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Flavor Hierarchies and Tuning in (Fundamental) Composite Higgs Models

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Composite Higgs (CH) models offers an attractive means to solve the hierarchy problem and at the same time explain the flavour hierarchies observed in nature via the idea of partial compositeness (PC). In this talk, predictions for the fermion spectrum of a minimal UV realisation of PC, considering each Standard-Model (SM) fermion to mix linearly with a bound state consisting of a new scalar and a new fermion, are presented - taking into account the dynamical emergence of the composites. Employing the non-perturbative functional renormalisation group, the scaling of the relevant correlation functions is examined and the resulting SM-fermion masses are analysed. Finally, novel ideas to mitigate the residual tuning in CH models will be presented.

Primary author: GOERTZ, Florian (MPIK)

Presenter: GOERTZ, Florian (MPIK)

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