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Investigation of backgrounds for horizontal neutrino showers at ultra-high energy

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Abstract content

A possible signature of a neutrino-induced air shower is a near-horizontal event developing very deeply in the atmosphere at depths exceeding a few thousand g/cmˆ2. Making use of high-statistics shower libraries we study the background to such events from: (1) high-energy muons produced in primary proton events, which may propagate deeply into the atmosphere before initiating a subcascade; (2) primary photons, which may start to cascade late due to a suppression of the Bethe-Heitler cross-section by the LPM effect. The rates of background events are compared with various flux models of ultra-high energy neutrino production.

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

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 1483-1486

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