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Stability of the Tower Gains of the STAR Endcap Calorimeter in 2012 Data[1] CHAMINDU AMARASINGHE, Valparaiso University, STAR COLLABORATION — The Solenoid Tracker at RHIC (STAR) experiment, based at Brookhaven National Laboratory's Relativistic Heavy Ion Collider (RHIC), uses polarized-proton collisions to investigate sea quark and gluon contributions to the proton spin. The STAR detector's Endcap Electromagnetic Calorimeter (EEMC) is of particular interest in this experiment because it covers a kinematic region that is sensitive to gluons carrying a low fraction of the proton momentum, where the gluon's contribution to the spin of the proton is poorly constrained. The EEMC is located in the intermediate pseudorapidity range, $1 < \eta < 2$, and as a lead-scintillator sampling calorimeter, measures the electromagnetic energy of particles produced in the polarized-proton collisions. The calorimeter consists of several layers that include pre-shower, shower maximum, tower, and post-shower detectors. In these detectors, the energy gains, which convert a measured signal into an energy deposition, have been determined using data taken from the year 2012. The sensitivities of the tower energy gains to beam intensity and running time were studied. The results from these sensitivity studies will be reported.

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