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Search for vector-like quarks with oppositely-charged dilepton pairs, jets, and missing transverse energy in proton-proton collisions at centre-of-mass energy of 13 TeV

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We Present results of the search for pair produced Vector-like T quark using the proton-proton Collision data collected by the CMS experiment in 2016 with integrated luminosity of 35.9 /fb at a centre-of-mass energy of 13 TeV . Vector-like quarks appear in several extensions of the standard model, and can cancel the diverging loop corrections to the Higgs mass, and thus stabilize it at the electroweak scale. The T quark can decay in to either of three states, bW, tZ or tH. The pair produced T final state consists of two oppositely charged electrons or muons consistent with decay products from Z boson, jets and MET. We set limits on mass of the T quark for various branching ratios.

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