



**UNIVERSITÉ
DE GENÈVE**

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SÉMINAIRE DE PHYSIQUE CORPUSCULAIRE

**SUJET: nuPRISM : A Novel Experiment for Studying
Neutrino-Nucleus Interactions**

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RÉSUMÉ:

Current and future neutrino oscillation experiments that will search for CP violation and determine the mass hierarchy are entering the era of precision measurements where uncertainties on neutrino interaction models will limit experimental sensitivities. Recent years have seen significant work to develop neutrino-nucleus interaction models that account for all scattering processes in the nuclear environment, but consistency between models and experimental data is still elusive. The proposed nuPRISM experiment will take advantage of the so-called off-axis effect in a neutrino beam from pion decays to measure the properties of neutrino interactions on water with neutrino spectra having peak energies ranging from 400-1200 MeV. By using measurements over a range of energies, nuPRISM can predict observed final states in neutrino oscillation measurements in a largely model independent way. Conversely the data from nuPRISM can be used to over-constrain neutrino interaction models with data from a single experiment. I will describe the nuPRISM detector concept and its potential application to oscillation experiments such as T2K and Hyper-K, as well as its unique capabilities to make measurements of neutrino interaction cross sections.

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

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