

## Dark matter searches with the Super-Kamiokande detector

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Indirect searches for dark matter (DM) were performed based on atmospheric neutrino data collected with the Super-Kamiokande (SK) detector in years 1996-2016. The excess of neutrinos from possible DM sources such as Sun, Earth and Galactic Center, compared to the expected atmospheric neutrino background was searched. All event samples (fully-contained, partially-contained along with upward-going muons), including both electron and muon neutrinos, covering a wide range of neutrino energies (GeV to TeV) were used. Angular distributions and energy spectra as expected for signal and background were taken into account and various DM annihilation channels were considered. Allowed number of DM induced neutrinos which can be contained in SK data so far was estimated. Obtained limits on DM induced neutrino flux are related to limit on spin-dependent (for the Sun) and spin-independent (for the Sun and the Earth's core) WIMP-nucleon cross section and compared against results of direct detection experiments. In case of Galactic Center analysis, the upper limit on the self-annihilation cross-section is derived.

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