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Gravitational Imprints from Heavy Kaluza-Klein Resonances

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We consider Kaluza-Klein (KK) resonances with masses m_{KK} at the multi-TeV scale, out of reach of LHC. The backreaction of the radion field on the gravitational metric is taken into account by using the superpotential formalism. The confinement/deconfinement first order phase transition leads to a gravitational wave stochastic background which mainly depends on the scale m_{KK} and the number of colors, N , in the dual theory. Its power spectrum peaks at a frequency that depends on the amount of tuning required in the electroweak sector. It turns out that the present and forthcoming gravitational wave observatories can probe scenarios where the KK resonances are very heavy.

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