PerPPS 2025

Giovedì 27 febbraio

INFN PERUGIA

A.D. 1308 unipg

DIPARTIMENTO DI FISICA E GEOLOGIA

ORE 15:00 - AULA A

Anomalous magnetic moment of the muon and related low-energy projects

Olga Shekhovtsova

The anomalous magnetic moment of the muon (AMM) is an important precision parameter for testing the Standard Model of particle physics.
It was first measured at CERN in 1959 and since that time many physicists have been involved in its theoretical evaluation as well in experimental collaborations intended to measure it.
The main source of uncertainty in the theoretical calculations is the contribution of the so-called hadronic vacuum polarization (HVP).
Traditionally, this contribution is determined using experimental data for electron-positron annihilation into hadrons– the so called "data-driven" method.
The current status of the theoretical calculations of the AMM and the impact of low-energy processes on its theoretical value are discussed during the talk. Also, the Monte Carlo tools that are an important component in the "data-driven" method are illustrated in the presentation.