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Calorimetry for the Electron Ion Collider

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The Electron Ion Collider (EIC) is a new facility that has been proposed in the US to study the structure of nuclear matter in the gluon dominated regime of QCD using Deep Inelastic Scattering (DIS) with precision electromagnetic probes. The EIC will utilize the existing RHIC collider and a new Electron Storage Ring to provide beams of polarized electrons in the energy range from 2.5-18 GeV to collide with hadron beams in the energy range from 40-275 GeV/c. It will require major new detector systems to measure the scattered electron with high precision and full calorimeter, tracking and particle id systems to reconstruct the overall event. This contribution will focus on the various calorimeter technologies that are being developed for the EIC, including the calorimeter systems currently being planned for the first main EIC detector, EPIC, as well as a future second detector. These include both electromagnetic as well as hadronic calorimeter technologies. A wide variety of technologies are being considered for the EMCAL, which include W-powder/SciFi, Pb/SciFi, Pb and W shashlik, PWO crystals, and a new scintillating glass, and a steel/scintillating tile with WLS fiber readout for the HCAL. The current status and future plans for the development of these technologies, as well as their role in the physics measurements at the EIC, will also be discussed.

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