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Search for narrow resonances in dilepton mass spectra in p-p collisions at $\sqrt{s} = 13$ TeV at CMS

Many well established models extending beyond Standard Model (e.g. Grand Unified Theory, Sequential Standard Model or models proposing extra spatial dimension(s)) predict the existence of new heavy neutral bosons that would decay in two leptons. A search for new narrow resonances, generically referred as Z' , in the dimuon decay channel has been performed using data collected by the CMS experiment in 2016 from proton - proton collisions at a center of mass energy of $\sqrt{s} = 13$ TeV corresponding to an integrated luminosity of 36.3 fb^{-1} . In the absence of a significant deviation from the standard model predictions, 95% confidence level limits are set on the ratio of the production cross section times branching fraction for high-mass resonances to that for the Z boson. For several models, lower limits on the resonance mass are derived.

Experimental Collaboration

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