

## RELYATIVISTIK CU+CU TO'QNASHUVLARDAGI PIONLAR, KAONLAR, PROTONLAR VA ANTIPROTONLAR SPEKTRLARINI FITLASH

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### ANNOTATSIYA

BRAHMS kollaboratsiyasi  $\sqrt{s_{NN}}=200$  GeV energiyali relyativistik Cu+Cu to'qnashuvlarda hosil bo'lgan pionlar, kaonlar, protonlar va antiprotonlarning ko'ndalang impuls spektrlarini tezkorlikning  $y=0$  va  $y=3$  bo'lgan qiymatlarida o'lchagan. To'qnashuv markaziyliги oshib borishi bilan zarralar kollektiv radial oqimi ham osha boradi va kinetik friz-aut temperatura kamayadi. Old tezkorlikda radial oqim sust bo'lib, temperatura pastroq. Ko'ndalang impulsning  $1,5 \text{ GeV}/c < p_t < 2,5 \text{ GeV}/c$  intervalida pion va kaonlarning chiqishi shu energiyadagi  $p+p$  to'qnashuvlardagiga nisbatan qiyinlashgan. Mazkur ishda tajribada olingan zarralar spektrlari Levi va eksponensial ko'rinishdagi Boltsman funksiyalari bilan fit qilingan. Pionlar spektrlarini Levi funksiyasi bilan, kaon va protonlar spektrlarini Boltsman tipidagi eksponensial funksiya bilan fitlash yaxshi natijalarga olib kelishi ko'rsatilgan.

**Kalit so'zlar:** pion, kaon, prototon, antiproton, kvark, glyuon, plazma, ko'ndalang impuls, temperatura, eksponensial, markaziylik.

### FITTING THE SPECTRA OF PIONS, KAONS, PROTONS AND ANTIPROTONS IN RELATIVISTIC CU + CU COLLISIONS

#### ABSTRACT

The BRAHMS collaboration investigated the spectra of pions, kaons, protons, and antiprotons in relativistic Cu + Cu at an energy of  $\sqrt{s_{MN}}=200$  GeV/s at the rapidity values  $y=0$  and  $y=3$ . It was found that with an increase in the centrality of collisions, the collective radial flux of particles increases and the freeze-out temperature decreases.

$1.5 \text{ GeV}/c < p_t < 2.5 \text{ GeV}/c$ , the yield of pions and kaons is suppressed than in  $p + p$  collisions at the same energy. In this work, the experimentally obtained particle

spectra are fitted by the Levy function and the exponential function of the Boltzmann type. It is shown that the fitted spectra of pions by the Levy function and the spectra of kaons and protons with an exponential function describe the experimental data well.

**Keywords:** pion, kaon, proton, antiproton, quark, gluon, plasma, transversalmomenrum, temperature, exponential, centrality.