

Constraints on the Cosmic Neutrino Background from NGC1068

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We investigate IceCube's ability to constrain the neutrino relic abundance using events from the recently identified neutrino source NGC1068. Since these neutrinos have large energies $\gtrsim 1$ TeV and have propagated through large distances, they make a great probe for overabundances of the cosmic neutrino background.

The propagation of neutrinos from NGC1068 was simulated by solving a transport equation, which takes into account the SM neutrino-neutrino interactions. The final fluxes produced are then analysed using publicly released IceCube data. Our preliminary results indicate that IceCube is able to improve the current bounds on a relic neutrino overabundance by 3 orders of magnitude compared to current experimental bounds, i.e. to less than $\sim 10^9 \text{ cm}^{-3}$ at the 2σ confidence level.

Title of the Poster/Talk

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Related Papers/Preprints

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