

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

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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 $pp \rightarrow (\mu^+ \mu^+ jj + \cancel{E}_T)$ and $pp \rightarrow (\mu^+ \mu^- \tau^+ \tau^- + X)$ signals.

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