



**UNIVERSITÉ
DE GENÈVE**

FACULTÉ DES SCIENCES
Département de physique
nucléaire et corpusculaire

SÉMINAIRE DE PHYSIQUE CORPUSCULAIRE

SUJET: Tau-neutrino production study at the CERN SPS

PAR: Dr Tomoko ARIGA
University of Bern, Switzerland

DATE: Mercredi 28 septembre 2016, 11h15

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

RÉSUMÉ:

The tau-neutrino CC cross section has never been well measured. There has only been one measurement, by the DONuT experiment, with a systematic uncertainty larger than 50% on tau-neutrino production. In DONuT, tau-neutrino beam was produced by the subsequent decay of Ds mesons. The uncertainty is dominated by the Ds differential production cross section in high energy proton interaction. The DsTau collaboration proposes to study tau-neutrino production and the energy distribution by analyzing Ds \rightarrow tau events in 400 GeV proton interactions. By employing state-of-the-art emulsion particle detector technologies, we will analyze 2×10^8 proton interactions and detect the double-kink topology of Ds \rightarrow tau \rightarrow X decays. With this new measurement, we will re-evaluate the tau-neutrino cross section using the data from DONuT and test lepton universality in neutrino CC interactions. Furthermore, it will provide useful data for future tau-neutrino experiments, e.g. SHiP. In this talk, I report an overview of the experiment and the planned prototype test in 2016.

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

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