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Particle Physics at LPTHE

Mardi 19 Mars 2024, 14 :00
LPTHE, Library and Zoom (link in the comments)(https ://cern.zoom.us/j/63031219326 ?pwd=STlDY2l0UTZOTWd3Ty8zaWVQSzNTdz09)
Domaines : hep-ph

Titre : *Modern Neutrino Cosmology*

Orateur : **Miguel Escudero (CERN-TH)**

Résumé : *Neutrinos are ubiquitous in cosmology and they always represent a substantial fraction of the energy density of the Universe. This makes cosmology a key arena to test the properties of the most elusive particles in the Standard Model. In this talk, I will begin by first reviewing the various ways in which neutrinos impact cosmological observables. I will discuss the origin of the cosmic neutrino background, and how neutrino physics can alter BBN and the CMB. I will then discuss three topics that I find timely in the context of precision cosmology, namely : 1) what is the value of Neff in the Standard Model and how do we calculate it, 2) what can cosmological observations tell us about BSM neutrino interactions, and 3) how robust are the very stringent cosmological neutrino mass bounds.*