Começar (Iniciar) 10 de mar. de 2025 09:00
Fim 14 de mar. de 2025 19:00
America/Sao_Paulo

Centro Cultural - UFRGS
Jacarandá Auditorium
Rua Eng. Luiz Englert, 333 - Porto Alegre-RS
Ir para o mapa

Victor Goncalves

ID da Contribuição: **143** Tipos: **Seminar (invitees)**

g-2 of the muon in the Standard Model: status and challenges

segunda-feira, 10 de março de 2025 15:30 (30 minutos)

The anomalous magnetic moment of the muon, or g-2, is now known experimentally with an astonishing precision of 0.19 parts per
million and final results from the g-2 experiment at Fermilab are
expected to be released in 2025. It is, therefore, crucial to
scrutinize the Standard Model (SM) determination of g-2 in order to
assess whether or not there is room for beyond-the-SM physics. The main issue is the hadronic vacuum polarization (HVP) contribution
which dominates the theory error. The SM g-2 result based on the HVP
contribution obtained using input from e+e- hadronic cross-section
data shows a larger-than-5-sigma tension with the experimental result,
while using new results for the HVP from lattice QCD the SM
determination of g-2 becomes compatible with experiment. Understanding
the discrepancies between experiment and theory, and between the
data-driven and lattice computations of the HVP contribution, are
critical tasks. In this talk, I will discuss the present status of g-2
in the SM and our recent data-driven computation of specific diagrams
contributing to the HVP in g-2, which provide new benchmarks for the
comparison with present and future lattice-QCD results. I will also
discuss the potential role of recent CMD-3 2pi cross-section data and
new sum rules introduced for scrutinizing the SM calculation of g-2,
comparing data-driven and lattice approaches.

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Classificação da Sessão: Afternoon