Phenomenology 2022 Symposium: From Virtual to Real



Contribution ID: 121

Type: not specified

A New Idea for Relic Neutrino Detection

Tuesday 10 May 2022 16:30 (15 minutes)

The detection of the cosmic neutrino background (CvB) is an outstanding problem in particle physics and cosmology. We propose a new way to detect CvB via resonant scattering against cosmogenic GZK neutrinos, which leads to an attenuation of the GZK neutrino flux. However, to have any observable effect, we need significant CvB overdensity along the line-of-sight. This might be feasible in certain astrophysical environments and/or if neutrinos have a large self-interaction.

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