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The Galactic Contribution to IceCube's Astrophysical Neutrino Flux

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High energy neutrinos have been detected by IceCube, but their origin remains a mystery. Determining the sources of this flux is a crucial first step towards multi-messenger studies. In this work we systematically compare two classes of sources with the data: galactic and extragalactic. We build a likelihood function on an event by event basis including energy, event topology, absorption, and direction information. We present the probability that each high energy event with deposited energy $E_{\rm dep}gt$; 60 TeV in the HESE sample is galactic, extragalactic, or background. The galactic fraction of the astrophysical flux has a best fit value of $0.07^{+0.09}_{-0.06}$ and zero galactic flux is allowed at 1.2σ .

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