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Electric Storm Effects on the soft and hard cosmic ray components observed in Mexico City

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Abstract content

The effects of electric thunderstorms on the electromagnetic and muon components of the cosmic ray secondary flux were studied during severe storms in 2004 and part of 2005 analyzing the variations of the counting rates shown in the upper and lower scintillators of the muon telescope installed in Mexico City. Results show that for positive configurations of the electric field soft component particles show an increase of flux that can be interpreted as particle acceleration. For the hard component the inverse effect is observed, that is a decrease in the counting rates for positive electric field storms. These results are in agreement with those obtained by Khaerdinov et al (1 and 2). (1) Khaerdinov N.S., Lidvansky A.S., Petkov V.B., and Surovetsky Yu P. 2003, Effect of Disturbed Electric Field of the Atmosphere on Cosmic Rays: 1. Soft Component, Proc. 28th ICRC, pp. 4169-4172. (2) Khaerdinov N.S., Lidvansky A.S., Petkov V.B. 2003, Effect of Disturbed Electric Field of the Atmosphere on Cosmic Rays: 2. Hard Component, Proc. 28th ICRC, pp. 4173-4176.

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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. 1 (SH), pages 781-784

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