



Collaborative Graduate Specialization in  
**Computational  
Science and Engineering**

# WEEKLY COLLOQUIUM

Tuesday, 14 March 2006  
2:30-3:30 in Goodes 409

**Speaker:** Mark Boulay  
Canada Research Chair, Physics, Queen's University

**Title:** Solar Neutrinos and the Sudbury Neutrino Observatory

**Abstract:** A long-standing problem in the field of solar neutrinos has been the observed deficit of neutrinos produced in solar fusion reactions compared to predictions from standard models of solar evolution.

The Sudbury Neutrino Observatory (SNO) has recently shown that the solution to this problem lies in the underlying particle physics of neutrinos by finding that a fraction of the neutrinos produced in the Sun change their flavour to one that is undetectable by many experimental techniques. In this seminar I will provide an overview of the field of solar neutrinos and of the SNO experiment with emphasis on analysis of the SNO dataset.

**About the speaker:**

*BSc (Physics), MSc (applied physics), Laurentian University*

*PhD (Queen's) 2001 working on the Sudbury Neutrino Observatory*

*2001-2005 Post-doctoral fellow and technical staff member at Los Alamos National Laboratory, Los Alamos, NM, USA*

*2005 moved to Queen's as Assistant Professor and Canada Research Chair in Particle Astrophysics, current research is on dark matter detectors with liquid cryogenes and solar neutrinos with SNO.*