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The production of charged particles and the kaonic nuclei K^-p , $K^+\bar{p}$ in pp collisions at $\sqrt{s} = 7$ TeV and K^-pp , $K^+\bar{p}p$ in Au + Au collisions at beam energy 130 GeV

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Abstract. We study the production of charged particles and the kaonic nuclei K^-p , $K^+\bar{p}$ in pp collisions at $\sqrt{s_{NN}} = 7$ TeV and K^-pp , $K^+\bar{p}p$ in Au + Au collisions at beam energy 130 GeV. The PACIAE model is used to calculate the charged particles, and the DCPC model is used to calculate the kaonic nuclei. Results showed that the yield of charged particles was consistent with ALICE and STAR experimental data. The yield per even of K^-p and $K^+\bar{p}$ are calculated to be the order of 10^{-3} . The yield per even of K^-pp was greater than the yield of $K^+\bar{p}p$. The kaonic nuclei K^-pp and $K^+\bar{p}p$ are probably formed by K^+ (or K^-) directly trapping two protons (or antiprotons). Since there are no experimental data available on this observable at present, our work may provide a guide for future experiments.

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