

Neutral Naturalness Models and Phenomenology

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We build a minimal neutral naturalness model in which the top partners are not charged under QCD, with a pseudo Goldstone Higgs arising from $SO(5)/SO(4)$ breaking. The color-neutral top partners generate the Higgs potential radiatively without quadratic divergence. The misalignment between the electroweak scale and global symmetry breaking scale is naturally obtained from suppression of the Higgs quadratic term, due to cancellation between singlet and doublet top partner contributions. This model can be embedded into ultraviolet holographic setup in composite Higgs framework, which even realizes finite Higgs potential. Furthermore, we will present collider phenomenology of composite twin Higgs models and minimal composite Higgs models, where the SM top quark can be embedded into various representations of the unbroken global symmetry at UV.

Type

Parallel talk

Sessions (parallel only)

Beyond Standard Model

Primary authors: YU, Jiang-Hao (ITP-CAS); XU, Ling-Xiao (Peking University); ZHU, Shou-hua (Peking University)

Presenter: XU, Ling-Xiao (Peking University)

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