

Measurement of the photon-fusion production cross section of a pair of W bosons at CMS

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A measurement of the cross section of W boson pair production in photon fusion ($\gamma\gamma \rightarrow WW$) is presented, using an integrated luminosity of 138 fb^{-1} of proton-proton collision data collected in 2016-2018 at a center-of-mass energy of $\sqrt{s} = 13 \text{ TeV}$. Events are selected in the final state with one electron, one muon, and a low multiplicity of tracks associated with the electron-muon production vertex. The total cross section of the $\gamma\gamma \rightarrow WW$ production is measured to be $659^{+82}_{-78} \text{ fb}$, and a fiducial cross section of $4.1 \pm 0.5 \text{ fb}$ is measured in a phase space defined with selection criteria close to those of the analysis. In addition, constraints on dimension-8 operators from an effective field theory framework are set.

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