Abstract Submitted
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GEANT4 Implementation of Calorimeters for a Medium-energy Electron Ion Collider[1] JAMES WALKER, University of NC at Chapel Hill — Detector designs for an Electron-Ion Collider (EIC) require detection of the scattered lepton and hadronic debris with high precision as well as all the particles involved in the reaction. GEANT4 simulations will be used in order to optimize the Medium-energy EIC (MEIC) detector design to these requirements. Before simulating detector efficiencies, hadronic and electromagnetic calorimeter models must be incorporated into a full detector geometry. Electromagnetic calorimeter models were constructed as a mixture of lead tungsten and lead glass. Hadronic calorimeter models are still in design. The models are at a low stage of complexity currently, but can be developed further. The models can be used in further research to maximize efficiencies of detector designs and minimize cost.

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