30th International Cosmic Ray Conference

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REMARKABLE EVENTS FROM XREC AND MULTIPLE PRODUCTION AT LHC ENERGY

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Abstract content

The CORSIKA programme and specific Monte Carlo collision generators are employed in the interpretation of X-ray emulsion chambers data on super gamma ray families at mountain altitude (Chacaltaya, Kanbala, Pamir...) and in the stratosphere (Concorde, balloons). The consequences of measurement conditions(energy thresholds levels...) are detailed to extract common features for the neutral and charged secondaries. The vertex is approached by invariant mass method, geometry, pseudo rapidity distributions , and factors. Sorting the gamma's coupled in the maximum of invariant histograms, we evaluate the multiplicity , , inelasticity behavior up to LHC energy.
Attention is given to the penetration power of EAS which levels off one energy decade around the knee and observations related with the fragmentation region (high energy hadron and gamma spectra in EAS, intensity of families with halo's). Hints of new physics are considered around the intriguing alignments registrated in the energy band between colliders and LHC. Several events (stratosphere and mountain) exhibit coplanar emission at similar visible energy, suggesting the valence diquark breaking. Such violent breaking suppressing the leading cluster recombination might come from the rupture of the string under very high tension between the two partners of the diquark.

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Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 4 (HE part 1), pages 651-654

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