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Limits for Dark Matter annihilation in the Sun with ANTARES neutrino telescope

One of the most popular candidate of Dark Matter (DM) particle are the Weakly Interacting Massive Particles (WIMPs). These, once gravitationally captured in massive celestial objects and annihilating between them into Standard Model particles, can be indirectly detected. The centre of those massive objects is, therefore, a place where to look for a possible neutrino excess from DM annihilations using neutrino telescopes. The closest of such potential astrophysical DM sources is the Sun.
The ANTARES deep-sea neutrino telescope, located in the Mediterranean Sea, best
performs in indirect searches for neutrino signals from DM annihilation in the 100 GeV to 1 TeV energy range. In this work the results from the search for WIMPs towards the Sun direction, using 13 years of data collected by ANTARES telescope are presented.
Upper limits on the WIMP –nucleon cross section are obtained for DM mass in the range from 50 GeV/c^2 to 3 TeV/c^2 , improving the results of the last ANTARES publication by more than a factor of two.

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