



Contribution ID: 388

Type: Oral

Exploring the new physics in 2HDM

Monday 4 November 2019 14:45 (15 minutes)

In this talk, we discuss the new physics implication in Two Higgs doublet Model (2HDM) under various experimental constraints. As part work of Gambit group, our work is to use the global fit method to constrain the parameter space, find out the hints for new physics and try to make some predictions for further studies.

In our global fit, we include the constraints from LEP, LHC (SM-like Higgs boson search), the theoretical requirements (Unitarity, Perturbativity, and vacuum stability), various flavour physics constraints (radiative B Decay $B \rightarrow X_s \gamma$, rare fully leptonic B decays $B \rightarrow \mu^+ \mu^-$, etc) and muon g-2 anomaly.

After the 7-parameter global fit, we have a detailed study about the result, analysing individual constraints effects, finding out advantages of every constraint in constraining parameters and discovering new particles. For the Type-II 2HDM, we find that the λ_2 is sensitive to the LHC SM-like Higgs boson search results. Our final results will be displayed in $\tan \beta - \cos(\beta - \alpha)$, $m_A - \tan \beta$, which are usually considered.

Consider for promotion

Yes

Author: Dr SU, wei (University of Adelaide)

Co-authors: GAMBIT GROUP; WILLIAMS, Anthony (University of Adelaide); WHITE, Martin John (University of Adelaide (AU)); RAJEC, Filip (University of Adelaide)

Presenter: Dr SU, wei (University of Adelaide)

Session Classification: Track 6 –Physics Analysis

Track Classification: Track 6 –Physics Analysis