



Contribution ID: 2

Type: Oral

Beam Test of the First Prototype of SiPM-on-Tile Calorimeter Insert for the EIC Using 4 GeV Positrons at Jefferson Laboratory

Tuesday, 7 November 2023 17:15 (15 minutes)

I will present the design and initial test beam results for a high-granularity calorimeter “insert” intended for the EIC. This design leverages SiPM-on-tile technology and introduces innovative features such as the use of 3D-printed frames to minimize optical crosstalk, as well as an ASIC-away-of-SiPM strategy to optimize spatial efficiency and reduce cooling requirements. We built a 40-channel prototype and evaluated it using a 4 GeV positron beam at JLab. The observed energy spectra and shower shapes aligned well with our simulations, thereby validating our design and construction approaches. These findings represent the first application of SiPM-on-tile technology in EIC detectors and offer valuable insights for the development of other subsystems.

These results are presented in <https://arxiv.org/abs/2309.00818>.

Early Career

Yes

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