

Search for the cLFV by muon to electron conversion:COMET and Mu2e

Wednesday, 18 August 2021 11:00 (20 minutes)

In the Standard Model, Flavor-changing-neutral-current (FCNC) in quark sector is predicted at loop level. In the lepton sector, the lepton-flavor-violation (LFV) was evident after the discovery of neutrino oscillation. In the SM, even considering the tiny masses and oscillation of neutrinos, the predicted decay rate for charged-lepton-flavor-violation (cLFV), such as muon-electron conversion, is still tiny (less than 10^{-54}), which can not be detected in experiment. However, New Physics contributions can enhance the muon-electron conversion rate, and lead to observable signal. The COMET experiment and Mu2e experiment are proposed to search for the muon-electron conversion with the sensitivity improved by the order of 4 magnitudes comparing to the current upper limit. Any experimental evidence of cLFV will indicate signal of New Physics.

Primary authors: Ms ZHANG, Yao (Institute of high energy physics, Beijing China); YOU, Zhengyun (Sun Yat-Sen (Zhongshan) University)

Co-authors: TANG, Jian (Sun Yat-Sen University); MORITSU, Manabu (高能所); XING, Tianyu (高能所); Prof. LI WEIGUO, W.G. (IHEP); YUAN, Ye (高能所); 妙晗 (高能所); Prof. 李, 海波 (高能所)

Presenter: Ms ZHANG, Yao (Institute of high energy physics, Beijing China)

Session Classification: Parallel Session I: TeV and BSM Physics

Track Classification: 1. TeV 物理和超出标准模型新物理