

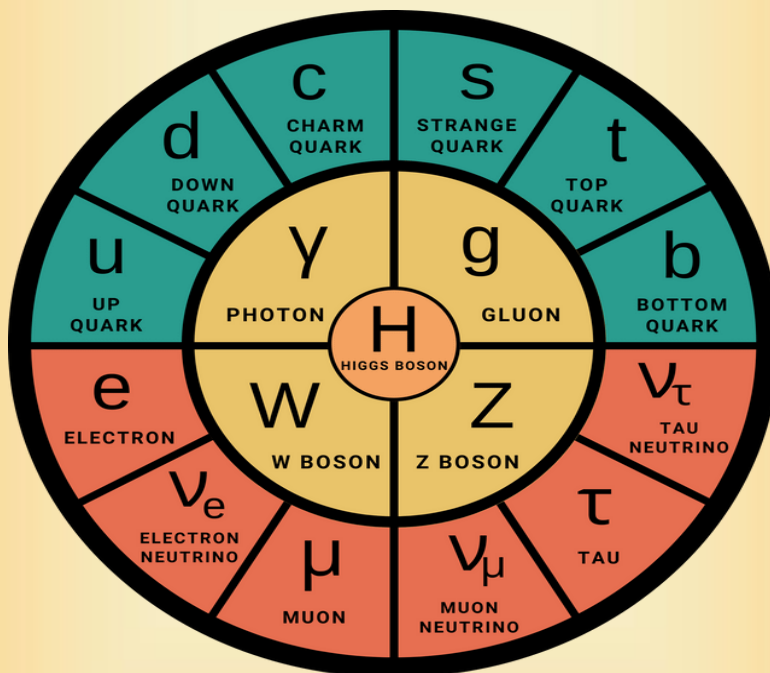
Colóquio de Física

CFUM, LIP-Minho, DF

Terça-Feira, 19 de março às 14:00h
Anfiteatro de Física, Escola de Ciências, Gualtar

The Standard Model of Particle Physics and Beyond

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Resumo:

The Standard Model of particle physics has turned out to be an unexpectedly successful theoretical description of Nature up to energies in the TeV range. Most of the experimental data is consistent with its predictions and it has been completed particle-wise in the last decade with the discovery of a relatively light Higgs boson at the LHC. However, there remain important questions that are not answered by the Standard Model like: (i) Is there a unification of the fundamental forces as suggested by the underlying mathematical structure? (ii) What is the nature of the observed Dark Matter relic density? (iii) What causes the observed baryon asymmetry of the Universe? We will first introduce the Standard Model itself and briefly discuss its status in particular in view of existing LHC results. We will then discuss possible extensions to address the open questions.