PGMO-COPI’14
GASPARD MONGE PROGRAM FOR OPTIMIZATION
CONFERENCE ON OPTIMIZATION & PRACTICES IN INDUSTRY
28 - 31 october 2014 Paris-Saclay (Ecole Polytechnique)

SCIENTIFIC PROGRAM

www.fondation-hadamard.fr/fr/PGMO

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Tuesday 28th October 2014 - Amphithéâtre Faurre
Welcome (starting at 08:30)
09h00 - Introduction (Patrick Le Quere, Ecole Polytechnique, Marc Ringeisen, EDF R&D).
09h15 - Scientific Conference by Vicenţiu Dănescu (University of Auckland, New Zealand).
10h00 - Results of the PGMO PhD prize.
10h10 - PGMO PhD prize: First Conference.
10h40 - Coffee break.
11h10 - Scientific Conference by Daniel Bienstock (Columbia University).
11h55 - Scientific Conference by Francis Bach (INRIA, Paris, France).
12h40 - Lunch.
14h00 - Coffee.
14h30 - Review of PGMO projects 2013-2014 - Sandrine Charousset and Stéphane Gaubert.
15h00 - Conference by Marc Ringeisen (EDF R&D).
15h45 - Scientific Conference by Jean-Bernard Lasserre (LAAS-CNRS, France).
16h30 - Coffee break.
17h00 - PGMO PhD prize: Second Conference.
17h30 - Presentation of PGMO projects 2014-2015 - Sandrine Charousset and Stéphane Gaubert.
18h00 - End of the day.

Wednesday 29th October 2014
Welcome (starting at 08:30)
09h00 (Amphi Faurre) - Scientific Conference by Claudia Sagastizábal (IMPA, Brasil).
09h45 (Amphi Faurre) - Scientific Conference by René Henrion (Weierstrass Institute, Germany).
10h30 - Coffee break.
11h00 - Parallel Sessions:
(Amphi Sauvy) Contributed Session - Markets
(Amphi Faurre) Contributed Session - Hydropower (1/2)
(Amphi Poisson) Contributed Session - Unit Commitment (1/2)
(Amphi Painlevé) Invited Session - Game Theory (1/2)
(Amphie Curie) Contributed Session - Global optimization
12h45 - Lunch.
14h00 - Coffee.
14h30 - Parallel Sessions:
(Amphi Faurre) Invited Session - Stochastic Optimization (1/2)
(Amphi Painlevé) Invited Session - Game Theory (2/2)
(Amphi Sauvy) Contributed Session - Nuclear
(Amphi Curie) Contributed Session - Optimal Control
(Amphi Poisson) Invited Session - Recent Advances on Continuous Randomized black-box optimization (1/2)
16h00 - Coffee break.
16h30 (Amphi Faurre) - Scientific Conference by Laurent El Ghaoui (University of Berkeley, USA).
17h20 - Cocktail (Introduced by Hans Rugh, FMJH Director).

Thursday 30th October 2014
Welcome (starting at 08:30)
09h00 (Amphi Faurre) - Scientific Conference by Ivar Ekeland (Ceremade, Université Paris Dauphine, Paris, France).
09h45 (Amphi Faurre) - Scientific Conference by Nicole El Karoui (Université Pierre et Marie Curie and Ecole Polytechnique, Paris, France).
10h30 - Coffee break.
11h00 - Parallel Sessions:
(Amphi Sauvy) Invited Session - Complexity of linear programming and games (1/3)
(Amphi Faurre) Invited Session - Stochastic Optimisation (2/2 : applications to energy management)
(Amphi Painlevé) Invited Session - Energy Markets
(Amphi Poisson) Invited Session - Recent Advances on Continuous Randomized black-box optimization (2/2)
12h40 - Lunch.
14h00 - Coffee.
14h30 (Amphi Faurre) - Scientific Conference by Frédéric Roupin (Université Paris 13, France).
15h15 (Amphi Faurre) - Scientific Conference by Sourour Elloumi (ENSIEE, Evry, France).
16h00 - Coffee break.
16h30 - Parallel Sessions:
(Amphi Painlevé) Contributed Session - Game theory
(Amphi Sauvy) Contributed Session - Scheduling
(Amphi Poisson) Contributed Session - Unit Commitment (2/2)
(Amphi Faurre) Contributed Session - Industry
18h15 - End of the day.

Friday 31st October 2014
Welcome (starting at 08:30)
09h00 (Amphi Faurre) - Scientific Conference by Jean Andre (Air liquide, Paris, France).
09h45 (Amphi Faurre) - Scientific Conference by Golbon Zakeri (University of Auckland, New Zealand).
10h30 - Coffee break.
11h00 - Parallel Sessions:
(Amphi Poisson) Contributed Session - Chance Constraint Programming and Quadratic Programming
(Amphi Sauvy) Invited Session - Complexity of linear programming and games (2/3)
(Amphi Faurre) Invited Session - Optimization tools for large scale industrial systems
(Amphi Painlevé) Contributed Session - Smart-Grid and energy
12h40 - Lunch.
14h00 - Coffee.
14h30 (Amphi Faurre) - Conference by Patrice Gérardin, Director - Commerce Optimisation & Trading, EDF, France.
15h15 - Parallel Sessions:
(Amphi Painlevé) Contributed Session - Learning and Metaheuristics
(Amphi Faurre) Contributed Session - Hydropower (2/2)
(Amphi Poisson) Contributed Session - Operational Research
(Amphi Sauvy) Invited Session - Complexity of linear programming and games (3/3)
16h45 (Amphi Faurre) - Closure of the Conference by Marc Ringeisen, EDF R&D.
17h00 - End of the day.
Wednesday 29th October 2014 - Morning sessions

--- Amphi Sauvy : Contributed Session : MARKETS ---
D. Aussel, University of Perpignan, France - About variational reformulations of electricity market models.
A. Tibau-Puig, @WalmartLabs - Scalable Robust Pricing for margin-constrained revenue management.

--- Amphi Faurre : Contributed Session : HYDROPOWER (1/2) ---
M. Brunet and T. Triboulet, EDF - How to track and deal with errors in huge data in entry of a model ?
V. de Matos, Plan4 Engenharia - Assessment of Operation Policies for Different Levels of Reservoir Aggregation models in the Long Term Hydrothermal Scheduling.
A. Philpott, University of Auckland - Competition in hydro-dominated electricity markets.

--- Amphi Poisson : Contributed Session : UNIT-COMMITMENT (1/2) ---
A. Bialecki, EDF - Intra-Day Problem and Group Sparsity.
F. D’Andreagiovanni, Zuse-Institut Berlin (ZIB) & Technical University Berlin, Germany - A Unified View on Tight Formulations for the Unit Commitment Problem with Optimal Transmission Switching.
C. Cardozo, EDF R&D / SUPELEC - Frequency Constrained Unit Commitment.

--- Amphi Painlevé : Contributed Session : NUCLEAR ---
C. Pira, LIPN, Université Paris 13 - Column generation for an electricity production planning problem with stochastic outage durations.
B. Detienne, Team ReAlOpt, Inria, IMB, Université de Bordeaux - Extended formulations for robust maintenance planning at power plants.
R. Cada, University of West Bohemia, Czech Republic - Using Topology for Nuclear Fuel Reloading Pattern Optimization.

--- Amphi Curie : Contributed Session : OPTIMAL CONTROL ---
F. Silva, XLIM, Université de Limoges - On the asymptotic behavior of stochastic optimal control problems governed by stochastic differential equations submitted to small perturbations.
J. F. Bonnans, CMAP, Ecole Polytechnique - Second order necessary optimality conditions in Pontryagin form for stochastic optimal control problems.

--- Amphi Poisson : Invited Session : RECENT ADVANCES ON CONTINUOUS RANDOMIZED BLACK-BOX OPTIMIZATION (1/2) ---
A. Auger, INRIA Saclay, LRI University Paris-Sud - Towards a Complexity Theory for Black-Box Optimization.
A. Auger, INRIA Saclay, LRI University Paris-Sud - Handling Inexactness in Nondifferentiable Optimization: a Computational Comparison.
P. Felliou, IRT-SystemX/Supelec - A Bayesian subset simulation approach to constrained global optimization of expensive-to-evaluate black-box functions.
A. Auger, INRIA Saclay, LRI University Paris-Sud - Recent Advances in Continuous Randomized Black-Box Optimization: an Overview.
Thursday 30th October 2014 - Morning Sessions

--- Amphi Sauvy : Invited Session : COMPLEXITY OF LINEAR PROGRAMMING AND GAMES (1/3) ---
B. Scherrer, INRIA - Improved and Generalised Upper Bounds on the Complexity of Policy Iteration.
M. Akian, INRIA and CMAP - Complexity of policy iteration for stochastic zero-sum games.

--- Amphi Faurre : Invited Session : STOCHASTIC OPTIMIZATION (2/2) ---
Applications : Energy Management
P. Carpentier, ENSTA ParisTech, UMA - Chance-constrained optimal management of a hydropower dam.
A. Waserhole, SunR SmE - ENSTA - SunHydrO : Pumped-storage for an improved renewable energy integration. Contributing to the spinning reserve.

--- Amphi Painlevé : Invited Session : ENERGY MARKETS ---
E. Pierre, EDF R&D - Capital Investment and Liquidity Management with Collaterized debt.
I. Ben Tahar, Université Paris Dauphine - A mean Field Approach to technological transition.
P. Tukdjev - Approximating backward stochastic differential equations with Malliavin weights and least-squares regression.

--- Amphi Poisson : Invited Session : RECENT ADVANCES ON CONTINUOUS RANDOMIZED BLACK-BOX OPTIMIZATION (2/2) ---
T. Glasmachers, Ruhr-Universität Bochum, Germany - Natural Evolution Strategies for Direct Search.
D. Brockhoff, Inria Lille, Nord Europe - Covariance Matrix Adaptation in Multiobjective Optimization.
Y. Akimoto, Shinshu University - A linear time natural gradient algorithm for black-box optimization in high dimension.

Thursday 30th October 2014 - Afternoon Sessions

--- Amphi Painlevé: Contributed Session : GAME THEORY ---
A. Hochart, CMAP, Ecole Polytechnique and INRIA - Generic uniqueness of the bias vector of mean-payoff zero-sum games.
B. Pauwels, IFP Energies Nouvelles/Université Paul Sabatier - Pareto-based definitions of the optimal value and optimal solutions of a fuzzy program.
V. Perchet, Université Paris-Diderot - New results in bandit problems with applications.

--- Amphi Sauvy : Contributed Session : SCHEDULING ---
B. Kaddour, EDF R&D et E. Thomas, Infotel-ERDF - The operational planning of interventions at ERDF.
S. U. Ngueveu, LAAS-CNRS - Scheduling with non-reversible energy sources.
S. Demasse, CMA, Mines ParisTech - BtrPlace : Flexible VM Management in Data Centers.
S. Chretien, Universite de Franche Comte - Scheduling independent parallel machines with convex programming.

--- Amphi Poisson : Contributed Session : UNIT COMMITMENT (2/2) ---
R. Taktak, LIX-Polytechnique - Optimal Short-term Unit Commitment Problem in Hydro Valleys.
P. Cote, Rio Tinto Alcan - Short-term unit commitment and loading problem of a multi reservoir hydropower system.

--- Amphi Faurre : Contributed Session : INDUSTRY ---
C. Musso, ONERA - Simulation–based algorithms for the optimization of sensor deployment.
P. Girardeau, Artelys - Analyzing the benefits of power infrastructure investments.
A. Top, Arcelik/Istanbul Technical University - Optimization of heating and condensation system of a water-condensed type washer dryer regarding energy consumption.
Friday 31st October 2014 - Morning sessions

--- Amphi Poisson : Contributed Session : CCP - QP ---
A. Lisser, Université de Paris Sud, France - Elliptically distributed joint probabilistic constraints with row dependence.
J. C. Gilbert, INRIA - Implementation of an augmented Lagrangian algorithm for solving convex QPs, which can deal with infeasible problems.
I. M. Bomze, University of Vienna - Narrowing the difficulty gap for the Celsi-Dennis-Tapia problem.

--- Amphi Sauvy : Invited Session : COMPLEXITY OF LINEAR PROGRAMMING AND GAMES (2/3) ---
F. Meunier, Ecole des Ponts, France - Colorful linear programming, Nash equilibrium, and pivots.
Y. Disser, TU Berlin - The Simplex Algorithm is NP-mighty.
X. Allamigeon, INRIA, CMAP Ecole Polytechnique, CNRS - The Tropical Shadow-Vertex Algorithm Solves Mean Payoff Games in Polynomial Time On Average.

--- Amphi Fauvre : Invited Session : OPTIMIZATION TOOLS FOR LARGE SCALE INDUSTRIAL SYSTEMS ---
R. Camy, EDF - Résolution de problèmes inverses de thermique par des algorithmes d’optimisation.
D. Sinoquet, IFP Energies nouvelles - Applications of Derivative Free Optimization methods.
S. Da Veiga, Sneca - Robust multi-objective optimization with surrogate models.
F. Heliodore, Alstom Grid - Methodology for management of power systems emergency situations.

--- Amphi Painlevé : Contributed Session : SMART-GRIDS AND ENERGY ---
O. Sassi, Lorraine University - Integrated model for optimal electric vehicle scheduling and charging in the business context.
B. Heymann, CMAP - Stochastic dynamic programming applied to microgrid management.
F. Piu, University of Bergamo - Transmission lines switching in electric power networks by means of nonlinear stochastic programming.

Friday 31st October 2014 - Afternoon sessions

--- Amphi Painlevé : Contributed Session : LEARNING AND METAHEURISTICS ---
M. Basseur, University of Angers - Toward an Efficient Exploration of Fitness Landscapes.
K. Aissat, LORIA, University of Lorraine - Real-time Ride-sharing with Intermediate Locations.

--- Amphi Fauvre : Contributed Session : HYDROPOWER (2/2) ---
M. Brunet and N. Oudjane, EDF - How to calculate optimal water values under the constraints of the operational process ?
Q. Desreumaux, Sherbrooke University - The Role of Hydrologic Information in Stochastic Dynamic Programming applied to hydropower reservoir management.
S. E. Fleten - Linear decision rules applied to hydropower scheduling.

--- Amphi Poisson : Contributed Session : OPERATIONAL RESEARCH ---
M. C. Costa, ENSTA Paris-Tech and CEDRIC - Cabling optimization of a windfarm and capacitated K-Steiner tree.
R. Mahjoub - Efficient exact algorithms for Graph Partitioning Problems.
D. P. Nguyen, CEA, LIST, Embedded Real Time System Laboratory - Stochastic graph partitioning.

--- Amphi Sauvy : Invited Session : COMPLEXITY OF LINEAR PROGRAMMING AND GAMES (3/3) ---
T. D. Hansen, Stanford University - Strategy iteration is strongly polynomial for 2-player turn-based stochastic games with a constant discount factor.
A. Deza, McMaster University, Ontario, Canada - Optimization algorithms: worst-case behaviour and related conjectures.
Information

Taxi réservation

For booking a taxi, you can use these numbers: Taxis Bleus : 36 09 (+33 1 49 36 10 10) or Taxis G7 : 36 07 (+33 1 47 39 47 39).

In case of difficulties, don’t hesitate to call us at least 2 hours in advance to book it. Please find our telephone number on this page.

How to get to the conference

--- By the RER B or C and bus ---

You can take the RER B or RER C, up to Massy Palaiseau station.

Bus 91-06 or 91-10

From Massy Palaiseau station, take the 91-06 (B, C) or the 91-10 bus, direction Christ (Rn 306) up to Polytechnique Lozère station. (7-8 min around).

You will find public transportation schedules at the conference reception.

Conference adress:
Rond-Point Denfert Rochereau (via Google Maps)
Or Place Gustave Ferrie (via Mappy – Michelin)
[Campus de l’École Polytechnique]
91120 PALAISEAU
How to get to the conference

--- By car : using Nationale N118 ---

--- By car : using AUTOROUTE A6 ---

ROUTE FROM PARIS TO ECOLE POLYTECHNIQUE CAMPUS

Conference site map
Useful information:

--- For the WiFi, please use the following information:

Réseau / Network: VISITEUR
Login: wifi-pgmo-copi14
Mot de passe: 3WKzcBeE0M (Warning: it is a ZERO between the « E0M »).

--- You can park in the “Visitors parking”, indicated in the map above.

By public transport

--- To Charles de Gaulle airport ---

BUS 91-06 or 91-10:
From Polytechnique Lozere station, take the 91-06 (B, C) or the 91-10 bus up to Massy Palaiseau station. (7-8 min around).
You will find public transportation schedules at the conference reception.

From Massy Palaiseau station, take the RER B, direction Charles de Gaulle 2, up to Charles de Gaulle 1 or 2 station, depending on your destination.

--- To Orly ---

BUS 91-06 or 91-10:
From Polytechnique Lozere station, take the 91-06 (B, C) or the 91-10 bus up to Massy Palaiseau station. (7-8 min around).

From Massy Palaiseau station, take the RER B direction Charles de Gaulle 1 & 2 up to Antony station.

OrlyVal
From Antony station, take the Orly Val to Orly Ouest or Orly Sud station (ticket: 9 euros).

By taxi
Taxis Bleus: 36 09 (+33 1 49 36 10 10) - Taxis G7: 36 07 (+33 1 47 39 47 39).