Verification of Monte-Carlo Simulation for STAR EEMC

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Spin experiments using the STAR detector at Brookhaven National Laboratory seek to measure the gluon contribution to the proton's spin. The Endcap Electromagnetic Calorimeter (EEMC), a portion of the STAR detector, is used to enhance the clarity and quality of the measurements from proton-proton collisions. These measurements require the EEMC to be well–modeled in the STAR simulation package. This analysis will confront simulations and data from proton-proton collision runs taken in 2006. Comparisons of qualities, such as cluster energy, opening angle, particle invariant masses, and hit distributions will be shown. When validated, the Monte-Carlo simulation will serve STAR physicists as an important tool to help identify and quantify the presence of particles produced in proton-proton collisions, thus aiding the extraction of the gluon contribution to the proton's spin.

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