Strong unitarity violations in the extra dimensional SM and the equivalence between Goldstone and longitudinal gauge bosons.

J. R. Peláez*
Universidad Complutense
Madrid, Spain
E-mail: jrpelaez@fis.ucm.es

S. De Curtis and D. Dominici
INFN Sezione di Firenze and Dip. di Fisica Univ. degli Studi
Firenze, Italy

Tree level unitarity violations of extra dimensional extensions of the Standard Model become much stronger when the scalar sector is included in the bulk[1]. This effect occurs when the couplings are not suppressed for larger Kaluza-Klein levels, and could have relevant consequences for the phenomenology of the next generation of colliders. We briefly review our formalism to obtain more stringent unitarity bounds when KK modes are present [1] as well as the generalization to extra dimensions of of the Equivalence Theorem between Goldstone and longitudinal gauge bosons [2], as well as its extension to supergravity [3].

*Speaker.
References


and Goldstinos in brane induced supersymmetry breaking,” JHEP 0401 (2004) 052