CENTRE DE RECHERCHES MATHÉMATIQUES

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THEMATIC SEMESTER

RISK IN COMPLEX SYSTEMS

MODELS, APPLICATIONS, PERCEPTIONS, AND POLICY IMPLICATIONS

AUGUST – DECEMBER 2017

Centre de recherches mathématiques
Montréal, Canada

Hazards inherent to complex interconnected systems can lead to disasters of epic proportions with untold environmental, economic and social consequences. The identification, quantification, prediction, control, and mitigation of risk factors is thus essential to ensure individual protection and system integrity while promoting sustainable development.

This thematic program seeks to promote the study and use of stochastic models and statistical inference techniques that are relevant for an enhanced understanding of the interplay between risk factors and their potentially catastrophic effects on dynamic systems. Dependence models, extreme-value theory and time series analysis form the methodological backbone of quantitative risk management. Many important current issues will be considered, including the development of models for extreme events and large collections of variables, risk aggregation and model validation through expert use, the assessment and control of systemic risk, and risk propagation in epidemiology, finance, power networks, computer systems, etc.

The workshops are designed to foster interactions among probabilists, statisticians, econometricians, regulators, and risk modelers in finance, insurance, hydrology, as well as in the health, climate, and environmental sciences. They will bring together researchers and practitioners from these various areas and will present an excellent opportunity to take stock of recent developments, identify new challenges and initiate fruitful collaborations.

A week-long school based on the bestseller "Quantitative Risk Management: Concepts, Techniques and Tools" by McNeil, Frey and Embrechts (Princeton University Press, 2015) will precede the workshops and provide young investigators and professionals alike with a hands-on introduction to this rapidly growing field.

LOCAL ORGANIZING COMMITTEE

Christian Genest, Chair (McGill University)
Debbie J. Dupuis (HEC Montréal)
Erica Moodie (McGill University)
Johanna G. Nešlehová (McGill University)
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Francis W. Zwiers (Pacific Climate Impacts Consortium, Victoria, BC)

AISENSTADT CHAIRS

Claudia Klüppelberg (Technische Universität München)
August – September 2017

Alexander J. McNeil (University of York)
September – October 2017

RELATED ACTIVITY

Summer School in Quantitative Risk Management
August 21 – 24, 2017
http://qrmtutorial.org/
Instructors:
Rüdiger Frey (Wirtschaftsuniversität Wien)
Marius Hofert (University of Waterloo)

WORKSHOPS

Environmental Risk Modeling and Extreme Events
August 28 – 31, 2017
Organizers:
Anthony C. Davison (École polytechnique fédérale de Lausanne)
Debbie J. Dupuis (HEC Montréal)
Francis W. Zwiers (Pacific Climate Impacts Consortium, Victoria, BC)

Risk Measurement and Regulatory Issues in Business
September 11 – 14, 2017
Organizers:
Carole Bernard (Grenoble School of Management)
Michel Dacorogna (DEAR-Consulting, Switzerland)
Steven Vanduffel (Vrije Universiteit Brussel)
Ruodu Wang (University of Waterloo)

Measurement and Control of Systemic Risk
September 25 – 28, 2017
Organizers:
Rama Cont (Imperial College London)
Paul Glasserman (Columbia University)
Bruno Rémillard (HEC Montréal)

Dependence Modeling Tools for Risk Management
October 2 – 5, 2017
Organizers:
Anne-Laure Fougères (Université Claude-Bernard, Lyon)
Johanna G. Nešlehová (McGill University)
Matthias Scherer (Technische Universität München)

Risk Modeling, Management and Mitigation in Health Sciences
December 11 – 14, 2017
Organizers:
Daniel J. Graham (Imperial College London)
Nicholas P. Jewell (University of California at Berkeley)
Erica Moodie (McGill University)
David A. Stephens (McGill University)

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