Abstract Submitted
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Search for Charged Lepton Flavor Violation at the US Electron-Ion Collider JIN HUANG, Brookhaven National Laboratory, ABHAY DESHPANDE, JINLONG ZHANG, Stony Brook University, KRISHNA KUMAR, University of Massachusetts, YUXIANG ZHAO, INFN Sezione Di Trieste — Discovery of neutrino oscillations (demonstrating lepton-flavor violation in neutral leptons) begs a question of profound importance: is there flavor violation in charged leptons as well? Within the Standard Model, conservation laws are typically associated with certain symmetries. No such symmetries are identified for charged lepton flavor violation and yet, no experimental evidence for the Charged Lepton Flavor Violation (CLFV) has been found to date. Searches for physics beyond the Standard Model leading to CLFV possible in future facilities is hence of fundamental importance and high interest. The proposed high-energy Electron-Ion Collider (EIC) with its unprecedented high luminosity will provide a unique opportunity for such a search. We will present results from an ongoing study of sensitivities possible for $e \to \tau$ conversion in e-p scattering with the luminosities and center-of-mass energies being proposed at the future US EIC.

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