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Verification of Monte-Carlo Simulation for STAR Endcap ElectroMagnetic Calorimeter

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The STAR experiment at Brookhaven National Laboratory seeks to measure the source of the protons spin, a fundamental property of matter. To accomplish this measurement, a simulation method called Monte-Carlo will be used to model the true detector responses to proton-proton collisions. My work is to confirm the accuracy of the Monte-Carlo simulation for the Endcap Electromagnetic Calorimeter (EEMC). By comparing histograms of fundamental parameters from the Monte-Carlo simulated data and true data from 2006 experimentation, we will be able to test the simulations accuracy. When validated, the Monte-Carlo simulation will be used to achieve a greater understanding of the physics occurring during the proton-proton collisions. In particular, Monte-Carlo will help in extracting the gluon contribution to protons spin.

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