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Observation of the Seasonal Variation in Underground Muon Intensity

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Abstract content

The 5.4 kT MINOS Far Detector (Fardet) has accumulated 45 million cosmic-ray induced muon tracks at a depth of 2100 mwe since it began operation in 2003. An analysis of the muon intensity over the time of detector running has revealed periodic fluctuations, which are correlated with temperature fluctuations in the upper atmosphere. This agrees with the theoretical expectation for muons induced by pion parents, the predominant mode of muon production for the energies seen at the depth of the Fardet.

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

MINOS

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. 5 (HE part 2), pages 1233-1236

Primary author(s) : GRASHORN, Eric (University of Minnesota)

Presenter(s) : GRASHORN, Eric (University of Minnesota)

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