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Search for gamma-ray line signatures with H.E.S.S.

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Most of results from astrophysical observations point to a 27% contribution of non-baryonic dark matter to the mass-energy budget of the universe. Although still undetermined, strongly motivated candidates in form of weakly interactive massive particles could explain its nature and their annihilations or decays would give rise to detectable signatures in gamma rays. In 2012, the H.E.S.S. collaboration started data taking with the largest imaging atmospheric Cherenkov telescope in the world, significantly lowering the energy threshold of the experiment. In particular, due to its location and enhanced performances at low energies, the H.E.S.S. experiment is now in a position to extend the search for line dark matter signals down to a 100 GeV mass range. The sensitivity to line searches with a new full likelihood approach will be discussed and preliminary results from observations with the second phase of H.E.S.S. will be presented.

Collaboration

H.E.S.S.

Registration number following "ICRC2015-I"

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