



SÉMINAIRE DE PHYSIQUE CORPUSCULAIRE

SUJET: **The Mu3e Experiment: New Physics in Different Places ?**

PAR: **Dr Moritz KIEHN**
Université de Genève, DPNC

DATE: Mercredi 22 février 2017, 11h15

LIEU: Science III, Auditoire 1S081
Boulevard d'Yvoy, 1211 Genève 4

RÉSUMÉ:

There is flavour mixing in the quark sector and flavour oscillations for neutrinos. Are there flavour-changing processes in the charged lepton sector? The expected branching ratios for these processes in the Standard Model are strongly suppressed which make them highly sensitive for possible new physics contributions.

The Mu3e experiment is a new specialized experiment that searches for the lepton flavour violating decay $\mu \rightarrow eee$ aiming for a sensitivity of 1 in 10^{16} decays, four orders of magnitude better than previous searches. To reach this sensitivity low momentum electrons with momenta below 53 MeV/c need to be reconstructed at rates above 10^9 particles/s. This requires a novel experimental detector design with high intensity capabilities and an extremely low material budget. The chosen design uses novel high-voltage monolithic thin silicon pixel detectors and scintillating fibres and tiles.

In this talk I will motivate the search for charged lepton flavour violation, introduce the Mu3e experiment and its experimental design, and give an outlook for its planned operation.

INFORMATION : <http://dpnc.unige.ch/seminaire/annonce.html>

ORGANISATEURS: Sergio.Gonzalez@unige.ch & Domenico.Dellavolpe@unige.ch