Anthony Papavasiliou

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anthony.papavasiliou@uclouvain.be, http://perso.uclouvain.be/anthony.papavasiliou/public_html/

PROFESSIONAL EXPERIENCE

Université catholique de Louvain January 2013 - Present
Francqui Research Professor and ENGIE Chair holder, Center for Operations Research and Econometrics (CORE) and department of Mathematical Engineering, Université catholique de Louvain.

University of California, Berkeley October 2011 - December 2012
Post-doctoral researcher in Industrial Engineering and Operations Research

Consulting
N-SIDE, Pacific Gas and Electric, SunRun, Quantil

Federal Energy Regulatory Commission, Washington DC June - August 2009
Research intern in division of policy development (supervisor: Dr. Richard P. O'Neill)

XEROX Palo Alto Research Center, CA June - August 2008
Research intern (supervisors: Dr. Haitham Hindi, Dr. Daniel Greene)

Energy, Environment and Economics Modeling Laboratory, National Technical University of Athens, Greece June - August 2007
Research intern (supervisor: Professor Pantelis Capros)

EDUCATION

University of California, Berkeley December 2007 - October 2011
Ph.D. in Industrial Engineering and Operations Research

University of California, Berkeley September 2006 - December 2007
M.Sc. in Industrial Engineering and Operations Research

National Technical University of Athens, Greece September 2001 - 2006
B.Sc. in Electrical and Computer Engineering (5 year curriculum)

THESIS

Coupling Renewable Energy Supply with Deferrable Demand
Advisor: Professor Shmuel S. Oren
Committee members: Professor Phil Kaminsky, Professor Duncan Callaway
This work studies the potential of demand-side flexibility to mitigate the impact of large-scale renewable energy integration on power system operations and generation reserve requirements.

PUBLICATIONS AND PATENTS

Peer-reviewed journal publications

Accepted

[J18] H. Le Cadre, I. Mezghani, A. Papavasiliou, "A Game-Theoretic Analysis of Transmission-Distribution System Operator Coordination", to appear in *European Journal of Operations Research*.

[J17] K. De Vos, N. Stevens, O. Devolder, A. Papavasiliou, B. Hebb, J. Matthys-Donnadieu, "Dynamic Dimensioning Approach for Operating Reserves: Proof of Concept in Belgium", Energy Policy, vol. 124, pp. 272-285, January 2019.

[J16] S. Camelo, A. Papavasiliou, L. de Castro, A. Riascos, S. Oren, "A Structural Model to Evaluate the Transition from Self-Commitment to Centralized Unit Commitment", Energy Economics, vol. 75, pp. 560-572, 2018.

[J15] A. Papavasiliou, Y. Smeers, G. Bertrand, "An Extended Analysis on the Remuneration of Capacity under Scarcity Conditions", Economics of Energy and Environmental Policy, vol. 7, no. 2, 2018.

[J14] H. Hoeschle, H. Le Cadre, Y. Smeers, A. Papavasiliou, R. Belmans, "An ADMM-based Method for Computing Risk-Averse Equilibrium in Capacity Markets", IEEE Transactions on Power Systems, vol. 33, no. 5, pp. 4819-4830, September 2018.

[J13] A. Papavasiliou, Y. Mou, L. Cambier, D. Scieur, "Application of Stochastic Dual Dynamic Programming to the Real-Time Dispatch of Storage under Renewable Supply Uncertainty", IEEE Transactions on Sustainable Energy, vol. 9, no. 2, pp. 547-558, 2018.

[J12] A. Papavasiliou, "Analysis of Distribution Locational Marginal Prices", IEEE Transactions on Smart Grids, vol.9, no. 5, pp. 4872-4882, September 2018.

[J11] A. Papavasiliou, Y. Smeers, "Remuneration of Flexibility under Conditions of Scarcity: A Case Study of Belgium", the Energy Journal, vol. 38, no. 6, pp. 105-135, 2017.

[J10] I. Aravena, A. Papavasiliou, "Renewable Energy Integration in Zonal Markets", IEEE Transactions on Power Systems, vol. 32, no. 2, pp. 1334-1349, March 2017.

[J9] J. Han, A. Papavasiliou, "The Impacts of Transmission Topology Control on the European Electricity Network", IEEE Transactions on Power Systems, vol. 31, no. 1, pp. 496-507, January 2016.

[J8] H. Le Cadre, A. Papavasiliou, Y. Smeers. "Wind Farm Portfolio Optimization under Network Capacity Constraints", European Journal of Operations Research, vol. 247, no. 2, pp. 560-574, December 2015.

[J7] J. Han, A. Papavasiliou, "Congestion Management through Topological Corrections: A Case Study of Central and Western Europe (CWE)", Energy Policy, vol. 86, pp. 470-482, November 2015.

[J6] A. Papavasiliou, Y. He and A. Svoboda, "Self-Commitment of Combined Cycle Units under Electricity Price Uncertainty", IEEE Transactions on Power Systems, vol. 30, no. 4, pp. 1690-1701, July 2015.

[J5] A. Papavasiliou, S. S. Oren, B. Rountree, "Applying High-Performance Computing to Multi-Area Stochastic Unit Commitment for Renewable Energy Integration", IEEE Transactions on Power Systems, vol. 30, no. 3, pp. 1109-1120, May 2015.

[J4] A. Papavasiliou and S. S. Oren, "Large-Scale Integration of Deferrable Demand and Renewable Energy Sources in Power Systems", IEEE Transactions on Power Systems, vol. 29, no. 1, pp. 489-499, January 2014.

[J3] A. Papavasiliou and S. S. Oren, "Multi-Area Stochastic Unit Commitment for High Wind Penetration in a Transmission Constrained Network", Operations Research, vol. 61, no. 3, pp. 578-592, May/June 2013.

[J2] A. Papavasiliou, S. S. Oren and R. P. O'Neill, "Reserve Requirements for Wind Power Integration: A Scenario-Based Stochastic Programming Framework", IEEE Transactions on Power Systems, vol. 26, no. 4, pp. 2197-2206, November 2011.

[J1] R. P. O'Neill, K. Hedman, E. Kraal, A. Papavasiliou and S. S. Oren, "Economic Analysis of the N-1 Reliable Unit Commitment and Transmission Switching Problem Using Duality Concepts", Energy Systems, vol. 1, no. 2, pp. 165-195, May 2010.

Submitted

[JS3] I. Aravena, A. Papavasiliou, Y. Smeers, "Transmission Capacity Allocation in Zonal Electricity Markets", under review in *Operations Research*.

[JS2] Y. Mou, A. Papavasiliou, P. Chevalier, "A Bi-Level Optimization Formulation of Priority Service Pricing", under review in *IEEE Transactions on Power Systems*.

[JS1] I. Aravena, A. Papavasiliou, "An Asynchronous Distributed Algorithm for Solving Stochastic Unit Commitment", under review in *Mathematical Programming Computation*.

Book chapters

[B2] A. Papavasiliou, A. Papalexopoulos, S. Oren, chapter in "Design of the Electricity Market(s) of the Future", European University Institute, edited by Nicolo Rosetto, ISBN: 978-92-9084-577-5.

[B1] I. Aravena, A. Papavasiliou, A. Papalexopoulos, "A Distributed Computing Architecture for the Large-Scale Integration of Renewable Energy and Distributed Resources in Smart Grids", *chapter in "Recent Progress in Parallel and Distributed Computing" (ISBN: 978-953-51-3316-2)*.

Peer-reviewed conference publications

Accepted

[C23] G. Bertrand, A. Papavasiliou, "Trading Strategies for Continuous Intra-day Markets", 15th IEEE International Conference on the European Energy Market, 2018.

[C22] I. Boukas, D. Ernst, A. Papavasiliou, B. Cornelusse, "Intra-Day Bidding Strategies for Storage Devices Using Deep Reinforcement Learning", 15th IEEE International Conference on the European Energy Market, 2018.

[C21] I. Mezghani, A. Papavasiliou, H. Le Cadre, "A Generalized Nash Equilibrium Analysis of Electric Power Transmission-Distribution Coordination", ACM e-Energy 2018: The Ninth International Conference on Future Energy Systems, Karlsruhe, Germany, June 12-15, 2018.

[C20] Y. Mou, A. Papavasiliou, P. Chevalier, "Application of Multilevel Demand Subscription Pricing for Mobilizing Residential Demand Response in Belgium", EnergyCon 2018.

[C19] Y. Mou, A. Papavasiliou, "Long-Run Cost-Benefit Analysis of Demand Response for the European System", IEEE PES General Meeting, 2018.

[C18] T. Kaneda, B. Losseau, A. Papavasiliou, D. Scieur, L. Cambier, P. Henneaux, N. Leemput, "Optimal Management of Storage for Offsetting Solar Power Uncertainty Using Multistage Stochastic Programming", IEEE Power Systems Computation Conference, 2018.

[C17] A. Papavasiliou, I. Mezghani, "Coordination Schemes for the Integration of Transmission and Distribution System Operations", IEEE Power Systems Computation Conference, 2018.

[C16] G. Bertrand, A. Papavasiliou, "Optimal Dispatch of Wind Farms Facing Market Prices", 14th International Conference on the European Energy Market.

[C15] Y. Mou, A. Papavasiliou, P. Chevalier, "Application of Priority Service Pricing for Mobilizing Residential Demand Response in Belgium", 14th International Conference on the European Energy Market.

[C14] A. Papavasiliou, Y. Smeers, "Energy-Only Markets with Deferrable Demand", 12th International Conference on the European Energy Market, Lisbon, Portugal, May 19-22, 2015.

[C13] Y. Vardanyan, A. Papavasiliou, M. R. Hesamzadeh, "Hydropower Producer Day-Ahead Market Strategic Offering Using Stochastic Bi-Level Optimization", best student paper award of the IAENG International Conference on Operations Research, Hong Kong, March 18-20, 2015.

[C12] A. Aravena, A. Papavasiliou, "A distributed asynchronous algorithm for the two-stage stochastic unit commitment problem", IEEE Power and Energy Society General Meeting, Denver, CO, July 26-30, 2015.

[C11] H. Le Cadre, I. Aravena, A. Papavasiliou, "Solar PV Power Forecasting Using Extreme Machine Learning and Experts Advice Fusion", European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, Bruges, Belgium, April 22-24, 2015.

[C10] A. Papavasiliou, S. S. Oren, I. Aravena, "Stochastic Modeling of Multi-Area Wind Production", 48th Annual Hawaii International Conference on System Sciences, Kauai, HI, USA, January 5 - 8, 2015.

[C9] A. Papavasiliou, S. S. Oren, Z. Yang, P. Balasubramanian, K. Hedman, "An Application of High Performance Computing to Transmission Switching", IREP Bulk Power System Dynamics and Control Symposium, Rethymnon, Greece, August 25 - 30 2013.

[C8] A. Papavasiliou, S. S. Oren, "A Comparative Study of Stochastic Unit Commitment and Security-Constrained Unit Commitment Using High Performance Computing", European Control Conference, Zurich, Switzerland, July 17 - 19, 2013.

[C7] A. Papavasiliou and S. S. Oren, "Integration of Contracted Renewable Energy and Spot Market Supply to Serve Flexible Loads", Congress of the International Federation of Automatic Control, Milano, Italy, August 2011.

[C6] A. Papavasiliou, H. Hindi and D. Greene, "Market-Based Control Mechanisms for Electric Power Demand Response", Conference on Decision and Control, Atlanta, GA, December 2010.

[C5] A. Papavasiliou and S. S. Oren, "Supplying Renewable Energy to Deferrable Loads: Algorithms and Economic Analysis", IEEE Power and Energy Society General Meeting, Minneapolis, MN, July 2010.

[C4] A. Papavasiliou, Y. Chen and S. S. Oren, "Environmental Regulation in Transmission Constrained Electricity Markets", IEEE Power and Energy Society General Meeting, Calgary, Canada, July 2009.

[C3] A. Papavasiliou, P. Kaminsky, I. Sidhu and S. S. Oren, "Renewable Energy Supply for Electric Vehicle Operations in California", 32nd IAEE International Conference, San Francisco, CA, June 2009.

[C2] A. Papavasiliou and S. S. Oren, "Coupling Wind Generators with Deferrable Loads", IEEE Energy 2030 conference, Atlanta, GA, November 2008.

[C1] A. Papavasiliou, S. Papathanassiou, S. Manias and G. Demetriades, "Control of a Voltage Source Inverter Connected to the Grid via an LCL Filter", Power Electronics Specialists Conference, Orlando, FL, June 2007.

Submitted

[CS4] I. Mezghani, A. Papavasiliou, "A Mixed-Integer Second Order Cone Program for Transmission-Distribution System Optimization", PowerTech 2019.

[CS3] G. Bertrand, A. Papavasiliou, "Reinforcement-Learning Based Threshold Policies for Continuous Intraday Electricity Market Trading", IEEE PES General Meeting, 2019.

[CS2] L. Van Hoorebeeck, P.-A. Absil, A. Papavasiliou, "MILP-Based Algorithm for the Global Solution of Dynamic Economic Dispatch Problems with Valve-Point Effects", IEEE PES General Meeting, 2019.

[CS1] C. Gerard, A. Papavasiliou, "A Comparison of Priority Service versus Real-Time Pricing for Enabling Residential Demand Response", IEEE PES General Meeting, 2019.

Technical reports

[TR3] A. Papavasiliou, S. S. Oren, M. Junca, A. Dimakis, T. Dickhoff, "Coupling Wind Generators with Deferrable Loads", 2008 CITRIS IT for Technology 3rd place prize, 2008 Big Ideas Energy and Environmental Innovation competition 2nd place prize.

[TR2] D. Crabtree, T. Faney, K. Koudigkelis, A. Papavasiliou, I. Sidhu, P. Kaminsy, B. Tenderich, "Optimal Charging of Electric Vehicles", Center for Entrepreneurship and Technology Technical Brief No. 2009.6.v.1.1, September 11, 2009.

[TR1] A. Papavasiliou, A. Lee, P. Kaminsky, I. Sidhu, B. Tenderich, S. Oren, "Electric Power Supply and Distribution for Electric Vehicle Operations", Global Venture Lab Technical Brief #2008.2.v.1, November 21, 2008.

Theses

[T2] A. Papavasiliou, "Coupling Renewable Energy Supply with Deferrable Demand", PhD thesis, University of California at Berkeley, October 2011.

[T1] A. Papavasiliou, "Control of a Voltage Source Inverter Connected to the Grid via an LCL Filter", undergraduate thesis (in Greek), National Technical University of Athens, Greece, July 2006.

Patents

[P1] Papavasiliou, Anthony, Haitham Ali Salem Hindi, and Daniel H. Greene. "Technique for aggregating an energy service." U.S. Patent No. 8,818,889. 26 Aug. 2014.

AWARDS

Francqui Foundation Research Professorship 2018-2021
Three-year research sabbatical awarded to a single faculty of UCL once every 2 years by the Francqui Foundation

ERC Starting Grant step 2 2017
€80,000 grant awarded by the Université catholique de Louvain for advancing to step 2 of the European Research Council starting grant

Bauchau Prize 2017
€150,000 grant awarded by the Bauchau family for project on "Using Analytics and Optimization to Enable Africa to Leapfrog to the Energy Systems of the Future"

Best publication in Energy, INFORMS 2015
"Multi-Area Stochastic Unit Commitment for High Wind Penetration in a Transmission Constrained Network", Operations Research, vol. 61, no. 3, pp. 578-592, 2013.

FUNDING

[10] EPOC 2030-2050
Sponsor: Belgian energy transition funds
Duration: October 2018 - October 2021
Amount: 80,000 €

[9] Francqui Foundation Research Professorship
Sponsor: Francqui foundation
Duration: September 2018 - September 2021
Amount: 120,000 €

[8] ERC Starting Grant step 2 finalist funding
Sponsor: Université catholique de Louvain Fonds de la Recherche Scientifique (FSR)
Duration: September 2017 - August 2019
Amount: 80,000 €

[7] "Using Analytics and Optimization to Enable Africa to Leapfrog to the Energy Systems of the Future"
Sponsor: Bauchau family
Amount: 150,000 €

[6] "Coordinated Scheduling of Transmission and Distribution in Electric Power Systems"
Sponsor: ENGIE
Duration: October 2016 - September 2020
Amount: 138,000 €

[5] "Modeling the Value of Flexibility at Sub-Hourly Operating Time Scales"

Sponsor: Electrabel
Duration: January 2016 - December 2017
Amount: 153,000 €

[4] "ColorPower"
Sponsor: Electrabel
Duration: January 2016 - December 2018
Amount: 230,000 €

[3] "Study on the Remuneration of Production in Situations of Scarcity"
Sponsor: Belgian Electricity and Gas Regulatory Commission (CREG)
Duration: January 2015 - December 2016
Amount: 46,625 €

[2] ENGIE Chair on "Energy Economics and Management of Energy Risk"
Sponsor: ENGIE
Duration: January 2013 - February 2015
Amount: 540,000 €

[1] "Application of High Performance Computing in Short-Term Scheduling of Electric Power Systems Under Uncertainty"
Sponsor: Université catholique de Louvain
Duration: November 2013 - October 2017
Amount: 147,500 €

MEMBERSHIPS

PSERC Junior adjunct researcher 2016-present
PSERC (http://pserc.wisc.edu/home.aspx) is a university-industry collaboration funded by the United States National Science Foundation (NSF)

University of Brescia PhD program in Analytics, Economics and Management 2017-present
Member of the scientific board

TEACHING EXPERIENCE

Instructor Fall 2017
Project in Mathematical Engineering, undergraduate course in UCL department of Mathematical Engineering.

Instructor Spring 2017
Scientific Computing, graduate course in UCL department of Mathematical Engineering.

Instructor Spring 2013-2016
Operations Research, graduate course in UCL department of Mathematical Engineering.

Instructor Spring 2013-2016
Quantitative Energy Economics, graduate course in UCL department of Mathematical Engineering.

Instructor Fall 2016
Project in Mathematical Engineering, graduate course in UCL department of Mathematical Engineering.

Instructor Fall 2016
Seminar of Applied Mathematics, graduate course in UCL department of Mathematical Engineering.

Instructor Fall 2015
Quantitative Project, graduate course in UCL Louvain School of Management.

Erasmus+ Instructor Spring 2016
Economics of Energy Markets, 8-hour graduate course in the National Technical University of Athens, Greece.

Erasmus+ Instructor Fall 2015
Mathematical Programming, 8-hour undergraduate course in the National Technical University of Athens, Greece.

Graduate Student Instructor Spring 2009
Nonlinear Programming, graduate course in UC Berkeley IEOR department.

Graduate Student Instructor Spring 2008
Decision Analysis, upper division course in UC Berkeley IEOR department.

PRESENTATIONS

2018

- Georgia Tech Workshop on Energy Systems and Optimization, *Transmission Capacity Allocation in Zonal Electricity Markets*, Atlanta, GA, USA, November 16, 2018.
- INFORMS Annual Meeting, *Solving Large-scale Unit Commitment with Asynchronous Parallel Decomposition*, Phoenix, AZ, USA, November 6, 2018.
- INFORMS Annual Meeting, *Market Design Considerations for Scarcity Pricing*, Phoenix, AZ, USA, November 5, 2018.
- INFORMS Annual Meeting, *A Bilevel Optimization Formulation of Priority Service Pricing*, Phoenix, AZ, USA, November 5, 2018.
- 20th Power System Computation Conference, *Optimal Management of Storage for Offsetting Solar Power Uncertainty using Multistage Stochastic Programming*, Dublin, Ireland, June 15, 2018.
- 20th Power System Computation Conference, *Hierarchical TSO-DSO Coordination*, Dublin, Ireland, June 12, 2018.
- IEEE International Energy Conference (EnergyCon), *A Bi-Level Optimization Formulation of Priority Service Pricing*, Limassol, Cyprus, June 6, 2018.
- Energy Day at CORE, *Market Design Considerations for Scarcity Pricing*, Université catholique de Louvain, Louvain la Neuve, Belgium, April 16, 2018.

2017

- Plenary presentation at Workshop on Intelligence and Flexibility in Future Electricity Markets, *Remuneration of Flexibility through Scarcity Pricing*, Santiago, Chile, November 20, 2017 (invited).
- INFORMS 2017, *Coordination Schemes for the Integration of Transmission and Distribution System Operations*, Houston, TX, USA, October 23, 2017 (invited).
- INFORMS 2017, *Application of Stochastic Dual Dynamic Programming to the Real-Time Dispatch of Storage under Renewable Supply Uncertainty*, Houston, TX, USA, October 23, 2017 (invited).
- Eurelectric, *Market Design for a Decarbonized Electricity Market*, Brussels, Belgium, October 11, 2017 (invited).
- Massachusetts Institute of Technology LIDS talk, *Distributed Optimization of Power System Operations*, Boston, MA, September 20, 2017 (invited).
- IEEE Power and Energy Society General Meeting, *Incentivizing Flexibility in Central and Western Europe*, Chicago, IL, July 19, 2017.
- Eurelectric, *Market Design for a Decarbonized Electricity Market*, Brussels, Belgium, June 7, 2017 (invited).

2016

- National Technical University of Athens, *Multi-Stage Stochastic Economic Dispatch under Renewable Energy Supply Uncertainty*, Athens, Greece, December 23, 2016.
- INFORMS 2016, *Remuneration of Power Generation Capacity in Conditions of Scarcity in Belgium*, Nashville, TN, USA, November 13, 2016.
- University of Cologne Workshop on Transition to Power Systems with Weather-Dependent Generation, *Remuneration of Power Generation Capacity in Conditions of Scarcity in Belgium*, Cologne, Germany, November 7, 2016 (invited).
- Edinburgh University ERGO Seminar, *An Asynchronous Distributed Subgradient Algorithm for Solving Stochastic Unit Commitment*, Edinburgh, Scotland, October 26, 2016 (invited).
- IEEE Power and Energy Society General Meeting, *Remuneration of Power Generation Capacity in Conditions of Scarcity in Belgium*, Boston, MA, July 18, 2016.
- Danish Technical University Summer School on Uncertainty in Electricity Markets and System Operation, *An Asynchronous Distributed Subgradient Algorithm for Solving Stochastic Unit Commitment*, Copenhagen, Denmark, July 6, 2016 (invited).
- Workshop in 19th Power Systems Computation Conference, *Solving Stochastic Unit Commitment at Industrial Scale Using Parallel Computing: A Case Study of Central Western Europe*, Genova, Italy, June 20, 2016 (invited).
- Workshop on Scarcity Pricing, *Remuneration of Capacity in Conditions of Scarcity in Belgium*, Council of European Energy Regulators, Brussels, Belgium, June 17, 2016 (invited).
- Workshop on Analysis and Applications of Stochastic Systems, *Solving Stochastic Unit Commitment In a High Performance Computing Environment*, National Institute for Pure and Applied Mathematics (IMPA), Rio de Janeiro, Brazil, March 31, 2016 (invited).

- Stanford Precourt Energy Institute and Management Science & Engineering seminar, *Managing the Uncertainty of Renewable Resources in Power System Operations*, Stanford University, Palo Alto, CA, February 22, 2016 (invited).

2015

- National Technical University of Athens, *Remuneration of Capacity in Conditions of Scarcity in Belgium*, Athens, Greece, December 4, 2015.
- Innovation in Energy Management conference, *Integrating Deferrable Demand in Electricity Markets*, Université catholique de Louvain, Louvain la Neuve, Belgium, November 19, 2015 (invited).
- INFORMS 2015, *Remuneration of Capacity in Conditions of Scarcity in Belgium*, Philadelphia, PA, November 3, 2015.
- INFORMS 2015 ENRE award ceremony, *Multi-Area Stochastic Unit Commitment for High Wind Penetration in a Transmission Constrained Network*, Philadelphia, PA, November 1, 2015.
- ECORES seminar, *Remuneration of Capacity in Conditions of Scarcity in Belgium*, KU Leuven, Leuven, Belgium, October 26, 2015 (invited).
- IEEE Power and Energy Society General Meeting, *Self-Commitment of Combined Cycle Units*, Denver, CO, July 28, 2015.
- International Symposium in Mathematical Programming, *Integrating Deferrable Demand in Electricity Markets*, Pittsburgh, PA, July 15, 2015.
- 12th International Conference on the European Energy Market, *Energy-Only Markets with Deferrable Demand*, Lisbon, Portugal, May 21, 2015.
- PhD Winter School in Energy Systems and Markets, *Integrating Deferrable Demand in Electricity Markets: an SDDP Approach*, Kvitfjell, Norway, March 23, 2015 (invited).

2014

- INFORMS 2014, *Efficiency Losses of Zonal Network Management under Large-Scale Renewable Energy Integration*, San Francisco, California, November 9, 2014 (invited).
- *A Stochastic Programming Framework for the Large-Scale Integration of Renewable Energy in Power Systems*, Georgia Institute of Technology, Atlanta, Georgia, November 6, 2014 (invited).
- *Congestion Management through Topological Corrections: A Case Study of Europe*, University of California at Berkeley, Berkeley, CA, November 4, 2014 (invited).
- IFORS 2014, *Self-Commitment of Combined Cycle Units under Electricity Price Uncertainty*, Barcelona, Spain, July 15, 2014 (invited).
- Workshop overview, *Providing Incentives for Capacity Investment in a Regime of Large-Scale Renewable Energy and Demand Response Integration*, GDF Suez headquarters, Brussels, Belgium, June 26, 2014 (invited).

2013

- Lectures on Electric Power Systems, *A Stochastic Programming Framework for the Large-Scale Integration of Renewable Energy in Power Systems*, ETH Zurich, Zurich, Switzerland, December 11, 2013 (invited).
- ECORE seminar, *Self-Commitment of Combined Cycle Units under Electricity Price Uncertainty*, KU Leuven, Leuven, Belgium, November 4, 2013 (invited).
- IBM Thomas J. Watson Research Center, *Applying High Performance Computing to Multi-Area Stochastic Unit Commitment*, Yorktown Heights, NY, USA, October 10, 2013.
- INFORMS 2013, *Applying High Performance Computing to Multi-Area Stochastic Unit Commitment*, Minneapolis, MN, USA, October 7, 2013.
- University of Liege, *Self-Commitment of Combined Cycle Units under Electricity Price Uncertainty*, Liege, Belgium, September 20, 2013 (invited).
- IREP Bulk Power System Dynamics and Control Symposium, *An Application of High Performance Computing to Transmission Switching*, Rethymnon, Greece, August 28, 2013.
- IEEE Power and Energy Society General Meeting, *A Computational Study of Stochastic Unit Commitment Using High Performance Computing*, Vancouver, Canada, July 23, 2013 (invited).
- ABB Corporate Research, *Applying High Performance Computing to Multi-Area Stochastic Unit Commitment for Renewable Integration*, Dättwil, Switzerland, July 19, 2013 (invited).
- European Control Conference, *A Comparative Study of Stochastic and Security Constrained Unit Commitment Using High Performance Computing*, Zürich, Switzerland, July 18, 2013 (invited).
- 26th European Conference on Operational Research, *Applying High Performance Computing to Multi-Area Stochastic Unit Commitment for Renewable Integration*, Rome, Italy, July 1, 2013 (invited).
- IEEE Greece Power and Energy Society Chapter, *Applying High Performance Computing to Multi-Area Stochastic Unit Commitment for Renewable Integration*, National Technical University of Athens, Athens, Greece, June 25, 2013 (invited).

2012

- University College Dublin Electricity Research Center, *Large-Scale Integration of Deferrable Demand and Renewable Energy in Power Systems*, Trinity College, Dublin, Ireland, November 22, 2012 (invited).
- Catholic University of Rio (PUC-Rio), *Large-Scale Integration of Deferrable Demand and Renewable Energy in Power Systems*, Rio de Janeiro, Brasil, November 14, 2012.
- PSR, *Large-Scale Integration of Deferrable Demand and Renewable Energy in Power Systems*, Rio de Janeiro, Brasil, November 13-14, 2012.
- Federal University of Rio de Janeiro (COPPE), *Applying High Performance Computing to Multi-Area Stochastic Unit Commitment for Renewable Integration*, Rio de Janeiro, Brasil, November 12, 2012.
- Electric Energy Research Center (CEPEL), *Large-Scale Integration of Deferrable Demand and Renewable Energy in Power Systems*, Rio de Janeiro, Brasil, November 12, 2012.
- INFORMS 2012, *Mitigating Price Uncertainty Induced by Wind Power through Stochastic Unit Commitment*, Phoenix, AZ, October 14 - 17, 2012 (invited).

- INFORMS 2012, *Applying High Performance Computing to Multi-Area Stochastic Unit Commitment for Renewable Integration*, Phoenix, AZ, October 14 - 17, 2012 (invited).
- International Symposium on Mathematical Programming, *Applying High Performance Computing to Multi-Area Stochastic Unit Commitment for Renewable Integration*, Berlin, Germany, August 19-24, 2012.
- IEEE Power and Energy Society General Meeting, *A Stochastic Unit Commitment Model for Integrating Renewable Supply and Demand Response*, San Diego, CA, July 25, 2012 (invited).
- 12th Conference of Probabilistic Methods Applied to Power Systems, *Stochastic Modeling of Multi-Area Wind Production*, Constantinople, Turkey, June 9 - 14, 2012 (**special paper section**).
- Staff Technical Conference on Increasing Real-Time and Day-Ahead Market Efficiency through Improved Software, *Applying High Performance Computing to Multi Area Stochastic Unit Commitment for Wind Penetration*, Washington, DC, June 25 - 27, 2012 (invited).
- Operations Research and Information Engineering Colloquium, *Large-Scale Integration of Deferrable Demand and Renewable Energy Sources in Power Systems*, Cornell University, Ithaca, NY, February 16, 2012 (invited).
- Communications, Networks and Systems Seminar, *Large-Scale Integration of Deferrable Demand and Renewable Energy Sources in Power Systems*, University of Southern California, Los Angeles, CA, February 1, 2012 (invited).

2011

- INFORMS, *Multi-Area Stochastic Unit Commitment for Wind Penetration in a Transmission Constrained Network*, Charlotte, NC, November 14, 2011 (runner up, ENRE INFORMS student travel scholarship).
- INFORMS, *Integration of Contracted Renewable Energy and Spot Market Supply to Serve Flexible Loads*, Charlotte, NC, November 13, 2011 (invited).
- Siemens Center for Knowledge Interchange project review, *Mitigating the Uncertainty of Renewable Energy Resources through Direct or Telemetric Coupling with Deferrable Loads*, U.C. Berkeley, September 16, 2011.
- IEEE Power and Energy Society General Meeting, *Integrating Renewable Energy Contracts and Wholesale Dynamic Pricing to Serve Flexible Loads*, Detroit, MI, July 24 - 28, 2011 (invited).
- Staff Technical Conference on Increasing Real-Time and Day-Ahead Market Efficiency through Improved Software, *Multi-Area Stochastic Unit Commitment for High Wind Penetration in a Transmission Constrained Network*, Federal Energy Regulatory Commission, Washington DC, June 28-30, 2011 (invited).
- Optimization in an Uncertain Environment Workshop, *Multi-Area Stochastic Unit Commitment for High Wind Penetration*, University of California at Davis, Davis, CA, March 25, 2011.

RESEARCH SUPERVISION

PhD students

- Yuting Mou (November 2015 - present)
- Bertrand Gilles (September 2016 - present)
- Ilyes Mezghani (October 2016 - present)
- Céline Gérard (September 2017 - present)

- Daniel Avila (September 2018 - present)
- Quentin Lété (September 2018 - present)

Past PhD students

- Ignacio Aravena Solis, post-doctoral researcher at Lawrence Livermore National Laboratory, USA

Past post-doctoral researchers

- Jinil Han, assistant professor in the department of industrial and information systems engineering at Soongsil University, South Korea

Masters theses

- Simon Demuysere (ongoing)
- Jacques-Marius Roland (ongoing)
- Jacques Cartuyvels (ongoing)
- Antoine Legat, Application of SDDP to SOCP and SDP Relaxations of Distribution Networks
- Taku Kaneda, Hierarchical Distribution System Optimization Under Uncertainty
- Guillaume Nimal, Greenfield Transmission Planning for Electric Power Systems
- Quentin Lété, Optimal Planning of Robust DSO Grid
- Harold Louis della Faille de Leverghem, Contract Design to Support Renewable Investment: An Equilibirum Approach
- Arnaud Fabri, Value of Storage in Smart Grids
- Céline Gérard, Coordinated Operation of Electric Power Transmission and Distribution Systems
- Julien Vaes, Optimal Transmission Expansion Planning
- Ismail Ad'Oul, Co-Optimization of the Power and Heat Market
- Thomas Mercier, Optimization to Value Storage on Electrical Energy and Reserves Markets
- Quentin Laurent, Model Predictive Control of Wave Energy Converter
- Gilles Bertrand, Optimal Dispatch of Wind Farms Facing Market Prices
- Arnaud Cerckel, Valuation of Real-Time Flexiramp Products Using Stochastic Programming
- Alexandre Laterre, Distributed Algorithm for Optimal Power Flow on Multiphase Distribution Networks
- Nicolas Stevens, Models and Algorithms for Pricing Electricity in Unit Commitment
- Nicolas Vico, Hydro Power Management
- Quentin Voortman, Aggregation of Flexible Customers into Virtual Power Plants
- Kathleen Hemmer, Optimal Expansion of Transmission Networks
- Adrien Baland, Co-optimization of Gas Forward Contracts and Unit Commitment

SERVICE

Journal editor

- Associate editor for Operations Research (2018 - present)
- Associate editor for IEEE Transactions on Power Systems (2018 - present)
- Associate editor for IEEE Power and Energy Society Letters (2018 - present)

Journal referee

- Operations Research
- Management Science
- The Energy Journal
- European Journal of Operations Research
- Computational Management Science
- Computational Statistics
- Journal of Regulatory Economics
- IEEE Transactions on Power Systems
- IEEE Transactions on Smart Grid
- IEEE Power Engineering Letters
- Energy Policy
- Wind Energy
- Omega, the International Journal of Management Science
- Electric Power Systems Research
- Sustainable Energy, Grids and Networks

Technical program committees

- IEEE PES PowerTech, 2019
- 21st Power Systems Computation Conference, 2020
- ACM Energy Market Engineering workshop, 2018
- 20th Power Systems Computation Conference, 2018
- 19th Power Systems Computation Conference, 2016
- IEEE EnergyCon, 2016

Proposal referee

- French National Research Agency, *CE05: Une énergie durable, propre, sûre et efficace*, 2017
- French National Research Agency, *French graduate schools*, 2017
- United States National Science Foundation, *Small Business Innovation Research*, 2016
- French National Research Agency, *Proper, secure and efficient energy*, 2016
- French National Research Agency, *Young researchers*, 2016
- French National Research Agency, *Proper, secure and efficient energy*, 2015
- General Secretariat for Research and Technology of Greece, *Aristeia II*, 2014
- General Secretariat for Research and Technology of Greece, *Aristeia I*, 2013

PhD committees

- Léonard Von Niederhausern (INRIA Lille)
- Benoit Martin (Université catholique de Louvain)
- Hanspeter Höschle (Katholieke Universiteit Leuven)
- Tue Vissing Jensen (Danish Technical University)
- Ekaterina Moiseeva (KTH Stockholm)
- Mehdi Madani (Université catholique de Louvain)
- Bartosz Filipecki (Université catholique de Louvain)
- Kenneth Bruninx (Katholieke Universiteit Leuven)
- Sébastien Mathieu (Université de Liège)

Conference reviewer

- IEEE PES General Meeting
- International Conference on the European Energy Market
- Hawaii International Conference on System Sciences
- American Control Conference
- IEEE SmartGridComm Symposium
- IEEE PES PowerTech
- EnergyCon

Book reviewer

- Wiley - IEEE press

Conference organization

- Organizer of CORE Energy Day, Université catholique de Louvain, Louvain la Neuve, Belgium, April 16, 2018.
- Organizer of Bauchau prize ceremony, Université catholique de Louvain, Louvain la Neuve, Belgium, April 16, 2018.
- Member of the organizing committee of the CORE Bridging Gaps conference, Université catholique de Louvain, Louvain la Neuve, Belgium, May 23-27, 2016.
- Member of the organizing committee of the 30th annual meeting of the Belgian Operational Research Society, Université catholique de Louvain, Louvain la Neuve, Belgium, January 28-29, 2016.
- Member of the organizing committee of the 4th research workshop in Energy Economics, Benelux Association for Energy Economics, Université catholique de Louvain, Louvain la Neuve, Belgium, October 30, 2015.
- GDF Suez Chair inauguration workshop, *Providing Incentives for Capacity Investment in a Regime of Large-Scale Renewable Energy and Demand Response Integration*, Université catholique de Louvain, Louvain la Neuve, Belgium, June 3, 2014.

MEDIA

L'Echo (http://www.lecho.be/) interview, *The management of demand is by far preferable to capacity mechanisms*, July 11, 2014.