
Search for neutrino emission from X-ray and gamma-ray binaries with the ANTARES telescope

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Abstract

ANTARES is currently the largest neutrino telescope operating in the Northern Hemisphere, aiming at the detection of high-energy neutrinos from astrophysical sources. Such observations would provide important clues about the hadronic processes at work in those sources, and possibly help to understand the sources of very high-energy cosmic rays. Neutrino telescopes constantly monitor at least one complete hemisphere of the sky and are thus well-suited to detect neutrinos produced in transient astrophysical sources. The flux of high-energy neutrinos from transient sources is expected to be lower than the one expected from steady sources, but the background originating from interactions of charged cosmic rays in the Earth's atmosphere can be drastically reduced by requiring a directional and temporal coincidence of the astrophysical phenomenon detected by a satellite. Time-dependent neutrino point-source searches have been applied to a list of X-ray and gamma-ray binary systems undergoing high flaring activities in satellite data (Swift, RXTE, MAXI and Fermi) and in IACT data using nine years of ANTARES data. The results of these all-neutrino flavor searches are presented together with the comparison between the neutrino

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