# ISMP 2018
## BORDEAUX

**23rd** International Symposium on
**Mathematical Programming**

Bordeaux, July 1–6, 2018

# **Welcome to ISMP Bordeaux**

François Vanderbeck (Conf. Chair) , François Clautiaux (Co-Chair)

Manuel Tunon de Lara (President of the University of Bordeaux)

Karen Aardal (Chair of the Math Optimization Society - MOS)

# Our Host

# Donators

# Sponsors

# Organization 2018

Home-Made

Participative

# Evolutions ... in the continuity of ISMPs

1. **Clusters and Streams → a larger Scientific Committee**

**Cluster 1: Discrete Optimization and Integer Programming**
IPtheory, IPpractice, MINLP, APPROX, COMB, CP

**Cluster 2: Optimization under Uncertainty**
Stoch, Robust, Markov, Game

**Cluster 3: Continuous Optimization**
NLP, Global, NonSmooth, SDP, Variat, RandomM, DerFree, Control

**Cluster 4: Problem Specific Models, Algorithm Implementations, and Software**
Learning, Network, Logistics, Scheduling, Energy, Sciences, Algo

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2. **Keynote Speakers → a larger burden on the Program Committee**

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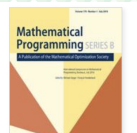
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Mathematical Programming
All Volumes & Issues

Volume 170, Issue 1, July 2018

Special Issue: International Symposium on Mathematical Programming, Bordeaux, July 2018

**Issue Editors:** Michael Jünger, François Vanderbeck

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3. **A scientific program "Scheduler" → optimization & engineering Staff**

# Program Committee

**Chair:**
 Michael Jünger, Prof., University of Cologne, Germany

**For Cluster 1:** Discrete Optimization and Integer Programming
 Dan Bienstock, Prof., Columbia University, USA
 Gerard Cornuéjols, Prof., Carnegie Mellon University, USA
 Michel Goemans, Prof., Massachusetts Institute of Technology, USA

**For Cluster 2:** Optimization under Uncertainty
 Laurent El Ghaoui, Prof., UC Berkeley, USA
 Simge Küçükyavuz, Prof., University of Washington, USA
 Daniel Kuhn, Prof., Ecole Polytechnique Fédérale de Lausanne, Switzerland

**For Cluster 3:** Continuous Optimization
 Frank Curtis, Asoc. Prof., Lehigh University, USA
 Claudia Sagastizabal, Researcher, IMPA (Mathematical sciences research institute), Brasil
 Stephen Wright, Prof., University of Wisconsin-Madison, USA

**For Cluster 4:** Problem Specific Models, Algorithm Implementations, and Software
 Michael Ferris, Prof., University of Wisconsin-Madison, USA
 Martine Labbé, Prof., Université Libre de Bruxelles, Belgium
 Stefan Wild, Researcher, Argonne, USA

**Representing the Organization Committee:**
 François Clautiaux, Prof., U. Bordeaux & Inria team Realopt
 François Vanderbeck, Prof., U. Bordeaux & Inria team Realopt (Vice Chair)

# Scientific Committee

1. **Cluster on Discrete Optimization and Integer Programming**

   (a) IPtheory: Integer Programming Theory (Polyhedral Study, Lattices, Extented Formulations...):
   *Michele Conforti, Fritz Eisenbrand, Volker Kaibel, Ridha Majhoub*

   (b) IPpractice: Integer Programming Algorithms (Branch-and-cut, Reformulations and Decomposition, ...)
   *Sanjeeb Dash, Adam Letchford, Ivana Ljubic, Marc Pfetsch*

   (c) MINLP: Mixed Integer Non-linear Programming
   *Jeff Linderoth, Andrea Lodi, Jean-Philippe Richard, Frédéric Roupin*

   (d) APPROX: Complexity, Approximation and Online Algorithms
   *Lionel Eyraud-Dubois, David P. Williamson, Rico Zenklusen*

   (e) COMB: Combinatorial Optimization and Graph Theory
   *Laura Sanità, Gianpaolo Oriolo, Arnaud Pêcher, Nicolas Trotignon*

   (f) CP: Constraint Programming
   *Louis-Martin Rousseau, Ruslan Sadykov, Pascal Van Hentenryck*

2. **Cluster on Optimization under Uncertainty**

   (a) Stoch: Stochastic Optimization
   *Boris Detienne, James Luedtke, Alexander Shapiro*

   (b) Robust: Robust Optimization
   *Dimitris Bertsimas, Christoph Buchheim, Michael Poss*

   (c) Markov: Dynamic Programming, Markov Decision Processes, and Simulation
   *François Dufour, Stéphane Gaubert, Huseyin Topaloglu*

   (d) Game: Game theory, Bi-level and Multi-Objective Optimization
   *Luce Brotcorne, Roberto Cominetti, Kathrin Klamroth*

3. **Cluster on Continuous Optimization**

   (a) NLP:Linear and Nonlinear Optimization, Sparse Optimization and applications
   *Immanuel Bomze, Jean-Charles Gilbert, Jérôme Malick*

   (b) Global: Global Optimization
   *Mirjam Dür, Jean-Baptiste Hiriart-Urruty, Yaroslav Sergeyev*

   (c) NonSmooth: Nonsmooth Optimization
   *Jean-François Aujol, Amir Beck, Antonio Frangioni, Yurii Nesterov*

   (d) SDP: Conic Programming, Quadratic Programming and Semi-Definite Programming
   *Sourour Elloumi, Franz Rendl, Angelika Wiegele*

   (e) Variat : Variational Analysis, Variational Inequalities and Complementarity.
   *Samir Adly, Xiaojun Chen, Boris Mordukhovich*

   (f) RandomM: Random Methods for Continuous Optimization (Stochastic Gradient, . . . )
   *Guanghui (George) Lan, Artur Pessoa, Lin Xiao*

   (g) DerFree: Derivative-free and Simulation-based Optimization
   *Charles Audet, Serge Gratton, Katya Scheinberg*

   (h) Control: Optimal Control, PDE Constrained Optimization, and Multi-level Methods
   *Jean-Bernard Lasserre, Stefan Ulbrich, Emmanuel Trelat*

4. **Cluster on Problem Specific Models, Algorithm**

   (a) Learning: Machine Learning, Big Data, Cloud Computing, and Huge-Scale Optimization
   *Alexandre d'Aspremont, Olivier Beaumont, Peter Richtarik, Suvrit Sra*

   (b) Network: Network Flow, Network Design, and Applications in Telecom and Traffic Management
   *Bernard Fortz, Bernard Gendron, Luis Gouveia*

   (c) Logistics: Packing, Logistics, Location, and Routing
   *Jean-François Cordeau, Frédéric Semet, Eduardo Uchoa, Daniele Vigo*

   (d) Scheduling: Scheduling, Planning and Applications in Manufacturing Systems and Healthcare
   *Tom McCormick, Gautier Stauffer, François Soumis, Matthieu VanVyve*

   (e) Energy: Optimization for Environmental, Energy, and Engineering Systems
   *Miguel Anjos, Claudia d'Ambrosio, Christine Shoemaker, Golbon Zakeri*

   (f) Sciences: Optimization in Sciences, Computational Biology, Societal Issues, Finance, and Economics
   *Sonia Cafieri, Leo Liberti, Britta Peis*

   (g) Algo: Math Programming Algorithm Implementations, Parallel Computing, and Software
   *Tobias Achterberg, Giacomo Nannicini, Pierre Pesneau, Andrea Tramontani*

# Logistic Staff

**ADERA**

Isabelle Voirin  Magali Garcia  Jean Rivenc

**University Congres Office**

Sabine Raposo  Marie Desjardins

**Inria Communication Office**

Flavie Attigui  Joelle Rodrigues  Solène Audoux

# IT-Optim Staff

Philippe Depouilly     Laurent Facq

Pierre Pesneau
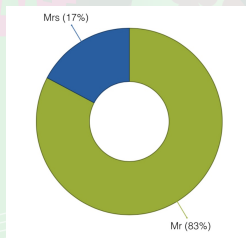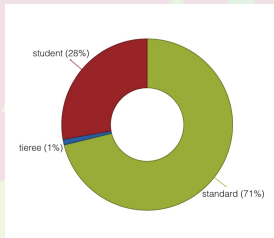**→ open source code**

# Student Brigade

# Your Contributions

1900 attendees
50 countries
1550 talks
480 sessions



| US | 456 |
| FR | 280 |
| DE | 262 |
| CA | 96 |
| GB | 89 |
| BR | 71 |
| CH | 59 |
| JP/IT | 57 |
| CN | 55 |

# Program

**To Chairpersons:** please
**keep on schedule** &
leave **empty slot** when talk cancelled

| | | Sun.01 | Mon.02 | Tue.03 | Wed.04 | Thu.05 | Fri.06 |
|---|---|---|---|---|---|---|---|
| 8AM | A | | | Parallel Sessions 4x30 min | Parallel Sessions 4x30 min | Parallel Sessions 4x30 min | Parallel Sessions 4x30 min |
| 9AM | | | Opening Ceremony | | | | |
| 10AM | | | | Coffee Break | Coffee Break | Coffee Break | Coffee Break |
| | | | Break | | | | |
| 11AM | B | | Plenary Talk | Semi-Plenary + Keynote speakers | Semi-Plenary + Keynote speakers | Semi-Plenary + Keynote speakers | Semi-Plenary + Keynote speakers |
| 12AM | C | | Meeting of the MPC editorial board | Meeting of the MPA/B editorial boards | Meeting of MOS and Springer delegations | SIOPT board meeting | |
| 1PM | | | | | | | |
| 2PM | D | Registration and wine testing | Semi-Plenary + Keynote speakers | Plenary Talk | Plenary Talk | Plenary Talk | Plenary Talk |
| 3PM | | | Break | Break | Break | Break | Break |
| 4PM | E | | Parallel Sessions 3x30 min | Parallel Sessions 3x30 min | Parallel Sessions 3x30 min | Parallel Sessions 3x30 min | Parallel Sessions 3x30 min |
| 5PM | F | | Parallel Sessions 4x20/3x30 min | MOS Business Meeting | Parallel Sessions 4x20/3x30 min | Parallel Sessions 4x20/3x30 min | Parallel Sessions 4x20/3x30 min |
| 6PM | | | | | | | |
| 7PM | G | | MOS council meeting | Optimization discussion group | | | |
| 8PM | | | | | Conference Dinner | | Farewell Party |
| 9PM | | | | | | | |

# Location



Continuous Opt

Applic & Soft

Discrete Opt

Stochast Opt
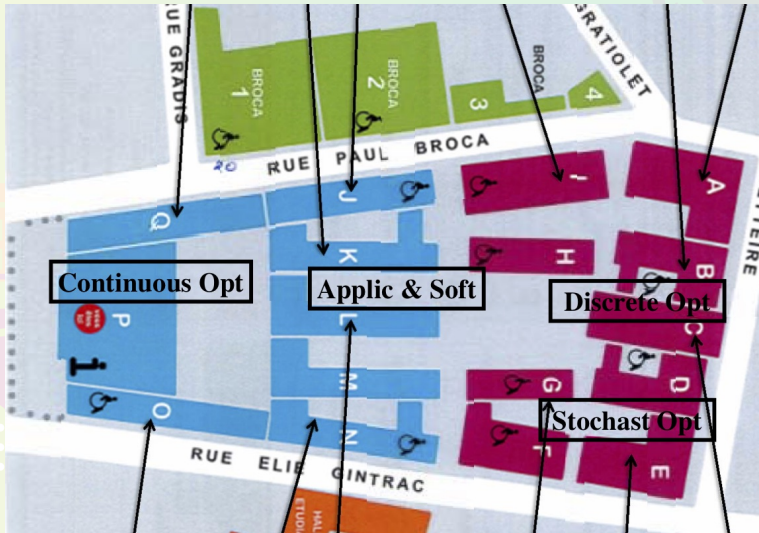
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# Price Award Ceremony

Michael Jünger (Program Committee Chair)

# Paul Tseng Memorial Lectureship

*For outstanding contributions in continuous optimization.*

**Presented by**

Ya-xiang Yuan, jury member

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Ya-xiang Yuan, jury member

**Prize awarded to**

## Zhi-Quan Luo

# A.W. Tucker Prize

*For an outstanding thesis in mathematical programming.*

**Presented by**

Simge Küçükyavuz, jury chair

# A.W. Tucker Prize

*For an outstanding thesis in mathematical programming.*

**Presented by**

Simge Küçükyavuz, jury chair

**Finalists**

Adrien Taylor and Damek Davis

**Prize awarded to**

**Yin Tat Lee**

# Lagrange Prize for Continuous Optim.

*For outstanding work in continuous optimization.*

**Presented by**

Katya Scheinberg, jury chair

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*For outstanding work in continuous optimization.*

**Presented by**

Katya Scheinberg, jury chair

**Prize awarded to**

## Francis Bach, Nicolas Le Roux, & Mark Schmidt

# Beale - Orchard-Hays Prize

*For outstanding work in computational mathematical programming*

**Presented by**

Michael Grant, jury chair

# Beale - Orchard-Hays Prize

*For outstanding work in computational mathematical programming*

**Presented by**

Michael Grant, jury chair

**Prize awarded to**

# Defeng Sun, Kim-Chuan Toh, & Liuqin Yang

# Delbert Ray Fulkerson Prize

*For outstanding papers in discrete mathematics.*

**Presented by**

Maria Chudnovsky & Martin Grötschel

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*For outstanding papers in discrete mathematics.*

**Presented by**

Maria Chudnovsky & Martin Grötschel

**Prize awarded to**

## **Thomas Rothvoss**

# Delbert Ray Fulkerson Prize

*For outstanding papers in discrete mathematics.*

**Presented by**

Maria Chudnovsky & Martin Grötschel

**Prize awarded to**

## Thomas Rothvoss

## Peter Allen, Julia Böttcher, Simon Griffiths, Yoshiharu Kohayakawa, Robert Morris

# George B. Dantzig Prize

*For original research having a major impact on mathematical optimization.*

**Presented by**

Gérard Cornuéjols, jury chair

# George B. Dantzig Prize

*For original research having a major impact on mathematical optimization.*

**Presented by**

Gérard Cornuéjols, jury chair

**Prize awarded to**

# Alexander Shapiro & Andrzej Ruszczyński

# University of Bordeaux Chorale

directed by Laurence WALLIMANN