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Horizons and Anisotropies of Ultra-High Energy Cosmic Rays

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Abstract content

We study the propagation of cosmic rays at the highest energies of different compositions and discuss the implications for anisotropy studies of future UHECR observatories. The evolution of the horizon of cosmic rays as a function of the energy is mass dependent: low and intermediate mass nuclei can only originate from very nearby sources above a few 10ˆ19 eV and the composition above 4.10ˆ19 eV should be mainly protons with a small iron fraction. We show the expected sky anisotropies between 10ˆ19 and 10ˆ20.5 eV for exposures from 10ˆ4 to 10ˆ6 kmˆ2 sr yr.

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 527-530

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