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Modified Higgs Physics from Composite Light Flavors

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Nature seems to have chosen a light scalar to unitarize WW scattering. Yet, the Higgs discovery at the LHC does not fully resolve the electroweak symmetry breaking puzzle and one is left to find out what renders the light scalar naturally insensitive to (unknown) very short distance dynamics. New Physics models where the Higgs emerges as a Goldstone boson of some new strong dynamics at the TeV scale provide an appealing solution to this problem, alternate to supersymmetry. In this framework, the large top mass requires that the top quak (and left-handed bottom) is a composite object. There are however no low-energy hint regarding whether the first and second quark generations (and right-handed bottom) are also composite objects or remain elementary states up to very high energies. We argue in this talk that radiative Higgs couplings are relatively sensitive probes to the degree of compositeness of the light quark flavors. We further elaborate on how and to what extend Higgs rate measurements at the LHC can be used to infer the flavor structure of the strong dynamics.

Presenter: DELAUNAY, Cedric

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