



Contribution ID : 31

Type : Talk

Dark Matter search in dwarf irregular galaxies with Fermi -LAT

In these talk we highlight the main results about dark matter (DM) search in dwarf irregular galaxies with the Fermi Large Area Telescope. We analyze 11 years of Fermi-LAT data corresponding to the sky regions of 7 dwarf irregular (dIrr) galaxies. DIrrs are DM dominated systems, recently proposed as interesting targets for the indirect search of DM with gamma-rays. We create a spatial template of the expected DM-induced gamma-ray signal with the CLUMPY code, to be used in the analysis of Fermi-LAT data. No significant emission is detected from any of the targets in our sample. Thus, we compute the upper limits on the DM annihilation cross-section versus mass parameter space. The strongest constraints are obtained for $\chi\chi$ and are at the level of $\langle\sigma v\rangle \sim 7 \times 10^{-26} \text{cm}^3 \text{s}^{-1}$ at $m_\chi \sim 6 \text{ GeV}$.

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