

## Searches for vector-like partners of top and bottom quarks at CMS

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We present new results on searches for massive top and bottom quark partners using proton-proton collision data collected with the CMS detector at the CERN LHC at a center-of-mass energy of 8 TeV. These fourth-generation vector-like quarks are postulated to solve the Hierarchy problem and stabilize the Higgs mass, while escaping constraints on the Higgs cross section measurement. The vector-like quark decays result in a variety of final states, containing boosted top and bottom quarks, gauge and Higgs bosons. We search using several categories of reconstructed objects, from multi-leptonic to fully hadronic final states. We set exclusion limits on both the vector-like quark mass and pair-production cross sections, for combinations of the vector-like quark branching ratios.

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