

SESO 2017 International Thematic Week  
“Smart Energy and Stochastic Optimization”  
May 30 to June 1, 2017

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**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, SESO 2015 and SESO 2016, the 4th International Thematic Week *Smart Energy and Stochastic Optimization* (SESO 2017) will take place in Paris from May 30 to June 1, 2017. SESO 2017 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 Ponts ParisTech, with the support of the Gaspard Monge Program for Optimization and operations research (PGMO) and of the Institute for energy transition EFFICACITY.

Link: <http://cermics.enpc.fr/~delara/SESO/SES02017/SES02017/>

Registration: <https://enquetes.enpc.fr/index.php/252169/lang-en>

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# 1 Tuesday 30 May 2017: Optimization and Energy — at ENSTA ParisTech

- Title: “Optimization and Energy”
- Location: ENSTA ParisTech, Palaiseau, France

How to get there:

<https://www.ensta-paristech.fr/en/getting-ensta-paristech>

- Planning:
  - Morning (Optimization, Games and Renewable Energy)
    - \* 08h30–09h00 - Welcome coffee
    - \* 09h00–9h45 - Robin Girard (Persee, Mines ParisTech)  
*”Fast Legendre transform for quasi-linear time optimisation of storage in the electric system”*
    - \* 09h45–10h30 - Michel De Lara (Cermics, ENPC ParisTech)  
*”Games in intrinsic form”*
    - \* 10h30–11h00 - Break
    - \* 11h00–11h45 - Yezekael Hayel (Université d’Avignon)  
*”Decentralized energy problems with large number of customers”*
    - \* 11h45–12h30 - Henri Gérard (Cermics, École des Ponts ParisTech)  
*”Computing risk averse equilibrium in incomplete markets”*
  - Afternoon
    - \* 14h15–15h00 - Oscar Carreño (RightSide, Colombia) and Diego Mejia (Universidad de Antioquia, Colombia)  
*”RightSide”* and *”Energy-related optimization challenges and approaches in Colombia”*
    - \* 15h00–15h45 - Teemu Pennanen (King’s College, London)  
*”Financial valuation of storages and delivery contracts”*

## 2 Wednesday 31 May 2017: Industry Day on Optimization for Smart Grids — at ENPC ParisTech

- Title: “Optimization for Smart Grids”
- Location: amphitheater Caquot II, Building Coriolis, École des Ponts ParisTech (ENPC), Champs sur Marne, France

How to get there: <http://en.enpc.fr/en/school-practice>

- Planning:
  - Morning
    - \* 08h30–09h00 - Welcome coffee
    - \* 09h00–9h30 - François Pacaud (Efficacity and Cermics, ENPC ParisTech)  
*”Optimal energy management of a urban district”*
    - \* 09h30–10h00 - Tristan Rigaut (Efficacity and Cermics, ENPC ParisTech)  
*”Optimal energy management of a subway station”*
    - \* 10h00–10h30 - Break
    - \* 10h30–11h00 - Baptiste Rossi (ENGIE)  
*”Optimization of multifluid microgrids, the REIDS project in Singapore”*
    - \* 11h00–11h30 - Olivier Beaudé (EDF R& D)  
*”Integrating flexible customers in decentralized electricity systems: a few examples from EDF research projects”*
    - \* 11h30–12h00 - Manuel Ruiz (RTE) )  
*”Global optimization of the optimal power flow problem”*
  - Afternoon
    - \* 13h30–14h00 - Pierre Haessig (CentraleSupélec, IETR, Rennes)  
*”Energy storage control with aging limitation”*
    - \* 14h00–14h30 - Benjamin Heymann (Criteo)  
*”Long term battery ageing control: introducing the adaptative weights algorithm”*
    - \* 14h30–15h00 - Nathanael Beeker  
*”An optimization algorithm for load-shifting of large sets of electric hot water tanks”*
    - \* 15h00–15h30 - Break
    - \* 15h30–16h00 - Laurence Grand-Clément and Sezin Afsar (PersEE)  
*”Power to gas real time optimisation”*
    - \* 16h00–16h30 - Vincent Leclère (Cermics, École des Ponts ParisTech)  
*”Stochastic Dual Dynamic Programming (SDDP) software”*
    - \* 16h30–18h00 - Vincent Leclère (Cermics, École des Ponts ParisTech)  
*”SDDP software computer session”*

### 3 Thursday 1 June 2017: Optimization and Energy — at ENPC ParisTech

- Title: “Optimization and energy”
- Location: amphitheater Caquot II, Building Coriolis, École des Ponts ParisTech (ENPC), Champs sur Marne, France

How to get there: <http://en.enpc.fr/en/school-practice>

- Planning:
  - Morning
    - \* 08h30–09h00 - Welcome coffee
    - \* 09h00–9h45 - René Henrion (Weierstrass Institute, Berlin)  
*“Subdifferential Characterization of Gaussian probability functions”*
    - \* 09h45–10h30 - Holger Heitsch (Weierstrass Institute, Berlin)  
*“A probabilistic approach to optimization problems in gas transport networks”*
    - \* 10h30–11h00 - Break
    - \* 11h00–11h45 - Werner Römisch (Humboldt University, Berlin)  
*“Scenario generation in stochastic programming with application to energy systems”*
    - \* 11h45–12h30 - Georg Pflug (University of Vienna)  
*“Model uncertainty in energy optimization”*
  - Afternoon
    - \* 14h00–14h45 - Didier Aussel (Université de Perpignan)  
*“Two steps process for best response and equilibrium calculus on electricity markets: theoretical and algorithmic point of views”*
    - \* 14h45–15h30 - Andrew Philpott (University of Auckland)  
*“Applications of SDDP in electricity markets with hydroelectricity”*

## 4 Friday 2 June 2017:

### Talk and PhD Defense — at Turing building, Inria Palaiseau

- Location: Place : Amphithéâtre Sophie Germain Bâtiment Turing - École Polytechnique  
Route de Saclay, 91128 Palaiseau Cedex France

How to get there: <http://en.enpc.fr/en/school-practice>

- Planning:

- Morning

- \* 10h30–11h30 - Danny Ralph (University of Cambridge, Judge Business School, UK)  
*“Keeping Options Open When Just One Can Be Exercised: When to Pick a Winner?”*

- Afternoon

- \* 14h00–17h00 - PhD defense of Faisal Wahid  
*“River Optimization: short-term hydro-bidding under uncertainty”*
- \* PhD advisors:
  - J.Frédéric. Bonnans (CMAP, École Polytechnique and Inria)
  - Andrew Philpott (University of Auckland, NZ)
- \* Members of the jury:
  - Stein-Erik Fleten (Norwegian University of Science and Technology, Trondheim)
  - Michel De Lara (Cermics, École des Ponts ParisTech)
  - Danny Ralph (Cambridge Judge Business School, Cambridge University, UK)
  - Claudia d’Ambrosio (LIX, École Polytechnique)
  - Geoffrey Pritchard (University of Auckland, NZ)