Contribution ID : **21** Type : **Oral presentation**

Theoretical status of the muon g-2

Wednesday, 17 June 2015 08:00 (0:25)

Content

The anomalous magnetic moment of the muon is sensitive to loop contributions from all sectors of the Standard Model and, potentially, to virtual particles of New Physics. In fact, since many years there is an intriguing discrepancy of 3-4 standard deviations between experiment and theory. However, the hadronic uncertainties from vacuum polarization and light-by-light scattering dominate the theory error and make it difficult to interpret this deviation as a clear sign of New Physics. We present some recent developments in the theory of the muon g-2 and give an update on the current status. We end with an outlook on how to better control the hadronic uncertainties, in order to fully profit from planned future muon g-2 experiments to test the Standard Model and to constrain models of New Physics.

Primary author(s) : Dr. NYFFELER, Andreas (Institute of Nuclear Physics, University of Mainz, Germany)

Presenter(s) : Dr. NYFFELER, Andreas (Institute of Nuclear Physics, University of Mainz, Germany)

Session Classification : Muon g-2