APS | DIVISION OF PARTICLES & FIELDS

DPF 2017

MEETING OF THE AMERICAN PHYSICAL SOCIETY DIVISION OF PARTICLES AND FIELDS

Contribution ID: **337**   Type: **Poster**

Charged Lepton Flavor Violation in Electron-Positron Scattering: Calculations of Cross Section and Asymmetry Using an Effective Field Theory

Monday, 31 July 2017 18:50 (1 minute)

We performed theoretical calculations of charged lepton flavor violation (CLFV) cross sections and asymmetries in electron-positron scattering. Examples of CLFV include electron antitau final states and electron antimuon final states. We used an effective field theory that incorporated three types of Beyond Standard Model operators: leptonic operators and radiative operators leading to tree-level diagrams and quark-lepton operators leading to a one-loop diagram. The one-loop diagram was treated in two ways: perturbatively using Standard Model Feynman Rules and non-perturbatively using dispersion relations to account for possible resonance effects. We calculated constraints on the effective coupling constants from current experimental upper bounds. Future colliders such as Belle II and BES III can use our calculations in searches for charged lepton flavor violation.

Primary authors: Prof. PETROV, Alexey (Wayne State University / MCTP); Mr LI, Ching (Haverford College)

Presenter: Mr LI, Ching (Haverford College)

Session Classification: Poster Session and Reception

Track Classification: Quark and Lepton Flavor