Title:
Single Particle Emittance Measurement with the MICE Trackers and TOF
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Abstract:
The Muon Ionisation Cooling Experiment aims at demonstrating ionization cooling in a muon beam in a variety of modes of operation and beam conditions. One station with precise timing and scintillating fibre tracking is placed both upstream and downstream of a prototype section of a cooling channel. Each will deliver a precise single particle measurement of the emittance of the muon beam. The work presented focuses on the particle tracking an how the fitting procedure (Kalman Filter) takes into account effects like scattering and energy loss in both detector material and gas, detector plane misalignments and non-uniformities of the magnetic field. The accuracy of the emittance measurement is presented.