

Searching for Dark Matter annihilation with a combined analysis of dwarf spheroidal galaxies data from Fermi-LAT, HAWC, H.E.S.S., MAGIC and VERITAS

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Dwarf spheroidal galaxies (dSphs) are among the most dark matter (DM) dominated objects with negligible expected astrophysical gamma-ray emission. This makes nearby dSphs ideal targets for indirect searches for a DM particle signal. The accurate knowledge of their DM content makes it possible to derive robust constraints on the velocity-weighted cross section of DM self-annihilation. In the past years, separate limits have been produced by the Fermi-LAT, HAWC, H.E.S.S., MAGIC, and VERITAS collaborations. We will report on an initiative aiming at combining data from these five experiments in order to maximize the sensitivity of DM searches towards dSphs, using a common maximum likelihood approach. This approach includes a uniform description of the DM content, quantified through the J-factor, and its statistical uncertainty. Preliminary results of the combination constraining the DM annihilation cross section will be presented spanning a range of DM masses from 10 GeV to 100 TeV.

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