

31st International Symposium on Lepton Photon Interactions at High Energies



Contribution ID: 104

Type: **Talk**

Phenomenology of low-scale seesaw with flavour and CP symmetries

Wednesday, 19 July 2023 09:00 (15 minutes)

We consider a type-I seesaw framework endowed with a flavour symmetry, belonging to the series of non-abelian groups $\Delta(3n^2)$ and $\Delta(6n^2)$, and a CP symmetry. Breaking these symmetries in a non-trivial way results in the right-handed neutrinos being degenerate in mass up to possible (further symmetry-breaking) splittings, while the neutrino Yukawa coupling matrix encodes the entire flavour structure in the neutrino sector. For a fixed combination of flavour and CP symmetry and residual groups, this matrix contains five real free parameters. Four of them are determined by the light neutrino mass spectrum and by accommodating experimental data on lepton mixing well, while the fifth parameter is related to right-handed neutrinos. We scrutinise for all four types of lepton mixing patterns the potential to generate the baryon asymmetry of the Universe through low-scale leptogenesis numerically and analytically as well as the possibility to directly search for the heavy neutrinos.

Primary author: HAGEDORN, Claudia

Presenter: HAGEDORN, Claudia

Session Classification: BSM

Track Classification: Beyond the Standard Model