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Phenomenology in Non-minimal Universal Extra Dimensions

We present a model with universal extra dimensions in the presence of boundary localized kinetic terms for electoroweak gauge bosons. This model can realize that the lightest Kaluza-Klein particle is a mixture of KK B^1 and KK W_3^1. Depending on boundary localized parameter (r_B, r_W) the KK dark matter is more like KK Z or KK photon. We showed current bounds on (r_B, r_W) from EWPT by 4-Fermi interaction operators.

Summary

In this work, we investigate boundary localized kinetic terms for electroweak gauge bosons. The mass matrix allows mixing between two KK neutral gauge bosons. In general, the LKP becomes a mixture of KK B^1 and KK W_3^1. We found a stringent bounds on R^{-1} or equivalently mass of LKP from 4-Fermi operators in r_W, r_B plane.

Authors: KANG, Dong Woo (Sungkyunkwan University (SKKU)); KONG, K.C. (University of Kansas); PARK, Seongchan (Sungkyunkwan University (SKKU)); FLACKE, Thomas Dieter (Korea Advanced Institute of Science and Technology (KR))

Presenter: KANG, Dong Woo (Sungkyunkwan University (SKKU))