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Current status and latest results of the Mu-MASS experiment at PSI

Tuesday 30 August 2022 14:30 (30 minutes)

Being purely leptonic, i.e. made of constituents which have (to the best of our knowledge) no internal structure, Muonium (M) is an excellent candidate to probe b-QED. I will present our recent measurement of the $n=2$ M Lamb Shift of 1047.2(2.5) MHz, which comprises an order of magnitude improvement upon the last determinations and matches with theory within one sigma. This allows us to set limits on Lorentz and CPT violation in

the muonic sector, as well as on new physics coupled to muons and electrons which could provide an explanation of the muon $g-2$ anomaly. I will discuss the future prospects of such a measurement and the current status of the 1S-2S experiment.

Scientific topic

Symmetries and Interactions

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Session Classification: Symmetries and Interactions