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Composite Higgs with Flavour Deconstruction

Wednesday 25 September 2024 15:45 (15 minutes)

In this talk, we present a flavour non-universal UV completion of the Standard Model aimed at addressing the Higgs hierarchy problem and the flavour puzzle. In the UV, a flavour non-universal gauge sector is spontaneously broken down by non-perturbative dynamics. The Higgs emerges as a light pseudo-Nambu-Goldstone boson of the broken symmetry, and its potential is radiatively generated by explicit symmetry-breaking terms. We will provide a detailed description of the model and its appealing features in addressing the Higgs hierarchy problem and the flavour puzzle, in particular the positive impact of combining flavour non-universality with Higgs compositeness and a relatively close-by symmetry-breaking scale to the SM. We will also explore the model's rich phenomenology at the TeV scale and the related constraints from EWPOs, flavour observables and Higgs couplings modifications. We stress that our model is compatible with current experimental bounds and can provide TeV scale New Physics that simultaneously stabilizes the Higgs mass and addresses the flavour puzzle while evading the stringent flavour and Electroweak constraints.

Primary authors: Prof. ISIDORI, Gino (University of Zurich); Dr DAVIGHI, Joe (CERN); PESUT, Marko (University of Zürich); COVONE, Sebastiano (University of Zurich)

Presenter: PESUT, Marko (University of Zürich)

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