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Search for anomalous gauge couplings in semi-leptonic decays of WWγ and WZγ in pp collisions at $\sqrt{s}$ = 8 TeV

Thursday, 15 August 2013 09:00 (20 minutes)

A study of the Standard Model (SM) three electroweak boson production, WVγ where V = W or Z gauge boson, is presented concerning events with a leptonically decaying W boson accompanied by a photon and two or more jets. We are using the full 2012 dataset, of proton-proton collisions at a center-of-mass energy of 8 TeV and an integrated luminosity of 20 fb^{-1}, collected by the CMS detector at the Large Hadron Collider (LHC). WVγ production final states may be sensitive to anomalous WW$\gamma\gamma$ and WWZγ quartic couplings. In light of the recent discovery of a Higgs-like particle, we investigate, in a model independent way, any deviation of gauge boson couplings with respect to the SM prediction by setting limits on the anomalous quartic gauge couplings (aQGC) for WW$\gamma\gamma$ and WWZγ. Upper limits at 95\% confidence level are obtained, with and without a form factor.

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