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## DMMW: A tool for multi-wavelength dark matter searches

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The level of emission expected from Dark Matter annihilation at radio frequencies, UV and at X-ray frequencies is comparable, and thus complementary, to searches in gamma rays with Fermi-LAT.

However, unlike the prompt gamma-ray emission, the secondary inverse Compton, bremsstrahlung and synchrotron emission from leptons depends on the transport setup and the astrophysical properties of the object under consideration. At the same time Cosmic Ray electrons and positrons, as well as protons form a background which is subject to the same transport model uncertainties.

Here we present first results from DMMW (Dark Matter Multi-Wavelength), a tool which is capable of simultaneously fitting the multi-wavelength emission spectrum of a given object for generic Dark Matter models, density distributions and Cosmic Ray transport setups. DMMW allows the user to make reliable predictions about the radio, UV, X-ray and soft gamma-ray emission associated with the relativistic electrons and positrons produced in Dark Matter annihilation, as well as the relativistic electrons, positrons and protons produced in Cosmic Ray sources and Cosmic Ray interactions with the gas. The stable charged annihilation products are propagated in the same framework as the Cosmic Rays, thus allowing the user to probe different transport setups and self-consistently constrain a possible signal from Dark Matter Annihilation from radio to soft gamma-rays.

We present results obtained with DMMW for a variety of astrophysical systems, such as dwarf galaxies in the Milky Way's halo, neighboring galaxies and clusters.

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