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On the status of the dip in UHECR spectrum

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Abstract content

Similar to the GZK cutoff, the dip is a signature of UHE proton interaction with Cosmic Microwave Radiation (CMB). It is produced due electron-positron production in collisions of protons with CMB photons. The dip is located in energy range 1 - 40 EeV. It is demonstrated that the dip is very well confirmed by the data of AGASA, Fly's Eye, Hires and Yakutsk detectors. Since the energy position of the dip is model-independent it can be used for energy calibration of the detectors. After this energy calibration the absolute fluxes, measured by all detectors, coincide well. Based on the dip and energy-calibrated data of all detectors, the prediction for the Auger measured spectrum and absolute flux is made for energy interval 1 - 70 EeV, which includes beginning of the GZK cutoff.

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. 4 (HE part 1), pages 507-510

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