



Contribution ID: 16

Type: **Talk**

The Mu2e experiment

The Mu2e experiment will search for coherent neutrinoless conversion of a negative muon into an electron in the field of an aluminium nucleus. Observation of this process would be a signature of Charged Lepton Flavor Violation (CLFV), a Beyond the Standard Model (BSM) process predicted by various theories. Mu2e aims to improve the current limit by four orders of magnitude, reaching a single event sensitivity of 3×10^{-17} , which corresponds to an indirect search at an effective mass scale of $10^4 \text{ TeV}/c^2$. The experiment is wrapping up its construction at Fermilab and is starting its commissioning phase, with plans for data taking in 2027.

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Session Classification: Plenary session

Track Classification: LFV & BSM