



Contribution ID: 1

Type: Talk

Sequentially loop-generated pattern of quark and lepton masses in models with extended symmetries.

Tuesday, 3 December 2019 14:00 (1 hour)

I will discuss two models where SM fermion mass pattern is sequentially loop-generated. The first one is a nonrenormalizable model with minimal particle content, whereas the second one is an extension of the Inert Higgs doublet model (IDM) where the SM hierarchies are generated sequentially by radiative virtual corrections in a fully renormalisable way, i.e. without adding any non-renormalisable Yukawa terms or soft-breaking operators to the scalar potential. In particular, in that extended IDM, due to the presence of both continuous and discrete family symmetries, the top quark acquires a tree-level mass, lighter quarks and leptons get their masses at one- and two-loop order, while neutrino masses are generated at three-loop level. That extended IDM has a potential to explain the recently observed R_K and R_{K^*} anomalies, thanks to the non universal U_{1X} assignments of the fermionic fields that yield non universal Z' couplings to fermions. Furthermore such extended IDM can accommodate the experimental measurements of the muon anomalous magnetic moment and dark matter relic density.

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