

The goal of this one-week workshop (August 15-19, 2011) is to gather industry representatives, academic researchers, graduate students and postdoctoral fellows to work on concrete problems proposed by the industry. The workshop is organized by the Centre de recherches mathématiques, along with GERAD, and CIRRELT (Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation), and is sponsored by the MITACS network of centres of excellence. The participants will work in teams, and each team will analyze a problem supplied by a company or a public sector institution. The workshop will provide companies and institutions with mathematical tools for solving problems, and will enable academic researchers and students in applied mathematics to work on real-world problems.

The Montreal workshop is part of a Canadian tradition, since the PIMS Institute, based in Vancouver, started organizing Industrial Problem Solving Workshops around fifteen years ago. Information on these may be found at

www.pims.math.ca/industrial.

The Fields Institute is also organizing workshops; information on the 2010 workshop may be found at

www.fields.utoronto.ca/programs/scientific/10-11/FMIPW10/.

The Canadian workshops are modelled on the “study groups” created by Professor John Ockendon at the University of Oxford (cf. the site <http://www.maths-in-industry.org>).

PROBLEM SAMPLES



Here are some instances of problems studied at previous workshops.

- Optimization of Road Preservation
 - Modelling crystal growth for the production of semiconductors
 - Modelling Forest Fires
 - Seismic Prediction of Reservoir Parameters
 - Dynamics of Large Mining Excavators
 - How to Create the Composite Image of an Integrated Circuit
 - Efficient Portfolio Selection
 - Planning of Milk Collection Routes for the Fédération des producteurs de lait du Québec
 - Mathematical Modelling of Aluminium Electrolysis Cells
 - Extraction of Endogenous Fluorescence from Diffuse Optical Images of Fluorescence
- More problem instances may be found on the site www.crm.math.ca/probindustriels2009/index_e.shtml.

BENEFITS FOR THE INDUSTRY

- Collaborations with Canadian or foreign experts in mathematical modelling
- Interactions with talented and highly motivated graduate students
- Opportunities to develop innovating solutions for difficult problems
- Forging of long-term links between universities and industry
- Support for academic training focused on industrial problem solving
- Enhancement of company visibility



HOW TO PARTICIPATE

If you are an industrial partner and wish to participate, please write the statement of a problem that can be formulated in mathematical terms. Many problems can be formulated in this way, especially in the fields of management, production planning or process optimization. Don't hesitate to contact the organizers in order to discuss your problem. If your project is selected, you will have to write a more detailed description and present it at the beginning of the workshop. The workshop organizers suggest that the company representative be present during the whole week. They also expect the industry to help defray some of the costs of the workshop.



The professors, students, and industrial representatives who wish to participate must register on the workshop web site. Students must fill an application form (also on the web site) before registering.

HOW TO CONTACT THE ORGANIZERS

The organizing committee of the workshop is chaired by Dr. Jean-Marc Rousseau, CIRANO Invited Fellow and CEO of ncm2, and includes professors from Université de Montréal, École Polytechnique de Montréal, HEC Montréal, McGill University and other Canadian universities. These professors have industrial partners and were team leaders in previous workshops.



For further information, please contact

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FOURTH MONTREAL INDUSTRIAL PROBLEM SOLVING WORKSHOP A CRM-MITACS EVENT

AUGUST 15 - 19, 2011

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