Workshop on Indirect Dark Matter Searches



Contribution ID: 50 Type: not specified

On the Relevance of Sharp Gamma-Ray Features for Indirect Dark Matter Searches

Thursday 16 June 2011 15:15 (12 minutes)

Gamma rays from the annihilation of dark matter particles in the Galactic halo provide a particularly promising means of indirectly detecting dark matter. Here, we demonstrate that pronounced spectral features near the kinematic cutoff at the dark matter particles' mass, which is a generic prediction for most models, can significantly improve the sensitivity of gamma-ray telescopes to dark matter signals. We derive projected limits on such features (including the traditionally looked-for line signals) and show that these can be very efficient in constraining the nature of dark matter.

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