

Scalars 2017

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$(g-2)_{\mu}$ in the presence of
CP violation

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Content :

It is known that the CP-even and CP-odd scalars contribute with an opposite sign to the anomalous magnetic moment of the muon.

We study popular scalar extensions of the Standard Model, namely the singlet extension, the 2-Higgs doublet model (2HDM) and the doublet plus singlet extension. We show that these models are incapable of explaining the observed discrepancy in $(g-2)_{\mu}$, with the exception of 2HDM Type-II which contributes too strongly to $(g-2)_{\mu}$.

We then identify by introducing CP-violation which of these models can explain the anomalous magnetic moment of the muon in a region of the parameter space which is allowed by the eEDM constraints.

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