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Time Variability Test for Candidate Neutrino Sources in IceCube

We propose a time variability test, Taunton, for IceCube that compares data to the expectations of steady signal plus background. This is a test that is anticipated to be used in candidate neutrino sources identified in a time-integrated search. A cumulative distribution function of the time difference between consecutive events is used in a Cramer Von-Mises test. This is the first criterium in IceCube that allows the identification of arbitrary time dependence by rejecting the steady hypothesis. We present sample cases, such as a box flare compared to the steady case.

Mini-abstract

A new time variability test for astrophysical neutrinos in IceCube is proposed.

Experiment/Collaboration

IceCube

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