

# Power-aligned 2HDM: a correlative perspective on $(g - 2)_{e,\mu}$

With the hypothesis of minimal flavor violation, we find that there exists a power-aligned relation between the Yukawa couplings of the two scalar doublets in the two-Higgs-doublet model with Hermitian Yukawa matrices. Within such a power-aligned framework, it is found that a simultaneous explanation of the anomalies observed in the electron and muon anomalous magnetic moments can be reached with TeV-scale quasi-degenerate Higgs masses, and the resulting parameter space is also phenomenologically safer under the B-physics,  $Z$  and  $\tau$  decay data, as well as the current LHC bounds. Furthermore, the flavor-universal power that enhances the charged-lepton Yukawa couplings prompts an interesting correlation between the two anomalies, which makes the model distinguishable from the (generalized) linearly aligned and the lepton-specific two-Higgs-doublet models that address the same anomalies but in a non-correlative manner, and hence testable by future precise measurements.

## Presentation type

Oral

**Primary author:** LI, Shaoping (CCNU)

**Co-authors:** Prof. LI, Xin-Qiang (Central China Normal University); 杨, 亚东 (Central China Normal University); 李, 媛媛 (华中师范大学); 张, 欣 (湖北大学)

**Presenter:** LI, Shaoping (CCNU)