

International Workshop on Next generation Nucleon Decay and Neutrino Detectors (NNN19)



Contribution ID: 80

Type: Poster

Phenomenology of the Two Higgs doublets on noncommutative geometry

Connes' noncommutative geometry (NCG) provides a rigorous framework to build the full Lagrangian of the Standard Model (SM) of particle physics. In this framework, there is an underlying finite space associated with each space-time point. Here, the Higgs field appears naturally as the "connection" linked with this new (dimensionless) space. Despite this achievement, in the minimal NCG SM version, the estimate Higgs boson mass is of 170 GeV, which differs from its actual experimental value. It can be shown that the addition of an extra (singlet) scalar field is a single solution to this shortcoming. In this work, we show a reinterpretation of the fluctuated Dirac operator on NCG which induces an extended Higgs sector. In particular, we present an analysis of the scalar mass spectrum for models with two Higgs doublets (2HDM) on NCG with and without extra singlet scalar fields.

Primary authors: RESTREPO, Diego (Universidad de Antioquia); JIMENEZ GIRALDO, Fredy Angel (Universidad de Antioquia)

Presenter: JIMENEZ GIRALDO, Fredy Angel (Universidad de Antioquia)

Session Classification: Poster Session