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The COMET experiment: A search for muon-to-electron conversion at J-PARC

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The COMET Experiment at J-PARC aims to search for the lepton-flavour violating process of muon to electron conversion in a muonic atom, $\mu^- N \rightarrow e^- N$, with a branching-ratio sensitivity of 6×10^{-17}, in order to explore the parameter region predicted by most well-motivated theoretical models beyond the Standard Model. The need for this sensitivity places several stringent requirements on both the muon beam and the detector system. In order to realize the experiment effectively, a staged approach to deployment is endorsed by J-PARC Program Advisory Committee and KEK, and the "COMET Phase-I" experiment will commence engineering runs in 2016. The current R \& D and construction status and prospects of the experiment are presented in addition to the experimental overview.

Summary

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