

Abstract Submitted  
for the APR21 Meeting of  
The American Physical Society

**Signals of KK graviton from extended warped extra dimensions at the LHC (II)** DEEPAK SATHYAN, KAUSTUBH AGASHE, MAJID EKHTERACHIAN, University of Maryland, College Park, DOOJIN KIM, Texas AM University — We analyze signals arising from KK gravitons at the LHC. The extended warped extra dimensional model predicts two 4-jet signals produced by KK graviton decay: (1) KK graviton decay to two radions, which each dominantly decay to two (SM gluon) jets, and (2) KK graviton decay to KK gluon and (SM gluon) jet, followed by KK gluon to radion and (SM gluon) jet, followed by radion to two (SM gluon) jets. We analyze two parts of the model’s parameter space at 14 TeV HL-LHC specifications. First, when the KK gluon is heavy, the decay of KK graviton to KK gluon and SM gluon is negligible. Analysis cuts focus on the ”antler” topology of channel (1), imposing two dijet resonances and the 4-jet resonance on the final state jets. Second, when the KK gluon is lighter, the analysis cuts focus on the ”double cascade” topology of channel (2), imposing a dijet resonance nested in a trijet resonance and the 4-jet resonance. For the second part of the analysis, we find the contribution from channel (1) can be important. Multiple benchmark points for each signal are shown with at least  $3\sigma$  significance with an integrated luminosity  $3000 \text{ fb}^{-1}$ .

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Date submitted: 08 Jan 2021

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