Contribution ID: **62** Type: **not specified**

Interplay of New Physics effects in $(g-2)_\ell$ and $h \to \ell^+\ell^-$ in SMEFT

Tuesday 21 September 2021 11:55 (25 minutes)

In this talk we study the correlation of NP effects between two observables, the lepton anomalous magnetic moment and the Higgs to two leptons decay, using one-loop improved SMEFT. Interestingly, only a small subset of five operators is needed to account for these effects and their mixing leads to chirally enhanced diagrams due to top-quarks in the loop. We compare the numerical results of this analysis with the current bounds on the observables and derive limits on the NP scale. Moreover, we build two simple UV extensions, Two Higgs Doublet Model and Scalar LeptoQuark, and show that the tree level matching with the SMEFT operators and the following running provides a good approximation of the full theory results for both observables.

Author: TAMMARO, Michele

Presenter: TAMMARO, Michele

Session Classification: BSM

Track Classification: BSM