



Contribution ID: 172

Type: **Oral presentation (in person)**

Longitudinal structure optimization for the high density electromagnetic calorimeter

Wednesday 10 July 2024 16:00 (20 minutes)

High density electromagnetic sandwich calorimeters with high readout granularity are considered for many future collider and fix-target experiments. Optimization of the calorimeter structure from the point of view of the electromagnetic shower energy, position and direction measurement is one of the key aspects of the design. However, mostly uniform sampling structures were considered so far. We developed a semi-analytical approach to study calorimeter performance based on the detailed Geant 4 simulation, which also allows to compare the expected performance for different non-uniform longitudinal readout structures. This methodology enables us to find out the best calorimeter instrumentation pattern upon a specified usage scenario or optimization goal.

Apply for poster award

Primary author: ZARNECKI, Aleksander Filip (University of Warsaw)

Co-authors: BORYSOV, Oleksandr (Deutsches Elektronen-Synchrotron (DE)); HUANG, Shan (Tel Aviv University - LUXE); ZEMBACZYNSKI, Kamil (Faculty of Physics, University of Warsaw)

Presenter: ZARNECKI, Aleksander Filip (University of Warsaw)

Session Classification: Calorimetry, Muon detectors

Track Classification: Physics and Detector: Calorimetry, Muon