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Neutrino and Gamma Ray Flux Expectations from HiRes Monocular Fits

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Abstract content

A simple model of a homogeneous population of cosmic accelerators injecting protons following a unique power law has long been shown to fit the HiRes monocular data very well. The model evolves the sources with redshift and adjusts both the redshift evolution and the exponent in the injecting power law to fit the data. At lower energies galactic iron is added in as suggested by composition measurements. The model includes interactions between cosmic ray protons of extragalactic origin and photons of the cosmic microwave background radiation; in particular photopion production, which causes the GZK cutoff. We present neutrino and gamma ray fluxes derived from proton propagation given the fitted injection spectrum and redshift evolution of their extragalactic sources.

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

HiRes 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 551-554

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