

**TUESDAY, MAR. 13, 2001**

**RM 113 MacNAUGHTON BLDG.**

**UNIVERSITY OF GUELPH**

**4:00 p.m.**

## **PROF. LOUIS LESSARD**

*Department of Physics  
University of Montreal*

### **The PICASSO project: present status and future developments**

The detection of cold dark matter is probably the most active field of the new field of astro-particle physics. The PICASSO project is one of the many different approaches being presently tested to construct a large mass detector of adequate sensitivity and background level. We now think that the PICASSO project for the detection of cold dark matter neutralino candidates has reached a stage where the possibility of constructing a large mass detector based on the superheated liquid-to-gas phase transition appears within reach. I will discuss the interest of using such a detector with the available room-temperature superheated liquids. In particular, the advantage of fluorine-rich materials for measuring the neutralino-proton spin-dependent cross section will be presented. The construction and operation of the detectors will be discussed, as well as the precise calibration and background measurements done by the group. Based on these data, projections will be shown for the detection sensitivity that will be obtained with the detector being presently built and for future upgrades.

COFFEE WILL BE AVAILABLE PRIOR TO THE COLLOQUIUM