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Mu2e Event Visualization Development

Friday, 27 May 2022 15:48 (1 minute)

The Mu2e experiment will search for the CLFV neutrinoless coherent conversion of muon to electron, in the field of a nucleus. A custom Event Display has been developed using TEve, a ROOT based 3-D event visualisation framework. Event displays are
crucial for monitoring and debugging during live data taking as well as for public outreach. A custom GUI allows event selection and navigation. Reconstructed data like the tracks, hits and clusters can be displayed within the detector geometries upon GUI request. True Monte Carlo trajectory of particles traversing the muon beam line, obtained directly from Geant4, can also be displayed. Tracks are coloured according to their particle identification and users get to select which trajectories to be displayed. Reconstructed tracks are refined using a Kalman filter. The resulting tracks can be displayed alongside truth information, allowing visualisation of the track resolution. The user can remove/add data based on energy deposited in a detector or arrival time. This is a prototype and an online event display, is currently under-development using REve which allows remote access for live data taking.

Collaboration

Mu2e

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