Contribution ID: **66** Type: **not specified**

Neutrino Phenomenology from Flavor Deconstruction

Tuesday 27 May 2025 15:00 (20 minutes)

Flavor deconstruction refers to a framework where the three fermion families are charged under non-universal gauge groups. Such Standard Model extensions have been proven to be capable of explaining flavor hierarchies among charged fermions. Recently, it has been shown that also neutrino anarchy can be realized within flavor-deconstructed models exploiting a seesaw mechanism. The present work aims to investigate the phenomenological implications of flavor deconstruction in the leptonic sector. In particular, we show that lepton-flavor-violating processes such as $\mu \longrightarrow e\gamma$, $\mu \longrightarrow eee$ and μ-e conversion in nuclei are among the best probes of our scenario. Despite the large number of UV parameters in a general setup, we identify a limited set of combinations relevant to phenomenology. Specifically, we classify flavor-deconstructed models with neutrino anarchy and determine the minimum new-physics scale, Λ, required for their viability. Notably, for certain models, Λ can be as low as a few TeV.

Authors: SAINAGHI, Andrea (University of Padua and INFN Padua); ISIDORI, Gino (UZH); SELIMOVIĆ, Nudžeim (INFN Padua); PARADISI, Paride (Padova U. and INFN)

Presenter: SAINAGHI, Andrea (University of Padua and INFN Padua)

Session Classification: Neutrinos