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Selection and reconstruction of very inclined air showers with the Surface Detector of the Pierre Auger Observatory

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Abstract content

The water Cherenkov tanks of the Pierre Auger Observatory can detect particles at all zenith angles and are therefore well suited for the study of inclined and horizontal air showers ($60° <$ theta $< 90°$). Such showers are characterised by a dominance of the muonic component at ground, and by a very elongated and asymmetrical footprint which can even exhibit a lobular structure due to the bending action of the geomagnetic field. Dedicated algorithms for the selection and reconstruction of such events, as well as the corresponding acceptance calculation, have been set up on basis of muon maps obtained from shower simulations.

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

The Pierre Auger 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. 4 (HE part 1), pages 323-326

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