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W-boson mass in beyond the standard model

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Following a discussion on W-boson mass observed at the CDF and ATLAS, we explore the parameter space allowed in 2HDM+S model. Further the model parameter space are constrained through vector-like leptons via muon g-2 dataset. We show our results for additional scalar mass fixed to $m_S \approx 96$ and 150 GeV keeping the standard Higgs-boson mass at 125 GeV in all four types of 2HDM+S model. The chosen mass of the singlet scalar is motivated by the excesses seen at the CMS and ATLAS data in proton-proton collisions at the Large Hadron Collider.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

MSc

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