



Contribution ID: 136

Type: **Invited Talk**

Neutrinoless double beta decay in effective field theory

Wednesday, 2 August 2023 11:50 (35 minutes)

Neutrinoless double beta decay (NLDBD) is the most sensitive probe of lepton-number violation. Its discovery would be a clear signal of physics beyond the Standard Model, confirm the Majorana nature of neutrinos, and provide insight into scenarios of baryogenesis through leptogenesis. In this talk, I will show how the calculation of the decay rate can be organized in a systematic way using effective-field-theory techniques. This will allow us to assess the impact of LNV interactions, originating at energies above the electroweak scale, on NLDBD, which takes place at nuclear scales. I will pay particular attention to the matching of the effective LNV interactions onto chiral effective theory, as well as the needed hadronic and nuclear matrix elements. Finally, I will give an overview of the resulting constraints on the sources of LNV.

Primary author: DEKENS, Wouter (Institute for Nuclear Theory)

Presenter: DEKENS, Wouter (Institute for Nuclear Theory)

Session Classification: Wednesday Plenary Session (AudiMax)