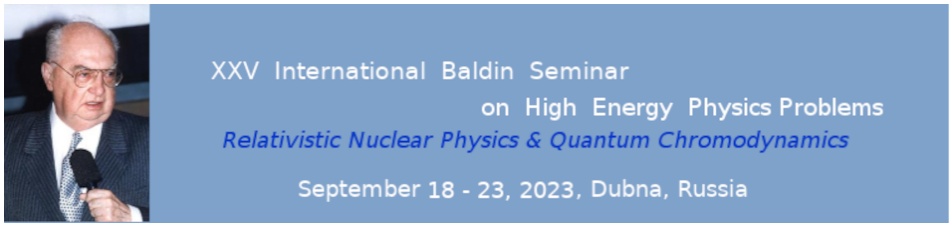

Contribution ID: **82** Type: **not specified**

Reconstruction of the characteristics of a high-energy event detected by the Carpet-2 array in association with the GRB 221009A gamma-ray burst

Tuesday, 19 September 2023 15:00 (20 minutes)

The Carpet-2 collaboration reports on the observation and analysis of an event with a low muon content coincident with the gamma-ray burst GRB 221009A and the transient Swift J1913.1+1946. This bright transient was observed by numerous instruments in the optical, X-ray and gamma-ray energy ranges. The redshift of this GRB is z=0.1505 (measured from afterglow observations).
The Carpet-2 array detected an extensive air shower at 14:32:35 UT (1338 s after the SWIFT trigger and 4536 s after the GBM trigger) with the reconstructed arrival direction (RA=289.51°, Dec=18.44°) , which is 1.78° from the direction towards GRB 221009A, well within the angular resolution of Carpet-2 (\approx 4.7°). This event produced zero hits in the 175 m^{2} muon detector of the Carpet-2 array. The reconstructed energy of the primary particle is in the range of 200-250 TeV. We estimate of the probability of the type of particle (photon or proton), its energy and detection efficiency.

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