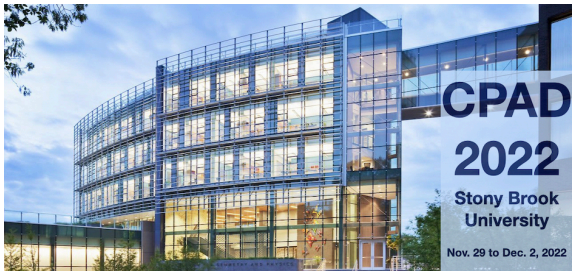

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A high-granularity calorimeter insert based on SiPM-on-tile technology for the EIC

Wednesday, November 30, 2022 9:50 AM (20 minutes)

A high-granularity calorimeter insert based on SiPM-on-tile technology for the EIC

One of the key requirements for EIC detectors is to have tracking and full calorimetry up to η=4.0. The forward region (3<η<4) poses multiple challenges, including those arising from the EIC beam-crossing angle. We present a design for a calorimeter insert (CALI) that is based on the SiPM-on-tile technology. The CALI maximizes the detector acceptance close to the beampipe (3<η<4), while solving challenges arising from the beam crossing angle, and mechanical integration with the rest of the endcap detectors. Simulation studies show that the CALI response is compensated and its resolution exceeds the requirements for EIC detectors even with basic reconstruction algorithms. In this talk, I will present the CALI design and simulated performance (summary of arXiv:2208.05472) and describe recent R&D including measurements of light yield, cross-talk, and time resolution.

Primary author: ARRATIA, Miguel (University of California, Riverside)

Presenter: ARRATIA, Miguel (University of California, Riverside)

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