

Mu2e Event Visualisation Development using TEve and Eve-7

The Mu2e experiment will search for the CLFV neutrinoless coherent conversion of muons to electrons, in the field of an Aluminium 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 have the option to select which trajectories to be displayed. Reconstructed tracks are refined using a Kalman filter and the resulting tracks can be displayed alongside the 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 being developed using REve. Many of the offline features have been transferred to the online display, which allows remote access for live data taking, and multiple users can simultaneously interact with display.

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