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Measurements of absolute muon intensity at zenith angles from 20 to 90 degrees

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Abstract content

High-statistics data collected with Russian-Italian coordinate detector DECOR are analyzed. Precise measurements of muon angular distributions in zenith angle interval from 20 to 90 degrees have been performed. In total, more than 160 million muons are selected. Dependences of the absolute integral muon intensity on zenith angle for several threshold energies ranging from 1.7 GeV up to 7 GeV are derived. Measurements for all thresholds are made simultaneously with a single setup, that minimizes systematic uncertainties. The dependence of integral intensity on zenith angle and threshold energy is well fitted by a simple analytical formula. Comparison with data of other experiments at close angular and threshold energy values shows a reasonable agreement.

If this papers is presented for a collaboration, please specify the collaboration

DECOR Collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olive, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 1205-1208

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