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Measurement of differential cross sections for Z boson pair production in association with jets at root s=8 and 13 TeV

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Abstract

This Letter reports measurements of differential cross sections for the production of two Z bosons in association with jets in proton-proton collisions at root s = 8 and 13 TeV. The analysis is based on data samples collected at the LHC with the CMS detector, corresponding to integrated luminosities of 19.7 and 35.9 fb(-1) at 8 and 13 TeV, respectively. The measurements are performed in the leptonic decay modes ZZ -> l(+)l(-)l'(+)l'(-), where, l, l' = e, mu The differential cross sections as a function of the jet multiplicity, the transverse momentum p(T), and pseudorapidity of the P-T-leading and subleading jets are presented. In addition, the differential cross sections as a function of variables sensitive to the vector boson scattering, such as the invariant mass of the two P-T-leading jets and their pseudorapidity separation, are reported. The results are compared to theoretical predictions and found in good agreement within the theoretical and experimental uncertainties. (C) 2018 The Author(s). Published by Elsevier B.V.

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