

Some Important Features of Relativistic Charged Particles Produced in ^{32}S -Emulsion Interactions at 200 AGeV/c

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Abstract

An attempt has been made to study the multiplicity, angular and pseudo rapidity distributions of relativistic charged particles emerging from the interactions between sulphur and nuclear emulsion nuclei at 200 GeV/nucleon. The distributions from 200 AGeV are compared to the corresponding distributions from the predictions of Monte Carlo code FRITIOF samples. The pseudo rapidity distributions in different N_h -intervals translate to the target fragmentation region with increasing target mass. Finally, the scaling of multiplicity distributions of shower particles successfully describes the consequences of KNO scaling.

Keywords

Nucleus-Nucleus Collisions, Multiplicity Distribution, Multiplicity Correlations, KNO Scaling, FRITIOF Model

1. Introduction

The advent of heavy ion beams at the CERN Super-proton Synchrotron (SPS) has opened a new field of ultrarelativistic heavy-ion collisions for systematic studies about the mechanism of particle production. The availability of heavy-ion beams at high energies has given an opportunity to detect the existence of new phase of hadronic matter, namely the Quark-Gluon-Plasma (QGP) [1] [2] in laboratory. It is important to achieve complete information regarding the mechanism of particle production in nucleus-nucleus collisions. When an energetic projectile collides with targets of nuclear emulsion, a number of charged and uncharged particles are produced. The

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