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Constraints on the Galactic Halo Dark Matter from Fermi-LAT Diffuse Measurements

Wednesday, 22 May 2013 14:00 (20 minutes)

I will discuss constraints on dark matter annihilating or decaying in the Milky Way Halo from observations of the diffuse gamma-ray emission with the Fermi Large Area Telescope.

A novel approach is developed to take into account the astrophysical foregrounds, with the use of the GALPROP code to model the foreground astrophysical diffuse emission and a profile likelihood formalism to marginalize over the model uncertainties.

We find that the resulting limits impact the range of particle masses over which dark matter thermal production in the early Universe is possible, and challenge the interpretation of the PAMELA/Fermi-LAT cosmic ray anomalies as annihilation of dark matter.

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