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Transient neutrino emission from the Galactic center studied by ANTARES

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The Galactic center hosts several types of high energy sources that are potential transient neutrino emitters. A time dependent analysis based on the ANTARES data is carried out with the aim of detecting high energy neutrinos temporally connected with bursts in the electromagnetic spectrum of objects located close to the Galactic center.

This approach, more sensitive than a time-integrated analysis, requires neither prior on the burst timing structure nor on the electromagnetic emission. Therefore, it provides an effective way for looking for neutrino emission of astrophysical sources potentially absorbed in X-ray and gamma-rays.

The timing information of ANTARES events in the Galactic center region is also used together with the X-ray light curve of SgrA* and the time information of the IceCube High Energy Starting Events (HESE) in this region, to evaluate possible correlations in time.

Collaboration

ANTARES

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