

Search for a Z' boson in the dimuon channel in p-p collisions with the CMS experiment at the Large Hadron Collider. H.KALAKHETY, M.HOHLMANN. Department of Physics and Space Sciences, Florida Institute of Technology, 150 West University Blvd, Melbourne, FL, 32901. Many theoretical models for new physics predict the existence of extremely short lived particles called "resonances". One of these particles, a Z' boson, would be expected to appear as a TeV scale resonance at LHC at CERN, and is of particular interest to us. Z' bosons are expected to couple with electroweak strength to Standard Model fermions and could be observed at the LHC as narrow resonances in the dilepton mass spectrum. We have been searching for such a boson in the dimuon channel at the CMS experiment. We present a search for heavy resonances (Z') decaying to muon pairs using data collected in 2011 with the CMS detector at $\sqrt{s} = 7$ TeV, corresponding to an integrated luminosity of $\sim 4.9 \text{ fb}^{-1}$. We do not observe evidence of any heavy resonances. We therefore set limits at 95% C.L on the cross section times branching ratio of Z' decaying to dimuons as a function of dimuon mass.