

Physics potential of Lepton beams: muon source neutrino oscillation and Quantum entanglement search in a Muon Collider

In this talk I will present our recent work on determination of Charge-Parity violation in neutrino oscillation and search for quantum entanglement in a Muon Collider.

Using GeV-scale muon beams produced from electron-positron collision, we have neutrino sources rich in flux that can be used for long-baseline neutrino oscillation experiments such as DEUN, NOvA and T2K.

Up to 1000 pseudo experiments are conducted by simulating muon collider with CM energy of 1 TeV to probe quantum entanglement and evaluate the value of Bell inequality for two qutrits composed of massive vector boson.

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