



Contribution ID: 193

Type: **Poster**

## Low Mass Straw Tube Tracker for the Mu2e Experiment

*Tuesday 7 September 2021 18:43 (1 minute)*

A low mass straw tube tracker is at the heart of the Mu2e experiment, tasked with precisely measuring monochromatic electrons from  $\mu^- N \rightarrow e^- N$  conversion as a signal for charged lepton flavor violation (CLFV). The goal of the Mu2e experiment is to discover CLFV and new physics through improving the current limit on the sensitivity of the neutrino-less muon to electron conversion rate by  $10^4$ . The Mu2e tracker is one of the lowest mass trackers in particle physics with  $3.4 \times 10^{-4}$  g/mm linear mass density in the tracking volume made from 96000 15  $\mu$ m thick aluminized Mylar straws. The straw tube tracker is key to suppressing background electrons from processes like decay-in-orbit and radiative pion capture by measuring conversion electrons with a momentum precision of less than 180 keV/c. The Mu2e tracker is in production now and construction will wrap up by 2023. Multiple tracker planes have been produced and we will show results from the first plane that has been under test since the beginning of 2021.

**Primary author:** YUCEL, Mete (Fermilab)

**Presenter:** YUCEL, Mete (Fermilab)

**Session Classification:** Poster Session II

**Track Classification:** Tests of symmetries and conservation laws