

Sensitivity study for the $\mu^+ \rightarrow e^+e^+e^-$ search with the mu3e experiment and work to prepare for Mupix pixel tracker module in Liverpool module

Wednesday 22 May 2019 18:00 (1 hour)

The Mu3e experiment will search for the neutrinoless (lepton flavour violating) decay of an anti-muon to two positrons and an electron $\mu^+ \rightarrow e^+e^+e^-$, with a sensitivity to a branching ratio smaller than 10^{-15} (phase I) and 10^{-15} (phase II). To achieve the proposed sensitivity, the mu3e experiment requires excellent vertex resolution, accurate timing, and momentum measurements. These are needed to reduce the main background processes: Michel decays with an internal conversion, and combinatorial backgrounds. The proposed poster will present an overview of the mu3e experiment. A study of the projected sensitivity of the experiment is presented as well as work preparing for quality assurance measurement that will take place as part of the assembly work on the Mupix-HV-MAPS pixel tracker in Liverpool.

Author: Mrs WASILI, Afaf

Co-author: VOSSEBELD, Joost

Presenter: Mrs WASILI, Afaf

Session Classification: Poster Session

Track Classification: BSM in Flavor Physics