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Volume 2017, Issue 3, 1 March 2017, Article number 162Search for massive resonances decaying into WW, WZ or ZZ bosons in proton-proton collisions at $\sqrt{s}=13$ TeV (Article)The CMS collaboration, Sirunyan, A.M.^a, Tumasyan, A.^a, Adam, W.^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.^{b, c}, Gheze, V.M.^b, Hartl, C.^b, Hörmann, N.^b, Hrubec, J.^b, Jeitler, M.^{b, c}, König, A.^b, Krätschmer, I.^b, Liko, D.^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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A search is presented for new massive resonances decaying to WW, WZ or ZZ bosons in $\ell\nu q\bar{q}$ and $q\bar{q}q\bar{q}$ final states. Results are based on data corresponding to an integrated luminosity of $2.3\text{-}2.7\text{ fb}^{-1}$ recorded in proton-proton collisions at $\sqrt{s}=13$ TeV with the CMS detector at the LHC. Decays of spin-1 and spin-2 resonances into two vector bosons are sought in the mass range 0.6-4.0 TeV. No significant excess over the standard model background is observed. Combining the results of the $\ell\nu q\bar{q}$ and $q\bar{q}q\bar{q}$ final states, cross section and mass exclusion limits are set for models that predict heavy spin-1 and spin-2 resonances. This is the first search for a narrow-width spin-2 resonance at $\sqrt{s}=13$ TeV. [Figure not available: see fulltext.] © 2017, The Author(s).

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