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Correlating W-Boson Mass Shift with Muon g-2 Anomaly in the 2HDM

Tuesday 7 June 2022 16:30 (15 minutes)

In this talk, I shall describe how the recent high precision measurement of the W-boson mass by the CDF collaboration and the muon (g-2) anomaly are correlated in the context of the two Higgs doublet model. The charged and neutral scalars of the model cannot be heavier than about 600 GeV for a simultaneous explanation of the two anomalies. The entire parameter space of the model can be tested at the LHC by a combination of same sign dimuon signals in $pp \to (\mu^+\mu^+jj+E_T)$ and $pp \to (\mu^+\mu^-\tau^+\tau^-+X)$ signals.

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