Yuting MOU | Curriculum Vitae

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Professional Experience

Southeast University, China
Assistant Professor *October 2021–Present*

Flemish Institute for Technological Research (VITO) / EnergyVille
Researcher, WP leader *November 2019–August 2021*

Education

Université catholique de Louvain
Ph.D. in Power System Operation and Economics *November 2015–June 2020*
Supervisors: Prof. Anthony Papavasiliou and Prof. Philippe Chevalier

Zhejiang University
Master in Control Science and Engineering *September 2012–March 2015*
Supervisor: Prof. Minyue Fu

Jilin University
Bachelor in Automation *September 2008–June 2012*

Publications

Peer-reviewed journal publications

Accepted

Luciana Marques, Anibal Sanjab, Yuting Mou, Hélène Le Cadre, and Kris Kessels. Grid impact aware TSO-DSO market models for flexibility procurement: Coordination, pricing efficiency, and information sharing. *IEEE Transactions on Power Systems*, 2022. forthcoming.

Anibal Sanjab, Hélène Le Cadre, and Yuting Mou. TSO-DSOs stable cost allocation for the joint procurement of flexibility: A cooperative game approach. *IEEE Transactions on Smart Grid*, 13(6):4449–4464, 2022.

Céline Gérard, Daniel Avila, Yuting Mou, Anthony Papavasiliou, and Philippe Chevalier. Comparison of priority service with multilevel demand subscription. *IEEE Transactions on Smart Grid*, 13(3):2026–2037, 2022.

Hélène Le Cadre, Yuting Mou, and Hanspeter Höschle. Parametrized inexact-ADMM based coordination games: A normalized Nash equilibrium approach. *European Journal of Operational Research*, 296(2):696–716, 2022.

Shahab Shariat Torbaghan, Mehdi Madani, Peter Sels, Ana Virag, Hélène Le Cadre, Kris Kessels, and Yuting Mou. Designing day-ahead multi-carrier markets for flexibility: Models and clearing algorithms. *Applied Energy*, 285:116390, 2021.

Yuting Mou, Anthony Papavasiliou, and Philippe Chevalier. A bi-level optimization formulation of priority service pricing. *IEEE Transactions on Power Systems*, 35(4):2493–2505, 2020.

Anthony Papavasiliou, Yuting Mou, Léopold Cambier, and Damien Scieur. Application of stochastic dual dynamic programming to the real-time dispatch of storage under renewable supply uncertainty. *IEEE Transactions on Sustainable Energy*, 9(2):547–558, 2018.

Hao Xing, Minyue Fu, Zhiyun Lin, and Yuting Mou. Decentralized optimal scheduling for charging and discharging of plug-in electric vehicles in smart grids. *IEEE Transactions on Power Systems*, 31(5):4118–4127, 2016.

Yuting Mou, Hao Xing, Zhiyun Lin, and Minyue Fu. Decentralized optimal demand-side management for PHEV charging in a smart grid. *IEEE Transactions on Smart Grid*, 6(2):726–736, 2015.

Hao Xing, Yuting Mou, Minyue Fu, and Zhiyun Lin. Distributed bisection method for economic power dispatch in smart grid. *IEEE Transactions on power systems*, 30(6):3024–3035, 2015.

Peer-reviewed conference publications

Accepted

Yuting Mou, Céline Gérard, Anthony Papavasiliou, and Philippe Chevalier. Designing menus for multilevel demand subscription. In *2021 Hawaii International Conference on System Sciences (HICSS)*, 2021.

Yuting Mou and Anthony Papavasiliou. Long-run cost-benefit analysis of demand response for the European system. In *2018 IEEE Power & Energy Society General Meeting (PESGM)*. IEEE, 2018.

Yuting Mou, Anthony Papavasiliou, and Philippe Chevalier. Application of multilevel demand subscription pricing for mobilizing residential demand response in Belgium. In *2018 IEEE International Energy Conference (ENERGYCON)*. IEEE, June 2018.

Yuting Mou, Hao Xing, Minyue Fu, and Zhiyun Lin. Distributed charging control for electric vehicles considering fair power allocation. In *2018 IEEE 14th International Conference on Control and Automation (ICCA)*, pages 373–378. IEEE, 2018.

Yuting Mou, Anthony Papavasiliou, and Philippe Chevalier. Application of priority service pricing for mobilizing residential demand response in Belgium. In *2017 International Conference on the European Energy Market (EEM),*. IEEE, 2017.

Yuting Mou, Hao Xing, Minyue Fu, and Zhiyun Lin. Decentralized PWM-based charging control for plug-in electric vehicles. In *2015 European Control Conference (ECC)*, pages 1070–1075. IEEE, 2015.

Yuting Mou, Hao Xing, Zhiyun Lin, and Minyue Fu. A new approach to distributed charging control for plug-in hybrid electric vehicles. In *2014 Chinese Control Conference (CCC)*, pages 8118–8123. IEEE, 2014.

Ph.D. thesis

Title: *Nonlinear Pricing Schemes for Mobilizing Residential Flexibility in Power Systems*

Supervisors: Prof. Anthony Papavasiliou and Prof. Philippe Chevalier

Jury members: Per Agrell, Bertrand Cornélusse, Hervé Jeanmart, Dimitrios Papadaskalopoulos, Andreas Ehrenmann, Hanspeter Höschle

Presentations

Comparison of priority service pricing and multilevel demand subscription pricing. INFORMS 2019, Seattle USA, October 21, 2019 (invited).

How do you pay for electricity in the future – a capacity based price menu for residential consumers. IEEE PES General Meeting 2019, Atlanta USA, August 7, 2019 (invited).

A bi-level optimization formulation of multilevel demand subscription pricing. 30th European Conference on Operational Research, Dublin Ireland, June 26, 2019 (invited).

Application of SDDP to the real-time dispatch of storage under renewable supply uncertainty. IEEE PES General Meeting 2018, Portland USA, August 7, 2018.

A bi-level optimization formulation of priority service pricing. 29th European Conference on Operational Research, Valencia Spain, July 10, 2018.

A bi-level optimization formulation of priority service pricing – a first step to capacity expansion. 41st IAEE International Conference, Groningen the Netherlands, June 7, 2018.

Long-run cost-benefit analysis of demand response for the European system. 6th BAEE Research Workshop on Energy Economics, Leuven Belgium, November 10, 2017.

Application of priority service pricing for mobilizing residential demand response in Belgium. 14th International Conference on the European Energy Market, Dresden Germany, June 6, 2017.

Research Projects

Energy Policy Decision Support Toolbox
Work Package Leader *November 2019–August 2021*
- Funded by Research Foundation - Flanders (FWO)
- Development of equilibrium models for the power system
- Implementation of algorithms to solve generalized Nash equilibrium games

CoordiNet
Major Contributor *April 2020–August 2021*
- Funded by the European Commission – Horizon 2020
- Evaluation of coordination schemes between TSOs and DSOs
- Balancing and congestion management market design for TSOs and DSOs with consideration of different coordination schemes

Future Grid Tariffs
Major Contributor *June 2020–September 2020*
- Funded by Elia, the Belgian TSO
- Evaluation of the impacts of various grid tariff structures on the power system and households

EPOC 2030-2050
Major Contributor *October 2018–October 2019*
- Funded by Federal Public Service Economy, SMEs, Self-employed and Energy
- Modeling of electricity consumption in households with local storage and PV panels in future scenarios

Color Power
Project Leader *November 2015–November 2018*
- Funded by ENGIE Electrabel
- Development of nonlinear pricing schemes for mobilizing residential flexibility in power systems

Teaching Experience

Teaching Assistant
Operations Research (LINMA2491) *Spring 2016*

Graduate course in UCLouvain department of Mathematical Engineering

Service

Journal reviewer

- IEEE Transactions on Power Systems
- IEEE Transactions on Sustainable Energy
- IEEE Transactions on Smart Grid

Conference reviewer

- IEEE PES General Meeting
- Power Systems Computation Conference
- European Control Conference
- American Control Conference
- Chinese Control Conference

Conference organization

- Organizer and session chair of CORE Energy Day, Université catholique de Louvain, Louvain-la-Neuve, Belgium, December 7-8, 2020
- Session chair of INFORMS Annual meeting, 2019
- Session chair of the 29th European Conference on Operational Research, 2019