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Flavour Deconstructing the Composite Higgs

In the first part of the talk, we will introduce the main model building ideas, namely flavour non-universality and Higgs compositeness, that are central to our model, as well as the theoretical and experimental motivations for exploring these BSM avenues. In the second part of the talk, we present a flavour non-universal extension of the Standard Model combined with the idea of Higgs compositeness. At the TeV scale, the electroweak gauge symmetry is assumed to act in a non-universal manner on light- and third-generation fermions, while the Higgs emerges as a pseudo Nambu-Goldstone boson of a spontaneously broken global symmetry. The flavour deconstruction implies that the couplings of the light families to the composite sector are suppressed by powers of a heavy mass scale, explaining the flavour puzzle. We present a detailed analysis of the radiatively generated Higgs potential, showing how this intrinsically-flavoured framework has the ingredients to justify the unavoidable tuning in the Higgs potential necessary to separate electroweak and composite scales. The model is compatible with current experimental bounds and predicts new states at the TeV scale, which are within the reach of near future experimental searches.
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Secondary track

T08 - Higgs Physics

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