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(Cancelled Intived Talk/ For the reference) Detecting the Cosmic Neutrino Background: Expected Rates for the Standard and Beyond Standard Models

Wednesday, 4 July 2018 14:00 (30 minutes)

We will discuss the possibility of observing the Cosmic Neutrino Background (CNB) in the near future by an experiment based on neutrino capture on tritium and what can be learned by measuring the total CNB capture rate. In particular, we will review why such a measurement could differentiate between
Dirac and Majorana neutrinos if only Standard Model interactions are considered. We will also show that the total capture rate can be substantially modified
for Dirac neutrinos if scalar or tensor right-chiral currents, with strength consistent with current experimental bounds, are at play.
We find that the total capture rate for Dirac neutrinos can be made substantially modified, in particular, it can be made as large as what is expected for
Majorana neutrinos with only Standard Model interactions. We briefly discuss the effect of a non-negligible primordial abundance of right-handed neutrinos on our
conclusions.

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