Phenomenology 2021 Symposium



Contribution ID: 1199

Type: Neutrinos

The Singly-Charged Scalar Singlet as the Origin of Neutrino Masses

Wednesday 26 May 2021 18:15 (15 minutes)

We consider the generation of neutrino masses via a singly-charged scalar singlet. Under general assumptions we identify two distinct structures for the neutrino mass matrix. This yields a constraint for the antisymmetric Yukawa coupling of the singly-charged scalar singlet to two left-handed lepton doublets, irrespective of how the breaking of lepton-number conservation is achieved. The constraint disfavours large hierarchies among the Yukawa couplings. We study the implications for the phenomenology of lepton-flavour universality, measurements of the *W*-boson mass, flavour violation in the charged-lepton sector and decays of the singly-charged scalar singlet. We also discuss the parameter space that can address the Cabibbo Angle Anomaly.

Summary

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Session Classification: Neutrino III