

The Mu2e experiment: a search for charged lepton flavor violation in muon to electron conversion

Thursday 28 May 2020 16:18 (18 minutes)

The Mu2e experiment will measure the charged-lepton flavor violating (CLFV) neutrino-less conversion of a negative muon into an electron in the field of a nucleus. Mu2e will improve the previous measurement by four orders of magnitude, reaching a 90% C.L. sensitivity to CLFV conversion rates of 8×10^{-17} or larger. The experiment will reach mass scales of nearly 10^4 TeV, far beyond the direct reach of colliders. It will be sensitive to a wide range of new physics, complementing and extending other CLFV searches. Mu2e is under design and construction at the Muon Campus of Fermilab, and we expect to start taking physics data in 2023. I will present the physics motivation for Mu2e, the detector design, and the current experimental status.

Funding information

Author: MORESCALCHI, Luca (INFN - Pisa)

Session Classification: Experiments: rare process

Track Classification: Experiments: Precision techniques at low energy