Measurement of electroweak WZ boson production and search for new physics in WZ plus two jets events in pp collisions at root s=13 TeV

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Abstract

A measurement of WZ electroweak (EW) vector boson scattering is presented. The measurement is performed in the leptonic decay modes WZ -> l nu l'l', where l, l' = e, mu. The analysis is based on a data sample of proton-proton collisions at root s = 13 TeV at the LHC collected with the CMS detector and corresponding to an integrated luminosity of 35.9 fb(-1) . The WZ plus two jet production cross section is measured in fiducial regions with enhanced contributions from EW production and found to be consistent with standard model predictions. The EW WZ production in association with two jets is measured with an observed (expected) significance of 2.2 (2.5) standard deviations. Constraints on charged Higgs boson production and on anomalous quartic gauge couplings in terms of dimension-eight effective field theory operators are also presented. (C) 2019 The Author(s). Published by Elsevier B.V.

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Showing 30 of 79 **View All in Cited References page**