Contribution ID: **32** Type: **Student short presentation**

Search for a neutrinoless conversion of a muon to an electron in muonic atoms with the COMET experiment at J-Parc

Wednesday 29 March 2023 14:10 (10 minutes)

Neutrino experiment results suggest that flavor can be violated for neutral leptons through neutrino oscillation, but no flavor violation has been measured for charged leptons yet. The COMET experiment at J-Parc searches for coherent neutrinoless conversion of a muon to an electron in muonic atoms (μ- + N(A,Z) ⟶ e- + N(A,Z)). The goal for COMET Phase-I is to reach an experimental sensitivity of 10^{-15} and then a sensitivity of 10^{-17} for the Phase-II, improving existing limits by a factor 10,000. To reach the expected sensitivity, the detector needs to be protected from the atmospheric muons, which are the main background source. For this purpose, a sub detector called Cosmic Ray Veto (CRV) is needed to operate in this very high radiation environment.

Title

Search for a neutrinoless conversion of a muon to an electron in muonic atoms with the COMET experiment at J-Parc

Primary author: CLOUVEL, Thomas

Presenter: CLOUVEL, Thomas

Session Classification: Presentations