Phenomenology 2018 Symposium



Contribution ID: 508

Type: parallel talk

Domain Wall Standard Model

Monday 7 May 2018 15:45 (15 minutes)

We propose the Domain-Wall(DW) Standard model(SM), where all the SM fields are localized in a non-compact 5D space-time. The DWSM has several interesting implications. Particularly, the interplay between DW fermions and DW gauge bosons is dependent on their mutual configuration in the 5D bulk. By localizing left and right-handed fermions in different places throughout the bulk, this introduces differences in coupling strength to the Kaluza-Klien(KK) gauge fields. These differences can be explored through future experiments at the Large Hadron Collider once a KK-mode of the SM gauge boson is discovered. Additionally, constraints on the sequential SM W' and Z' boson masses enable us to interpret a lower bound on the lowest KK-mode SM gauge boson masses. Other interesting phenomenology considered include effects of the KK-mode SM fermion on the Higgs boson, and KK-mode fermion decays into SM fermions and a NG boson associated with breaking of translational invariance in the 5th dimension.

Summary

Author: Mr VILLALBA, Desmond (University of Alabama)
Co-authors: Dr OKADA, Nobuchika (University of Alabama); RAUT, Digesh (University of Alabama)
Presenter: Mr VILLALBA, Desmond (University of Alabama)
Session Classification: Theoretical Developments