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Invisible decays of ultra-high energy neutrinos

Abstract content

Gamma-ray bursts (GRBs) are expected to provide a source of ultra high energy cosmic rays, accompanied with potentially detectable neutrinos at neutrino telescopes. Recently, IceCube has set an upper bound on this neutrino flux well below theoretical expectation. We investigate whether this mismatch between expectation and observation can be due to neutrino decay. We demonstrate the phenomenological consistency and theoretical plausibility of the neutrino decay hypothesis. A potential implication is the observability of majoron-emitting neutrino-less double beta decay.

Summary

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