

The goal of this one-week workshop (August 17-21, 2015) is to gather industrial representatives, academic researchers, graduate students and postdoctoral fellows to work on concrete problems proposed by the industry. The participants will work in teams and each team will analyze a problem supplied by a company or public sector institution. The workshop will provide companies and institutions with mathematical tools for solving problems and allow academic researchers and students in mathematics to work on real-world problems.

This year the workshop will be held within the framework of the Institutes Innovation Platform (IIP), a project supported by the Natural Sciences and Engineering Council of Canada (NSERC) and whose goal is to initiate and develop collaborations between industry and academic researchers in the mathematical sciences.

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](http://www.pims.math.ca/industrial).

In Toronto, the Fields Institute also organizes such workshops; information on the 2014 workshop can be found at

[www.fields.utoronto.ca/programs/cim/14-15/IPSW14/](http://www.fields.utoronto.ca/programs/cim/14-15/IPSW14/).

The Canadian workshops were modelled on the “study groups” created at the University of Oxford (cf. the site [www.maths-in-industry.org](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 in Fluorescence Diffuse Optical Imaging
- More problem instances can be found on the site [www.crm.math.ca/proindustriels2013/index\\_e.shtml](http://www.crm.math.ca/proindustriels2013/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. Do not 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 workshop costs.



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.

## ORGANIZING COMMITTEE AND CONTACT INFORMATION

The workshop organizing committee includes Canadian professors who have industrial partners and have experience coordinating the work of teams within problem solving workshops. The main workshop organizer is Dr. Odile Marcotte, CRM Deputy Director (Partnerships). Dr. Stéphane Rouillon, the CRM Partnerships Development Officer, is also involved in the organization of the workshop.



For further information, please contact

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## SIXTH MONTREAL INDUSTRIAL PROBLEM SOLVING WORKSHOP

AUGUST 17 - 21, 2015

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