Scalars 2017

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Extra Higgs bosons and spin-1 heavy vector bosons

Saturday 02 Dec 2017 at 17:30 (00h15')

Content :

We investigate decay modes of spin-1 heavy vector bosons (V') from the viewpoint of perturbative unitarity in a model-independent manner. Our findings are: [1] Br(W'->WZ) is less than 2% in the system that contains V' and CP-even scalars as well as the SM particles. [2] Contributions of CP-odd scalars help to make Br(W'->WZ) larger than Br(W'->ff) as long as the CP-odd scalars couple to both the SM fermions and the SM gauge bosons.

The existence of the CP-odd scalar couplings is a useful guideline to construct models that predict Br(W'->WZ)>2%. Our analysis relies only on the perturbative unitarity of ff -> WW'. Therefore our result can be applied tovarious models. This talk is based on Phys.Rev. D95 (2017) no.7, 075022 [arXiv:1607.03706].

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