

Dark Matter Annihilation in the Gamma-Ray Sky

If the dark matter is made up of WIMPs, then such particles are expected to annihilate, generating a potentially observable flux of gamma-rays, cosmic rays, and neutrinos. Experiments such as the Fermi Gamma-Ray Space Telescope are designed to search for such annihilation products, and are sensitive to many well motivated dark matter models.

I will discuss and review a number of ongoing searches for dark matter using data from Fermi, including searches for gamma-rays from dwarf galaxies, subhalos, galaxy clusters, and the Galactic Center. The central region of the Milky Way is particularly exciting in this context, exhibiting a gamma-ray spectrum and morphology that is consistent with expectations from annihilating dark matter, and difficult to account for with known astrophysical sources or mechanisms.

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