaboration is developing highly granular calorimeters suitable for individual reconstruction of particles in the jets and for Particle Flow Algorithms. Such calorimeters should provide the best jet energy resolution at future high energy $e + e -$ colliders. At high jet energies, typically above 100 GeV, the jet particle showers start to overlap, and the resolution is determined by the ability to separate them. Here, we present the results on the separation of two overlapping electromagnetic or electromagnetic - hadronic showers obtained with CALICE physical prototypes (silicon-tungsten, SiW ECAL and Analog HCAL) and using International Large Detector (ILD) Monte Carlo. We use three available reconstruction programs (Pandora, Garlic and Arbor).

In addition, we report on the study of hadron interactions in CALICE SiW ECAL physical prototype based on a simple algorithm finding tracks of secondary particles. We define several observables to compare data and Monte Carlo, the agreement is always within 20%.

Presenter: SHPAK, Kostiantyn (Centre National de la Recherche Scientifique (FR))

Session Classification: Reconstruction & PFA