
EXECUTIVE SUMMARY

THE CONTRIBUTION OF DISTANT SOURCES TO THE OBSERVED FLUX OF ULTRA HIGH-ENERGY COSMIC RAYS

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This poster considers the importance of contributions from distant populations of sources to the ultra high-energy (UHE) flux of cosmic rays (CRs) observed on Earth. We calculate the cosmological propagation of UHE CR nuclei, accounting for their attenuation in ambient radiation fields, and model the UHE CR flux arriving at $z=0$. We find that, despite their very strong attenuation in the cosmological background radiation fields, most of the UHE CRs arriving on Earth originate in very distant sources. A consequence of this is the natural emergence of a strong background component in the UHE CR flux observed on Earth, which is comprised of the strongly attenuated residual flux from a large population of accelerators located at cosmological distances.