

Search for Z' resonances decaying into tau pair with CMS detector at the LHC

A search for heavy resonances decaying into $\tau^+\tau^-$ has been performed using 4.94 fb^{-1} of proton-proton collision data at 7 TeV recorded by the CMS detector during LHC Run2011. Estimation of major backgrounds has been performed using data-driven methods wherever possible. In the absence of any excess of observed data events over the Standard Model background prediction, an upper limit on the product of the resonance cross-section and branching fraction into τ -lepton pair has been calculated as a function of the resonance mass. Using the Sequential Standard Model resonance Z'_{SSM} and the Superstring inspired E6 Model resonance Z'_ψ as benchmarks, resonances with Standard Model couplings with masses below 1.4 and 1.1 TeV, respectively, are excluded at 95% confidence level.

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