

U22a

Gamma-ray background anisotropy from dark matter annihilation

Shin'ichiro Ando (Amsterdam), Eiichiro Komatsu (MPA)

For promising candidates of dark matter, self-annihilation happens in dense regions of structure such as galaxies and clusters of galaxies, and yields observable signatures such as gamma rays. Since the annihilation rate scales as density squared, it will imprint a characteristic patterns on the gamma-ray sky, in addition to a characteristic shape of the energy spectrum.

Recently, Fermi-LAT measured excess of the angular power spectrum of the diffuse gamma-ray background, compared with expected value from the discreteness of the photon count. So far, the level of such anisotropies is consistent with point sources, especially blazars, but one could use this as a constraint on dark matter properties.

I will present the result of latest theoretical modeling of the gamma-ray background anisotropy from dark matter annihilation, and by using it, show constraints on dark matter annihilation cross section from Fermi-LAT.