Contribution ID: **230** Type: **Poster accelerator**

Recent results from MICE on multiple Coulomb scattering and energy loss

Multiple Coulomb scattering and energy loss are well known phenomena experienced by charged particles as they traverse a material. However, from recent measurements by the MuScat collaboration, available simulation codes (GEANT4, for example) are known to overestimate the scattering of muons in low Z materials. This is of particular interest to the Muon Ionization Cooling Experiment (MICE) collaboration which has the goal of measuring the reduction of the emittance of a muon beam induced by energy loss in low Z absorbers. MICE took data without magnetic field suitable for multiple scattering measurements in
the fall of 2015 with the absorber vessel filled with xenon and in the spring of 2016 using a lithium hydride absorber. In the fall of 2016 MICE took data with magnetic fields on and measured the energy loss of muons in
a lithium hydride absorber. These data are all compared with the Bethe-Bloch formula and with the predictions
of various models, including the default GEANT4 model.

Authorship annotation

The author is the chair of the speakers bureau of the MICE Collaboration and will identify a member of the collaboration to present the contribution, if accepted

Session and Location

Wednesday Session, Poster Wall #61 (Auditorium Gallery Right)

Poster included in proceedings:

yes

Primary authors: Dr YOUNG, Alan (Univ. of Strathclyde, Glasgow); Prof. PALLADINO, Vittorio (Univerity & INFN Napoli, Italy)

Presenters: Dr YOUNG, Alan (Univ. of Strathclyde, Glasgow); Prof. PALLADINO, Vittorio (Univerity & INFN Napoli, Italy)

Track Classification: Poster (not participating in poster prize competition)