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Indirect detection of dark matter annihilation using gamma-ray data of Fermi-LAT

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Dark matter (DM) plays an important role in modern high-energy physics and indirect signals can provide evidence of DM interactions with Standard model (SM) particles. Among various of SM channels, gamma-rays are one of the most prominent channel because they head directly to the Earth unlike other charged cosmic-ray particles. Using gamma-ray data of Fermi-LAT, a space telescope that is cable of gamma-rays from 0.1 GeV to above 500 GeV. In this talk, we will discuss about analysis of Galactic Center Excess (GCE) which is known to be well explained by DM annihilation, and strong bounds on $\langle \sigma v \rangle$ from dwarf spheroidal galaxies (dSphs). And combining the results, we will investigate possibility of hadronic/leptonic annihilation channel of DM into SM.

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