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Search for annihilating Dark Matter towards dwarf galaxies by the Cherenkov Telescope Array

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The standard model of cosmology indicates that approximately 27% of the energy density of the universe is in the form of dark matter. The nature of dark matter is an open question in modern physics. The concordance cosmological model (Λ CDM) suggests a non-baryonic dark matter compatible with a gas of cold and weakly interacting massive particles (WIMPs). Indirect dark matter searches with imaging atmospheric Cherenkov telescopes (IACTs) are playing a crucial role in constraining the nature of the dark matter particle through the study of their potential annihilation to produce very high energy (VHE) gamma rays from different astrophysical structures. The Cherenkov Telescope Array (CTA) will provide a good sensitivity over a range of dark matter mass from ~ 100 GeV to ~ 30 TeV. In this contribution we review the status of the study of indirect dark matter searches from the dwarf spheroidal galaxies that provide straight-forward separation of signal from dark matter from that of other astronomical sources of gamma rays.

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