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Search for Randall-Sundrum excitations of gravitons decaying into two photons for CMS at LHC VLADIMIR LITVIN, H. NEWMAN, California Institute of Technology, M.-C. LEMAIRE, Saclay, France, CMS COLLABORATION — The CMS detector discovery potential for resonant production of the massive Kaluza - Klein excitations predicted by the Randall- Sundrum model is studied. Full simulation and reconstruction are used to study the diphoton decay of Randall-Sundrum gravitons. For an integrated luminosity of 30 fb^{-1}, the diphoton decay of Randall- Sundrum gravitons can be discovered at the 5σ level for masses up to 1.61 TeV/c^2 for the case of weak coupling between graviton excitations and Standard model particles ($c = 0.01$). Heavier resonances can be detected if the coupling is larger ($c = 0.1$), with a mass reach of 3.95 TeV/c^2.

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