



Contribution ID: 136

Type: **Invited talk**

Hadronic contributions to the muon anomalous magnetic moment

Friday, August 3, 2018 2:30 PM (30 minutes)

The anomalous magnetic moment of the muon is one of the most accurately measured quantities in particle physics and one of the very few to exhibit a significant discrepancy with respect to its Standard Model determination. The origin of this discrepancy is unknown. Forthcoming experimental results which are expected to improve the already impressive accuracy of 0.54 parts per million reached by previous measurements, call for improved theory predictions. Standard Model uncertainties are dominated by non-perturbative QCD corrections, namely the hadronic vacuum polarization and the hadronic light-by-light (HLbL) contributions. After reviewing the status of theory predictions, I will present the basic features and a framework which by exploiting the general principles of unitarity and analyticity, paves the way for the first data-driven determination of HLbL with controlled uncertainties.

Primary authors: PROCURA, Massimiliano (University of Vienna (AT)); HOFERICHTER, MARTIN (University of Washington); Dr STOFFER, Peter; COLANGELO, Gilberto

Presenter: PROCURA, Massimiliano (University of Vienna (AT))

Session Classification: QCD and New Physics

Track Classification: E: QCD and New Physics