Contribution ID: **226**   Type: **Parallel session talk**

Flavourful global fit to LHCb data with the general two Higgs doublet model: An update

Friday 19 July 2024 18:00 (15 minutes)

We present an update of the likelihood analysis of the general two Higgs doublet model, using both theoretical constraints and the latest experimental measurements of the flavour observables. We make use of the public code GAMBIT and find that the model can explain the neutral anomalies while respecting the latest measurement of RK(()) *by the LHCb and simultaneously fitting the values of the RD(()*) charged current ratios at 1σ once the latest LHCb measurement of RD(*) is included. From the constrained parameter space, we make predictions for future collider observables. Particularly, the model predicts values of BR(h →bs) and BR(h→τμ) that are within the future sensitivity of the HL-LHC or the ILC. We also show how the Belle II 2.7σ measurement of the golden channel BR(Bˆ{+}→Kˆ{+}ν ν) could be accommodated within the model. Finally, using the latest measurement of the Fermilab Muon g – 2 Collaboration, we performed a simultaneous fit to $\Delta a\mu\_\{\mu\}$, finding solutions at the 1σ level.

Alternate track

1. Beyond the Standard Model

I read the instructions above

Yes

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Session Classification: Quark and Lepton Flavour Physics

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