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Muon and electron g-2, proton and cesium weak charges implications on dark models

The 4.2 deviation of the anomalous muon magnetic moment measurements recently performed at Fermilab with respect to the state of the art theory prediction has strengthened the motivation for standard model extensions. In this talk, we analyse a model involving an additional mediator and we show the constraints obtained considering the muon and electron magnetic moment determinations and the proton and cesium weak charge measurements. We will also explain the procedure used to revise the cesium weak charge determination from atomic parity violation, exploiting a practically model-independent extrapolation from the recent neutron radius of lead nuclei performed by PREX.
A combined fit suggests an appealing evidence of the existence of a boson, particularly intriguing in light of other increasing evidences for the incompleteness of the standard model.

Working group

WG4

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