

”Unitarity in Extra-Dimensional Gravity Models”

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Massive spin-2 particles cause trouble in 4D quantum field theory: not only are their tree-level matrix elements sometimes complicated, but some diagrams grow like ten powers of incoming energy! As a result, these theories violate unitarity even at small energy scales. However, massive spin-2 particles naturally appear when projecting nicely-behaved higher-dimensional models down to 4D. If their matrix elements are typically so bad, then how are these full models so nice? The answer is elucidated via gravity on a 5D orbifolded torus, and then extended to a Randall-Sundrum model.

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