CERN Colloquium

SPEAKER: Valery Nesvizhevsky

TITLE: **Quantum states of neutrons in the gravitational and centrifugal potentials in a new GRANIT spectrometer**

DATE: Thu 18/03/2010 16:30

PLACE: Main Auditorium**

ABSTRACT

We will discuss the scientific program to be studied in a new gravitational spectrometer GRANIT in a broad context of quantum states (quantum behaviour) of ultracold neutrons (UCN) in gravitational [1] and centrifugal [2] potentials, as well as applications of these phenomena/spectrometer to various domains of physics, ranging from studies of fundamental short-range interactions and symmetries to neutron quantum optics and reflectometry using UCN. All these topics, as well as related instrumental and methodical developments have been discussed during dedicated GRANIT-2010 Workshop [3]. The GRANIT spectrometer has been recently installed at the Institut Laue-Langevin, Grenoble, France [4] and could become operational in near future.

1. V.V. Nesvizhevsky et al (2002), Nature 415, 297.
2. V.V. Nesvizhevsky et al (2010), Nature Physics 6, 114.
3. GRANIT-2010, Les Houches, 14-19 february 2010.
4. M. Kreuz et al (2009), NIM 611, 326.

Organised by: Ignatios Antoniadis / PH-TH ----------

**Tea and Coffee will be served at 16:00