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Measurement of the UHECR spectrum above 10ˆ{19} eV at the Pierre Auger Observatory using showers with zenith angles greater than 60 degrees

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Abstract content

We report on the cosmic ray spectrum obtained using the inclined events detected with the Pierre Auger Observatory. Showers with zenith angles between 60° and 80° recorded in the period between January 1st, 2004 and December 31st, 2006 are analysed. Showers are first reconstructed in arrival direction and then fitted to density maps of the muon numbers obtained from 10^{19}eV simulated proton showers for different arrival directions, to obtain the core position and an overall normalisation factor N_{19} which is used as an energy estimator. The parameter N_{19} is shown to be correlated with the shower energy measured with the fluorescence technique for a sub-sample of good quality hybrid showers. The correlation obtained between N_{19} and energy is used to measure the energy of all the showers.

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 339-342

Primary author(s) : THE PIERRE AUGER COLLABORATION, - (The Pierre Auger Observatory); Mrs. FACAL, Pedro (Universidad de Santiago de Compostela)

Presenter(s) : Mrs. FACAL, Pedro (Universidad de Santiago de Compostela)

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