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New Physics in Yukawa Couplings with Flavour Symmetries

Thursday 30 June 2022 15:00 (30 minutes)

Colliders and flavour facilities provide complementary information on fermion-Higgs couplings. Within the SMEFT approach, bounds on the new physics scale affecting the Yukawa couplings are obtained assuming the presence of a flavour symmetry. Limits on the diagonal couplings arise from Higgs boson production and decays at the LHC experiments, while bounds on non-diagonal couplings from a variety of FCNC and radiative decay processes. With the present precision of the LHC data, the FCNC data give stronger bounds on the scale of new physics than the collider data (obviously, for the MFV ansatz only collider data are relevant), obtaining bounds in the TeV range. In case of CP violating sources, electron EDM provides the strongest limits.

Author: MERLO, Luca (Universidad Autonoma de Madrid)

Presenter: MERLO, Luca (Universidad Autonoma de Madrid)

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