MEASUREMENT CROSS SECTION PRODUCTION OF Z BOSON PLUS GAMMA USING DATA IN PROTON-PROTON COLLISIONS AT 13 TEV WITH CMS DETECTOR

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Abstract

The cross section for the production of Z boson plus gamma was measured based on data from proton-proton collisions at the LHC with the CMS detector. The data were collected in 2016 at the center-of-mass energy of 13 TeV with an integrated luminosity of 39.5 fb^{-1}. The measurement was estimated with events having a Z boson decaying to a pair of muons or electrons and a high transverse momentum photon. The fiducial cross sections are measured both inclusively and exclusively. In addition, the differential cross sections in photon transverse momentum, three-body invariant mass and jet multiplicity are presented. The results are in good agreement with predictions at different orders of quantum chromodynamics.

Keywords: LHC, CMS detector, collision, cross section, Zgamma