

The XXIX International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 2022)



Contribution ID: 29

Type: **not specified**

Grand Unified Origin of Gauge Interactions and Families Replication

Tuesday 28 June 2022 17:20 (20 minutes)

I would like to present an intriguing new perspective into such fundamental questions as 1) the origin of the gauge interactions in the Standard Model (SM), and 2) the origin of the quark, lepton and neutrino families' replication and their fundamental properties experimentally observed in Nature. These questions can be addressed by tying together in a common framework both flavour physics and Grand Unification, which are typically treated on a different footing. Furthermore, I will elaborate on New Physics scenarios that are expected to emerge at phenomenologically relevant energy scales as sub-products of the Trinification-based Flavoured GUT that naturally explain neutrino masses and observed hierarchies in the fermion sectors of the SM as well as the emergence of observed flavour anomalies.

Authors: MORAIS, Antonio (Aveiro university); PASECHNIK, Roman (Lund university); POROD, Werner (University of Würzburg)

Presenter: PASECHNIK, Roman (Lund university)

Session Classification: Flavour physics: Theory and Experiment