



SÉMINAIRE DE PHYSIQUE CORPUSCULAIRE

SUJET: **The COMET Experiment: Searching for Muon-to-Electron Conversion**

PAR: **Dr Ben KRIKLER**
University of Bristol, UK

DATE: Mercredi 24 mai 2017, 11h15

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

RÉSUMÉ:

Muon decay in the Standard Model requires the emission of two neutrinos thanks to the conservation of Lepton Flavour. Given neutrino oscillations, however, this conservation is known to be violated in the Standard Model. The COMET experiment is one of a handful of projects hoping to demonstrate Charged Lepton Flavour Violation, searching for COherent Muon to Electron Transitions, where a muon converts to an electron in the presence of an atomic nucleus, without neutrino emission.

I present here an overview of muon-to-electron conversion and the COMET experiment itself. Currently under construction to begin Phase-I data taking in JFY 2018, the first stage will see a factor 100 improvement on the current limit to around 3×10^{-15} . Phase-II will then go a further two orders of magnitude running early next decade. Setting such stringent limits comes with significant design challenges. These, their solutions, and the current experimental status will also be presented.

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

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