Centrality Dependent $dN_{ch}/d\eta$ Measurements for $|\eta| < 4.3$ at RHIC

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Abstract

The multiplicity distributions of the charged particles produced in Au+Au collisions at $\sqrt{s_{NN}} = 130$ A GeV are studied using the centrality detector system at the BRAHMS experiment. These system consists of coaxial Si-strip and plastic scintillator arrays surrounding the nominal interaction region with a pseudo-rapidity coverage of $|\eta| < 2$, two Cherenkov arrays ("Beam-Beam Counters") with a forward region pseudo-rapidity coverage of $3.0 < |\eta| < 4.3$, and Zero-Degree Calorimeters measuring neutrons at the beam rapidity. The deduced charged particle multiplicities ($dN_{ch}/d\eta$) as functions of pseudo-rapidity and reaction centrality will be presented. The results will be compared with theoretical model expectations.

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