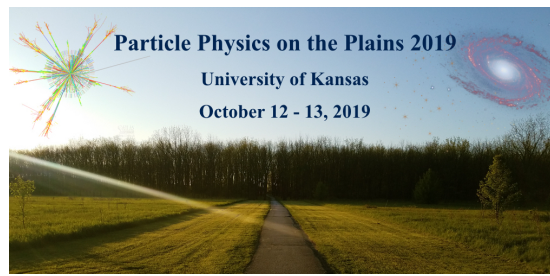


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Zee-Burst: A New Probe of Neutrino Non-Standard Interactions at IceCube

Sunday 13 October 2019 11:50 (20 minutes)

We propose a new way to probe non-standard interactions (NSI) of neutrinos with matter using the ultra-high energy (UHE) neutrino data at current and future neutrino telescopes. We consider the Zee model of radiative neutrino mass generation as a prototype, which allows two charged scalars – one $SU(2)_L$ -doublet and one a singlet, both being leptophilic, to be as light as 100 GeV, thereby inducing potentially observable NSI with electrons. We show that these light charged Zee-scalars could give rise to a Glashow-like resonance feature in the UHE neutrino event spectrum at the IceCube neutrino observatory and can probe a sizable fraction of the allowed NSI parameter space in the near future.

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