

The goal of this one-week workshop (August 19-23, 2013) is to gather representatives of industry, 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 (Inter-university Research Centre on Enterprise Networks, Logistics and Transportation), and is sponsored by the Mprime 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 allow academic researchers and students in applied mathematics to work on real-world problems.

The Montreal workshop is part of a Canadian tradition, started around fifteen years ago in Western Canada by the Pacific Institute for the Mathematical Sciences, with their Industrial Problem Solving Workshops:

www.pims.math.ca/industrial.

Our partner, the Fields Institute, also runs such workshops; information on the 2010 workshop may be found at

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

The Canadian workshops were modelled on the “study groups” created at the University of Oxford (cf. the site 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 in Fluorescence Diffuse Optical Imaging

More problem instances can be found on the site www.crm.math.ca/proindustriels2011/index_e.shtml.

BENEFITS FOR THE INDUSTRY

- Collaboration with Canadian or foreign experts in mathematical modelling
- Interaction 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 the Université de Montréal, the 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

ODILE MARCOTTE
Deputy director
Centre de recherches mathématiques
Tel.: 514-343-6111 ext. 4725
Email: marcotte@crm.umontreal.ca

FIFTH MONTREAL PROBLEM SOLVING WORKSHOP A CRM-MPRIME EVENT

AUGUST 19 - 23, 2013

*Centre de recherches mathématiques
Université de Montréal
Pavillon André-Aisenstadt
2920 Chemin de la tour, 5th floor
Montréal (Québec) H3T 1J4*



GERAD

