

# A search for secluded dark matter in the Sun using the IceCube neutrino telescope

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Secluded dark matter is a model for dark matter in which dark matter particles annihilate into baryonic matter via a metastable mediator. In the case of annihilations in the sun sufficiently long-lived mediator particles can escape the solar plasma before decaying, avoiding the absorption of signal particles. This results in significantly amplified neutrino signals at energies beyond 1 TeV promising a high sensitivity for indirect searches using neutrino telescopes. In this talk the results of a search for secluded dark matter in the sun with the IceCube neutrino observatory will be presented. WIMP masses ranging from 100 GeV to 10 TeV and mediators between 1 ns and 10 s decaying directly into neutrinos are considered. The data taken by IceCube in the in the years from 2011 to 2015 in the 86 string configuration is used in the analysis.

**Primary author:** TÖNNIS, Christoph (SKKU Suwon)

**Presenter:** TÖNNIS, Christoph (SKKU Suwon)

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