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Search for dark matter with IACTs and the Cherenkov Telescope Array

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In the last decades an incredible amount of evidence for the existence of dark matter has been accumulating. At the same time, many efforts have been undertaken to try to identify what dark matter is. Indirect searches look at places in the Universe where dark matter is known to be abundant and seek for possible annihilation or decay signatures. Indirect searches with the Fermi Gamma-ray Space Telescope and Imaging Atmospheric Cherenkov Telescopes (IACTs) are playing a crucial role in constraining the nature of the DM particle through the study of their annihilation into gamma rays from different astrophysical structures. In this talk I will review the status of the search with IACTs and I will describe the sensitivity projections for dark matter searches on the various targets taking into account the latest instrument response functions expected for the Cherenkov Telescope Array (CTA) together with estimations for the systematic uncertainties from diffuse astrophysical and cosmic-ray backgrounds.

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