Inclusive $\pi^0$ Production in Longitudinally Polarized pp Collisions at $\sqrt{s}=200$ GeV Using the STAR Endcap Electromagnetic Calorimeter

WEIHONG HE, Indiana University, STAR COLLABORATION — Measurement of the double-spin asymmetry $A_{LL}$ for inclusive $\pi^0$ production in polarized pp collisions can provide important constraints on gluonic contributions to the proton’s spin. The STAR Endcap Electromagnetic Calorimeter (EEMC) is well suited for these studies, providing full azimuthal coverage for $1.086 \leq \eta \leq 2$, and with separate readout of two pre- and one post-shower layers, and a fine grain scintillator-based shower maximum detector (SMD) that can distinguish between single photons or electrons, charged hadrons, and neutral mesons ($\pi^0$’s and $\eta$’s) via the observed transverse shower profile. The EEMC also provides fast triggering on significant energy deposition in individual towers, trigger patches, or jet patches ($\Delta\eta \times \Delta\phi \approx 0.007, 0.06, 1$, respectively). Details of the $\pi^0$ reconstruction algorithm employed, and the current status of analysis of the 2006 longitudinally polarized pp data set (sampled luminosity $\approx 3.5$ pb$^{-1}$) will be presented.