



## Poster session 2 – Tuesday 5 July

### P2.053 Mind the Gap on IceCube: Cosmic neutrino spectrum and muon anomalous magnetic moment

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Characteristic patterns of cosmic neutrino spectrum reported by the IceCube collaboration and long-standing inconsistency between theory and experiment in muon anomalous magnetic moment are simultaneously explained by an extra leptonic force mediated by a gauge field with a mass of the MeV scale. With different assumptions for redshift distribution of cosmic neutrino sources, diffuse neutrino flux is calculated with the scattering between cosmic neutrino and cosmic neutrino background through the new leptonic force. Our analysis sheds light on a relation among lepton physics at the three different scales, PeV, MeV, and eV, and provides possible clues to the distribution of sources of cosmic neutrino and also to neutrino mass spectrum. This presentation is based on the following papers [1, 2].

- [1] T Araki, F. Kaneko, Y. Konishi, T. Ota, J. Sato and T. Shimomura, Phys. Rev. D 91 (2015) no.3, 037301 [arXiv:1409.4180 [hep-ph]].
- [2] T. Araki, F. Kaneko, T. Ota, J. Sato and T. Shimomura, Phys. Rev. D 93 (2016) no.1, 013014 [arXiv:1508.07471 [hep-ph]].