

HE Stratosphere Event of 1975 Revisited: New Physycs in Astroparticle Collision vs. LHC Nucleus-Nucleus Data

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The event of astroparticle collision at high energy was detected in 1975 during the balloon flight in the stratosphere. The hundred particle tracks in x-ray films have been re-analyzed in the style of LHC experiments: rapidity distributions of charged particles and transverse mass spectra of multiparticle production have been built. The comparison of rapidity-and-transverse-mass histograms with the knowledge accumulated in the Quark-Gluon String Model gives us the conclusion that it was the carbon nucleus collision with the matter of atmosphere at the c.m.s. equivalent energy $\sqrt{s} = 5$ TeV. After QGSM analysis of scarce data, we know the following: 1) the value of maximal rapidity of one projectile proton and 2) the density of particle multiplicity in the central rapidity region. In such a way, we can practically distinguish how the astroparticle interaction is similar to or differs from the average A-A collision event at LHC. The data include some features of new physics, as an example, it may be baryonic DM particle collision. Previously, the suggestion was done that baryonic Dark Matter cannot be reproduced in accelerators. It appears in the space at a huge mass densities near the giant objects like Black Holes. Finally, we conclude that the cosmic ray experiments on the high altitude in the atmosphere are, on one hand, good supplements to the LHC measurements. On the other hand, they are able to observe events of new astroparticle collisions in the full kinematical region.

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