

The COMET Experiment for the Search of Muon-to-Electron Conversion

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The COMET experiment aims to search for the process of muon-to-electron conversion in a muonic atom, with a ultimate goal of achieving a sensitivity on the order of 10^{-17} . This process violates the charged lepton flavor conservation and is forbidden in the Standard Model of the particle physics. Therefore, its discovery would be a clear evidence of the new physics. After the first engineering run for beam commissioning in 2023, the construction of the experimental facility and the detectors is now underway toward the physics run of the COMET Phase-I, which aims for a sensitivity of 3×10^{-15} . The pion capture solenoid magnet, the largest experimental equipment, has already been installed, and delivery of the remaining detector solenoid is scheduled for this year. Following the magnets, the installation of the detector system will be carried out. This talk will provide an update on the current status of the COMET experiment construction.

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