

Abstract Submitted  
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**Neutrino Interferometry for High-Precision Tests of Lorentz Symmetry with IceCube** ALI KHEIRANDISH, Univ of Wisconsin, Madison, ICECUBE COLLABORATION — Lorentz symmetry is a fundamental symmetry for both the Standard model and General Relativity. However, very small violation of this symmetry is allowed in unifying theories. The IceCube Neutrino Observatory has transformed a cubic kilometer of Antarctic ice into a neutrino telescope and has measured and characterized the atmospheric and astrophysical neutrino fluxes. We have used the observed atmospheric neutrinos in IceCube to search for violation of Lorentz and CPT invariance in the context of Standard Model Extension (SME). As we did not find any evidence of Lorentz violation, we present the best constraints, to date, on the neutrino sector.

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