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Volume 2017, Issue 8, 1 August 2017, Article number 29Searches for W' bosons decaying to a top quark and a bottom quark in proton-proton collisions at 13 TeV (Article)The CMS collaboration, Sirunyan, A.M.^a, Tumasyan, A.^a, Adam, W.^b, Ambroggi, F.^b, Asilar, E.^b, Bergauer, T.^b, Brandstetter, J.^b, Brondolin, E.^b, Dragicevic, M.^b, Erö, J.^b, Flechl, M.^b, Friedl, M.^b, Frühwirth, R.^{bgs}, Gheze, V.M.^b, Grossmann, J.^b, Hörmann, N.^b, Hrubec, J.^b, Jeitler, M.^{bgs}, König, A.^b, Krätschmer, I.^b,[View additional authors](#) [v](#)^aYerevan Physics Institute, Yerevan, Armenia^bInstitut für Hochenergiephysik, Wien, Austria^cInstitute for Nuclear Problems, Minsk, Belarus[View additional affiliations](#) [v](#)

Abstract

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Searches are presented for heavy gauge bosons decaying into a top and a bottom quark in data collected by the CMS experiment at $\sqrt{s}=13$ TeV that correspond to an integrated luminosity of 2.2 and 2.6 fb^{-1} in the leptonic and hadronic analyses, respectively. Two final states are analyzed, one containing a single electron, or muon, and missing transverse momentum, and the other containing multiple jets and no electrons or muons. No evidence is found for a right-handed W' boson (W'_R) and the combined analyses exclude at 95% confidence level W'_R with masses below 2.4 TeV if $MW'_R \gg M\nu_R$ (mass of the right-handed neutrino), and below 2.6 TeV if $MW'_R < M\nu_R$. The results provide the most stringent limits for right-handed W' bosons in the top and bottom quark decay channel. [Figure not available: see fulltext.]. © 2017, The Author(s).

Author keywords

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