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Search for cLFV with COMET experiment at J-PARC

The COMET experiment at J-PARC facility in JAPAN is designed to search for charged lepton flavour violation (cLFV), one of the most promising way of looking for physics beyond the Standard Model. Specifically, it will search for the coherent, neutrinoless conversion of a muon to an electron in the field of an aluminum nucleus, a process that is forbidden in the Standard Model and highly suppressed in most of its minimal extensions that accommodate neutrino oscillations.

With a targeted single event sensitivity (SES) of the order of 10^{-17} , COMET aims to improve the current limit on the conversion rate by four orders of magnitude. This presentation will review the physics motivation, the experimental design, and the current status of the experiment. The focus will be on recent progress in the construction of the facility and of the detectors for the first phase of the experiment, COMET Phase-I, foreseen to start data taking in 2027.

Secondary track

T07 - Flavour Physics and CP Violation

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