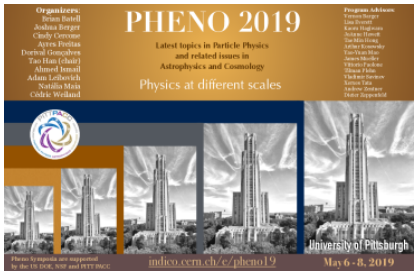

Contribution ID: **709** Type: **parallel talk**

Maverick Top Partners with a Dark U(1)

Monday 6 May 2019 17:45 (15 minutes)

Vector-like top partners are a common feature of composite Higgs and Little Higgs models, where they help with the hierarchy problem. Traditional top partners decay primarily into electroweak channels: th, tZ, and bW. The LHC places lower limits for top partner masses of around 1.1-1.4 TeV from pair production searches, under the assumption of these traditional decay modes. In our model, we introduce a top partner with a dark U(1) charge which, for dark photon masses much smaller than the Z mass, leads generically to a "maverick" top partner with substantial branching ratios to the dark sector channels $t\gamma_d$ and th_2. By largely avoiding the electroweak decay modes, existing top partner searches are much less constraining, and sub-TeV top partners are reopened.

Summary

Authors: KIM, Jeong Han (University of Kansas); Mr LANE, Samuel (University of Kansas); LEE, Hye-Sung (KAIST); LEWIS, Ian (The University of Kansas); SULLIVAN, Matthew (University of Kansas)

Presenter: SULLIVAN, Matthew (University of Kansas)

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