SESO 2016 International Thematic Week "Smart Energy and Stochastic Optimization" May 30 to June 3, 2016

P. Carpentier*, J.-P. Chancelier and M. De Lara†
ENSTA ParisTech and École des Ponts ParisTech

Abstract

Energy companies witness a rapidly changing landscape: increase of intermittent, variable and spatially distributed power sources (wind, sun); expansion of markets and actors at all spatial and temporal scales; penetration of telecom technologies (smart grids). These new factors impact the practice of optimization. Following SESO 2014 and SESO 2015, the 3d International Thematic Week *Smart Energy and Stochastic Optimization* (SESO 2016) will take place in Paris from May 30 to June 3, 2016. SESO 2016 will be devoted to stochastic optimization, decentralized optimization and their applications to the management of new energy systems. The Week alternates courses, tutorials, scientific workshops and an industry day; it is aimed at a mixed public, in academy and in industry. The academic organizers are ENSTA ParisTech and École des Pontes ParisTech, with the financial support of the Gaspard Monge Program for Optimization and operations research (PGMO).

Link: `http://cermics.enpc.fr/~delara/SESO/SESO2016/SESO2016/`

Registration: `http://goo.gl/forms/GcwN2IlFTX`

*pierre.carpentier@ensta-paristech.fr
†delara@cermics.enpc.fr

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1 Monday 30 May 2016:
— at ENSTA ParisTech

- Title: " Energy Markets Operations with Renewable Energies "
- Location: ENSTA ParisTech, Palaiseau, France

How to get there:
https://www.ensta-paristech.fr/en/getting-ensta-paristech

- Planning:
  - Morning
    - 08:30–09:00 - Welcome coffee
    - 09:00–9h15 - Pierre Carpentier, Jean-Philippe Chancelier and Michel De Lara
      "Opening"
    - 09:15–10h00 - Yannick Jacquemart (RTE R&D and Innovation Director)
      "An Overview of Energy Markets in Europe"
    - 10h00–10h30 - break
    - 10h30–11h15 - Anes Dallagi (EDF)
      "What's New on Great Britain Electricity Markets"
    - 11:15–12h00 - Clémence Alasseur (EDF R& D)
      "A structural model for electricity spot and forward for coupled markets"
  - Afternoon
    - 13h30–14h15 - Andrew Philpott (University of Auckland)
      "Modelling Wholesale Prices in Hydro-Dominated Electricity Systems Using Stochastic Optimization"
    - 14h15–15h00 - Teemu Pennanen (King's College London)
      "Asset Valuation via Stochastic Optimization"
    - 15h00–15h30 - break
    - 15h30–16h15 - Guillaume Erbs (Engie)
      "Electricity Market Clearing in the Presence of Increasing Uncertainty"
    - 16h15–17h00 - Benjamin Heymann (École polytechnique)
      "Mechanism Design for Electricity Markets"

2 Tuesday 31 May 2016:
— at ENSTA ParisTech

- Title: “ Decentralized Optimization, Game Theory and Markets ”
- Location: ENSTA ParisTech, Palaiseau, France

`How to get there:`
`https://www.ensta-paristech.fr/en/getting-ensta-paristech`

- Planning:
  - Morning
    * 08:30–09:00 - Welcome coffee
    * 09:00–9h45 - Hélène Le Cadre (UMA, ENSTA ParisTech)
      “Dealing with Information in New Energy Systems”
    * 09:45–10h30 - Luce Brotcorne (INOCS, INRIA Lille - Nord Europe)
      “A Bilevel Approach for Energy Pricing Problems”
    * 10h30–11:00: break
    * 11:00–11h45 - Alejandro Jofre (CMM, Universidad de Chile)
      “Mechanism Design and Allocation Algorithms for Energy Markets with Piecewise Linear Costs and Externalities”
    * 11:45–12h30 - R. Tyrrell Rockafellar (University of Washington, Seattle, USA)
      “Stochastic Variational Inequalities and Equilibrium”
  - Afternoon: free

3 Wednesday 1 June 2016: Tutorials — at ENPC ParisTech

- Title: "Tutorials"
- Location: amphitheater Navier, Bâtiment Carnot, École des Ponts ParisTech (ENPC), Champs sur Marne, France

  `How to get there: http://www.enpc.fr/en/school-practice`

- Planning:
  - Morning: R. Tyrrell Rockafellar (University of Washington, Seattle, USA)
    "Risk, Optimization and Statistics"
    * 08:30–09:00 - Welcome coffee
    * 09:00–10h30 -
    * 10h30–11:00 - break
    * 11:00–12h30 -
  - Afternoon: Darinka Dentcheva (Stevens Institute of Technology, USA) and Andrzej Ruszczyński (Rutgers University, USA)
    "Risk-Averse Optimization and Control"
    * 14h00–15h30 -
    * 15h30–16h00 - break
    * 16h00–17h30 -

4 Thursday 2 June 2016: Industry Day on Optimization for Smart Grids — at ENPC ParisTech

- Title: "Optimization for Smart Grids"
- Location: amphitheater Navier, Bâtiment Carnot, École des Ponts ParisTech (ENPC), Champs sur Marne, France

  `How to get there: http://www.enpc.fr/en/school-practice`

- Planning:
  - Morning
    - 08:30–09:00 - Welcome coffee
    - 09:00–9h30 - François Pacaud (Efficacity and Cermics, ENPC ParisTech)
      "Optimal Control of a Domestic Microgrid with Combined Heat and Power Generator"
    - 09:30–10h00 - Tristan Rigaut (Efficacity and Cermics, ENPC ParisTech)
      "Optimization for Energy Efficiency and Climate Control of a Subway Station Microgrid"
    - 10h00–10:30 - Olivier Beaude, Riadh Zorgati (EDF R& D)
      "Decentralized Energy Management and Pricing: Modeling, Simulation and Optimization"
    - 10h30–11:00 - break
    - 11:00–11h30 - Francis Sourd and Ariel Waserhole (Sun'R)
      "Renewable Energy Aggregator: How to Handle Market Risk"
    - 11:30–12h00 - Carlos Carrejo (Total New Energies)
      "Side Aggregation: Economical and Technical Issues at Total"
  - Afternoon
    - 14h00–14h30 - Michel De Lara (Cermics, ENPC ParisTech)
      "A Research Agenda for Optimization in the Energy Transition"
    - 14h30–15h30 - Roundtable: *Optimization for the Energy Transition*
      - Davy Marchand-Maillet, Director of operations, Sun'R Smart Energy
      - Philippe Ricoux, scientific direction, Total
      - Marc Ringeisen, Chief of OSIRIS Department, EDF R & D

5 Friday 3 June 2016: Risk, Optimization and Big Data — at ENPC ParisTech

- Title: "Risk, Optimization and Big Data"
- Location: amphitheater Navier, Bâtiment Carnot, École des Ponts ParisTech (ENPC), Champs sur Marne, France

  `How to get there: http://www.enpc.fr/en/school-practice`

- Planning:
  - Morning: "Risk and Optimization"
    - 08:30–09:00 - Welcome coffee
    - 09:00–9h45 - Andrzej Ruszczyński (Rutgers University, USA)
      "Risk-Averse Control of Partially Observable Systems"
    - 09:45–10h30 - Darinka Dentcheva (Stevens Institute of Technology, USA)
      "Risk-Averse Control of Continuous-Time Markov Chains"
    - 10h30–11:00 - break
    - 11:00–11h30 - Vincent Leclère (Cermics, ENPC ParisTech)
      "Time-Consistency and Nested Decomposition for Risk Measures and Dynamic Optimization"
    - 11:30–12h00 - Henri Gérard (Cermics, ENPC ParisTech)
      "Decomposition Methods for Stochastic Team Optimization Under Risk"
  - Afternoon: "Optimization and Big Data"
    - 14h00–14h45 - Erwan Le Pennec (École Polytechnique)
      "The Importance of Optimization in Big Data"
    - 14h45–15h30 - Guillaume Obozinski (LIGM, ENPC ParisTech)
      "Fast Algorithms to Learn Piecewise Constant Functions on Large Graphs"
    - 15h30–16h15 - Emilie Chouzenoux (UPEM, Université Paris-Est)
      "A Stochastic Majorize-Minimize Subspace Algorithm with Application to Filter Identification Problems"