

The goal of this one-week workshop (August 20-24, 2007) 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, the CIRRELT (Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation) and ncm_2 , and is sponsored by the MITACS network of centres of excellence. The participants will work in teams, and each team will analyse 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 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 ten years ago. Information on these may be found at

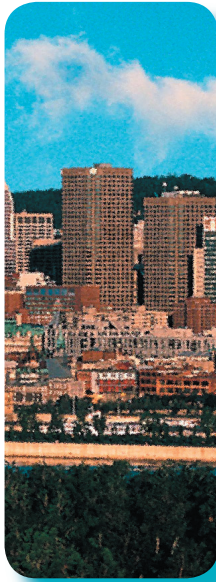
www.pims.math.ca/ipsw/.

In 2006, the Fields Institute organized a similar workshop; information on this workshop may be found at

www.fields.utoronto.ca/programs/scientific/06-07/FMIPW/.

In Eastern Canada, the Industrial Problem Solving Workshops will alternate between the Fields Institute and the CRM.

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
- Designing Running Shoes
- Seismic Prediction of Reservoir Parameters
- Global Migration and Infectious Disease
- Dimension Reduction of High-dimensional Data
- Dynamics of Large Mining Excavators
- How to Create the Composite Image of an Integrated Circuit
- Efficient Portfolio Selection

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 to academic training focused on industrial problem solving
- Enhancement of company visibility



How to participate

If you wish to participate, please write the statement of a problem that can be formulated mathematically. Many problems can be so formulated, 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.



How to contact the organizers

The organizing committee of the workshop is chaired by Dr. **JEAN-MARC ROUSSEAU**, CIRANO Invited Fellow and CEO of ncm_2 . It includes :

ALAN BERNARDI (director, Bell University Laboratories),

ANNE BOURLIOUX (Département de mathématiques et statistique, Université de Montréal),

MYRIAM BOUROCHE (director, Bell University Laboratories, ncm_2),

MICHEL GENDREAU (director, Center for Research on Transportation, Université de Montréal),

ALEXANDRA HAEDRICH (MITACS),

PIERRE HANSEN (Data Mining Chair, HÉC Montréal),

FRANÇOIS LALONDE (director, Centre de recherches mathématiques, Université de Montréal),

ROLAND MALHAMÉ (director, GERAD, École Polytechnique), and

ODILE MARCOTTE (GERAD and UQÀM).

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FIRST MONTREAL INDUSTRIAL PROBLEM SOLVING WORKSHOP

AUGUST 20 - 24, 2007

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



CIRRELT MITACS

www.crm.math.ca/probindustriels/index_e.shtml

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