Contribution ID: **154** Type: **Poster**

QUARK-GLUON STRING MODEL (QGSM) AND ITS APPLICATION FOR INELASTIC DC INTERACTIONS AT A MOMENTUM OF 4.2 A GEV/S

Wednesday, 13 July 2022 10:00 (20 minutes)

QUARK-GLUON STRING MODEL (QGSM) AND ITS APPLICATION FOR INELASTIC DC INTERACTIONS AT A MOMENTUM OF 4.2 A GEV/S

R. Bekmirzaev1, M.U.Sultanov2, S. Yuldashev3

1State Pedagogical Institutes, 130100, Jizzakh, Uzbekistan
bekmirzaev@mail.ru
2State Architecture and Civil Engineering Institute, Samarkand, Uzbekistan
3Samarkand State University, Samarkand, Uzbekistan

The construction of high-energy accelerators for hadrons and the creation of detectors that record reaction products are very costly. At the same time, there is a need to compare the experimental conditions and large-scale experimental data with the results of theoretical calculations. As a result, a large number of software generators for the collisions of hadrons and nuclei of different energies have emerged. These programs are based on a standard model (various phenomenological models) of strong and non-electric interactions. Of these, ISAJET and Lund University programs, including PYTHIA and FRITIOF, are popular. These programs open up almost all areas of transmitted momentum (P2, quarks and from strong scattering of gluons to the formation and decay of hadrons). In this work, the main provisions of the Quark-gluon string model for describing inelastic interactions of light nuclei at high energies are presented. The main ideas of the CGSM model are given, such as the process of formation of quark-gluon strings and the choice of their limited number, modeling of string breaking with the formation of hadrons [1]. The data of theoretical calculations by CGSM are compared with the experimental results obtained for dC-inelastic interactions. The technique for obtaining experimental data is briefly described. Analysis and comparison of model and experimental information shows that the CGSM model reproduces well the interactions of light colliding nuclei at energies of 4.2 GeV/s, and it is applicable up to the energy of nuclear interactions of 10 GeV/nucleon [2-3]. Low experimental data on 4π geometry were obtained. Therefore, it is important to study the formation of cumulative particles in large experimental statistics.

Reference
1. Feynman R.P., Field R.D. Nucl.Phys. V.B136, (1978). p.1.
2. Olimov, K. et al. Reports of Uzbek Academy of Sciences 29, 4 , (2011)
3. Olimov, K. et al., International Journal of Modern Physics E, 29, 4 (2020).

The speaker is a student or young scientist

No

Section

1. Intermediate and high energies, heavy ion collisions

Primary author: BEKMIRZAEV, raxmatillo (nurmurodovich)

Presenter: BEKMIRZAEV, raxmatillo (nurmurodovich)

Session Classification: Poster session