

# Inaugural US Muon Collider Meeting

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## Characterizing Neutrino Interactions In Proposed Muon Collider Detectors

This work investigates the beam-induced neutrino events in proposed muon collider detectors. Through MC simulations, we have computed the event rates within the detector interaction region for designs, considering both  $\mu^+\mu^+$  and  $\mu^+\mu^-$  colliders. We calculate the physical distribution within the detector components as well as the resulting kinematic distributions of the neutrino-induced primary charged leptons. We also compare it to the other beam-induced backgrounds in scenarios discussed in the literature. We discuss possible applications of these events

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