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A conservative dark matter annihilation bound from the diffuse gamma ray flux

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Abstract content

We discuss the general observational upper limits on the total annihilation rate of dark matter derived from the diffuse gamma ray background measured by the EGRET satellitr. We assume that the dark matter annihilates at tree level in the least detectable final states in the Standard Model, namely neutrinos. Any other decay channel would lead to stronger constraints. Electroweak jet cascading imply that, for masses above ˜100 GeV, interesting bounds apply which are much more stringent than well-known general bounds as the unitarity one and comparable or only a few times weaker than the bounds recently derived from atmospheric neutrino data. We briefly discuss the perspectives of improvement of these constraints on the light of forthcoming GLAST stellite data.

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 701-704

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