



Lepton flavour violation at COMET.

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Tuesday, 9 October 2012, 16:45 h
DESY Auditorium

The search for new physics through processes which violate charged lepton flavour probe higher scales than direct searches at the LHC and so complement measurements at the energy frontier. Given the Standard Model rate for charged lepton flavour violation is $O(10^{-50})$, measurement of such processes would be an unambiguous signal for physics beyond the Standard Model. Searches have exploited many possible channels and their history and the current experimental limits are briefly reviewed. The field is currently undergoing a renaissance with several new experiments planned and many predictions in the region of experimental sensitivity. The predictions and experiments will be discussed, with focus on the COMET experiment which aims to search for charged lepton flavour violation by the muon-to-electron conversion process in the presence of a nucleus, $\mu^- + N \rightarrow e^- + N$. Using the high-power J-PARC proton beam, COMET expects to have a sensitivity a factor of 10 000 times that of the current limit. The COMET experiment is following a phased approach with construction to start in 2013 and initial data taking expected in 2016, with further construction to follow and final data taking around 2020.

- Coffee, tea and cookies will be served at 16:30h
- After the seminar there is a chance for private discussions with the speaker over wine and pretzels

