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## Constraining Secluded Dark Matter models with the ANTARES neutrino telescope

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In this work we describe the search for Secluded Dark Matter (SDM) annihilation from the Sun with ANTARES. SDM is a special scenario where DM, which would gravitationally accumulate in astrophysical objects like the Sun, is annihilated into a pair of non-Standard Model mediators, which subsequently decay into SM particles. It was suggested to explain some experimental observations, such as the positron-electron ratio observed by satellite detectors. Three different cases are studied: a) direct detection of di-muons from the mediator decay, or neutrino detection from: b) the mediator that decays into di-muons and, in turn, into neutrinos, and c) the mediator that directly decays into neutrinos. The ANTARES results obtained for SDM models –the first experimental limits established directly in neutrino telescopes– are presented. The limits imposed to these models are much more restrictive than those derived in direct detection searches for the case of spin-dependent interaction for a wide range of lifetimes of the meta-stable mediator.

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