



Poster session 4 – Friday 8 July

P4.017 Measurements of muon multiple scattering at MICE

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Neutrino factories have been identified as the best facility for making precision measurements of neutrino oscillation physics. To fully realize this technology a demonstration of the reduction of the phase space of a muon beam must be presented. The Muon Ionization Cooling Experiment (MICE) is tasked with providing such a demonstration. Ionization cooling uses the energy loss in a low Z material followed by acceleration in RF cavities to reduce the phase space of a beam on a time scale many times less than the time scale of muon decay. Multiple coulomb scattering (MCS) simultaneously inflates the muon beam and so the interplay between energy loss and MCS must be well understood. Unfortunately MCS is poorly understood in the materials of interest. A programme has commenced for MICE to measure MCS in several materials of interest including lithium hydride, liquid hydrogen, and gaseous xenon. The experimental methods and early results will be presented.