Identified charged particle spectra in $p + p$ collisions at $\sqrt{s}$ = 62.4 GeV at RHIC

It is important to study the bulk production of particles as a function of both p_T and particle species. The low-p_T particle production, and species composition provide crucial input for modeling of hadronic interactions and the hadronization process in high-energy collisions [1]. In this paper, we will present the measurements of spectra for $\pi^\pm$, $K^\pm$, p and $\bar{p}$ in $p + p$ collisions at $\sqrt{s}$ = 62.4 GeV from the STAR experiment at the Relativistic Heavy Ion Collider (RHIC). The results are measured at the midrapidity region in the range $\mid y \mid< 0.3$.

Charged hadrons will be identified by using specific ionization energy loss method at the low momentum region (0.15 to 1.15 GeV/c) by using the STAR's Time Projection Chamber (TPC) detector and the raw yields so obtained will be corrected by applying the efficiency and energy-loss correction factors obtained from multistep embedding Monte Carlo technique. In addition to this, the raw proton yield will be corrected for background contamination (arising mainly from the interaction of the produced hadrons with the beam pipe and the detector material), which is estimated from the global DCA (Distance of Closest Approach) distribution of protons [2-3]. The errors included in all the results are statistical. The feed-down corrections are not included in this study.

References

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Track Classification: Hot and Dense Nuclear Matter