

## Common exotic decays of top partners

*Thursday, July 5, 2018 12:15 PM (15 minutes)*

Many Standard Model extensions which address the hierarchy problem contain Dirac-fermion partners of the top quark at the TeV scale. Searches for these vector-like quarks mostly focus on their decay into electroweak gauge bosons and a Standard Model quark.

In this talk we discuss several classes of composite Higgs models with top partners which have underlying descriptions in terms of a fundamental gauge-fermion dynamics. All of these models contain additional BSM states which are likely to be lighter than the top partners, and which thus provide new decay channels for them. We identify the novel top partner decays which occur most commonly, provide effective Lagrangians and benchmarks, and discuss phenomenological bounds and opportunities for future searches.

**Primary authors:** Dr FLACKE, Thomas (IBS CTPU); CACCIAPAGLIA, Giacomo; Dr BIZOT, Nicolas (Univer-site Lyon 1, IPNL,)

**Presenters:** Dr FLACKE, Thomas (IBS CTPU); FLACKE, Thomas (Korea University)

**Session Classification:** Beyond the Standard Model

**Track Classification:** Beyond the Standard Model