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Constraints on top-down models for the origin of UHECRs from the Pierre Auger Observatory data

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Abstract content

In the context of the report by the AGASA experiment of an apparent excess in the cosmic ray flux above the energy of the expected GZK feature, a variety of “top-down models” have been proposed for the origin of ultra-high-energy cosmic rays (UHECRs). These models involve the decay of supermassive particles and generically predict high neutrino and photon fluxes at ultra-high energy. Relying on the corresponding flux limits and overall spectrum normalisation obtained by the Pierre Auger Observatory, we set constraints on a wide class of top-down models and their contribution to the UHECR flux.

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 433-436

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