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Dark matter searches with IceCube

Content :

The nature of dark matter remains one of the most enduring unsolved questions in modern cosmology. In order to decipher the mystery of dark matter and understand its properties different experimental avenues are explored. Indirect searches make use of the annihilation or decay products of dark matter as traces to prove its existence.

This strategy is complementary of direct detection as different regions of the astrophysical parameter space are tested. Also, unlike direct detection experiments, indirect searches don't require specialized experiments and existing astro-particle facilities can be used to search for signatures of dark matter. Among the decay and annihilation products, neutrinos offer a unique way to search for dark matter since their low cross-section makes them capable of escaping from environments in which gamma-rays are absorbed, like for example the Sun or the Earth. The IceCube neutrino telescope is not only an excellent astro-particle detector, it also has a lively program on dark matter searches with very competitive and complementary results to direct detection limits. In this talk, I will review the latest results of IceCube regarding the indirect search of dark matter with neutrinos.

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