Stefano Moret | full CV

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In a nutshell

PhD in Energy with a solid interdisciplinary background, my main area of expertise is **modeling and optimization of energy systems**. Currently, I am a postdoctoral researcher at EPFL (Switzerland), where I also lecture the *Energy conversion and renewable energy* Master course. To date, I have authored 15+ scientific publications, and I am fluent in Italian, English, French and Spanish; intermediate in German and Chinese. My goal is to contribute to the energy transition, through teaching, research and consulting.

Education

École Polytechnique Fédérale de Lausanne (EPFL) — **Switzerland**
PhD Energy — *2013–2017*
Dissertation title: *Strategic energy planning under uncertainty*
Supervisors: Prof. F. Maréchal, Prof. M. Bierlaire

University of Padova — **Italy**
MSc Mechanical Engineering, 110/110 with honors — *2009–2012*
GPA: 29.5/30

University of California, Berkeley — **USA**
Academic exchange for MSc Thesis, BEST lab — *Aug 2011 - Jan 2012*
Dissertation title: *Energy efficiency in lighting: daylight harvesting optimization and Wireless Sensor Networks*

NTNU — **Norway**
Academic exchange, Erasmus program — *2010*

University of Padova — **Italy**
BSc Industrial Engineering, 110/110 with honors — *2006–2009*
GPA 29.3/30

High School — **Italy**
Scientific High School diploma, 100/100 — *2001–2006*

Professional experience

École Polytechnique Fédérale de Lausanne (EPFL) — **Switzerland**
Postdoc and lecturer - Industrial Process and Energy Systems Engineering (IPESE) group — *2017–present*
- Lecturer: *Energy conversion and renewable energy* Master course (watch)
- Research: modeling and optimization of national energy systems. Active in multiple projects, mainly funded by the Swiss Competence Center for Energy Research (SCCER) and the Swiss National Science Foundation (SNSF)

École Polytechnique Fédérale de Lausanne (EPFL) — **Switzerland**
Research and teaching assistant - Industrial Process and Energy Systems Engineering (IPESE) group — *2013–2017*
Research: modeling and optimization under uncertainty of urban and national energy systems. Main projects:
- Swiss-energyscope.ch - decision support for the Swiss energy strategy
- Geotherm II - integration of deep geothermal energy in cities

Teaching:
- Assistant to Master and PhD energy courses: lectures and exercises
- 20+ supervised students (10 Master theses)

University of Padova – Industrial Engineering Department — **Italy**
Temporary research fellow — *2013*
6-month research project funded by ENEL Foundation

California Lighting Technology Center – University of California, Davis — **USA**
Junior Specialist — *2012*

Building energy simulation, experimental tests for fenestration devices

JEst - Junior Enterprise, University of Padova **Italy**
Associate, President (year 2011) *2009-2011*
Non-profit student association. Consultancy and event organization. Highlights:
- Start Cup Giovani, project manager: university course and start-up competition in 3 universities (250+ students). Obtained and managed 240 k€ funding from the Italian Prime Minister's Office, Department of Youth.
- Becoming Manager 2009, project manager: job meeting and recruitment event. Generated 30 k€ revenue.
- President: management of 35 associates

FIAMM Spa **Italy**
Summer intern *2009*
Energy storage. BSc thesis: LabVIEW application for Statistical Process Control

Aluminium Rheinfelden GmbH **Germany**
Intern *2008*
Aluminium foundry. One-month research on innovative aluminum alloys (collaboration with University of Padova)

ACC compressors Spa **China**
Summer intern *2006–2008*
Compressor manufacturer. Quality engineer, chemical and acoustic laboratory work

DSG Srl **Italy**
Summer intern *2005*
Stainless steel processing. Direct labor experience.

Current projects

energyscope: contributed to the development of the online platform `energyscope.ch`. Development, full documentation and maintenance of the open-source energy modeling framework: see it on `github`. The framework has found application in 10+ projects at urban, regional and national levels, and it is used for teaching at EPFL.

askPinocchio: machine learning tool for automatic online fake news detection (`askpinocchio.com`)

Languages

Italian: Mothertongue

English: Fluent *TOEFL iBT 106/120, year 2010*

French: Fluent

Spanish: Fluent

Mandarin Chinese: Intermediate *HSK Basic level A 211/300, year 2008*

German: Intermediate

Skills

IT: scripting (Matlab, python, Lua, VBA), mathematical programming (AMPL, GLPK), LaTeX, web development, git, MacOS, Linux

Technical: optimization, energy modeling, environmental impact assessment (LCA)

Organizational: solid experience in project management, problem solving

Relational: teaching (watch), presentations and public speaking, communication

Awards

Nominated by the PhD jury: ABB award for best EPFL PhD thesis in energy (results in 2019)

Honorable mention: MSc thesis. Italian energy efficiency contest "Think Green, Be Efficient". Italian Senate, 2012.

1st most innovative and creative project: Start Cup Giovani. JADE Excellence awards, EU Parliament, 2012.

2nd most innovative and creative project: Becoming Manager. JADE Excellence awards, EU Parliament, 2011.

Publications

PhD thesis

S. Moret, *Strategic energy planning under uncertainty*. EPFL, Lausanne, 2017. Advisors: F. Maréchal, M. Bierlaire. DOI: 10.5075/epfl-thesis-7961.

Journal articles

1. G. Limpens, S. Moret, H. Jeanmart and F. Maréchal. *EnergyScope TDs: an open source model for future national energy systems*. In preparation.
2. S. Moret, F. Babonneau, M. Bierlaire and F. Maréchal. *Can robust investment strategies reduce the risk of overcapacity in national power systems?* Submitted to Applied Energy, October 2018.
3. S. Moret, F. Babonneau, M. Bierlaire and F. Maréchal. *Decision support for strategic energy planning: a complete robust optimization framework*. Under review in European Journal of Operational Research (second stage of revision).
4. S. Moret, V. Codina Gironès, M. Bierlaire and F. Maréchal. *Characterization of input uncertainties in strategic energy planning models*. Applied energy, 2017. Vol. 202, p. 597-617. DOI: 10.1016/j.apenergy.2017.05.106
5. V. Codina Gironès, S. Moret, E. Peduzzi, M. Nasato and F. Maréchal. *Optimal use of biomass in large-scale energy systems: insights for energy policy*. Energy, 2017. Vol. 137, p. 789-797. DOI: 10.1016/j.energy.2017.05.027
6. J. Unternährer, S. Moret, S. Joost and F. Maréchal. *Spatial clustering for district heating integration in urban energy systems: application to geothermal energy*. Applied Energy, 2017. Vol. 15, p. 749-763. DOI: 10.1016/j.apenergy.2016.12.136
7. S. Moret, E. Peduzzi, L. Gerber and F. Maréchal. *Integration of deep geothermal energy and woody biomass conversion pathways in urban systems*. Energy Conversion and Management, 2016. Vol. 129, p. 305-318. DOI: 10.1016/j.enconman.2016.09.079
8. S. Moret, M. Bierlaire and F. Maréchal. *Robust optimization for strategic energy planning*. Informatica, 2016. Vol. 27, num. 3, p. 625-648. DOI: 10.15388/Informatica.2016.103
9. V. Codina Gironès, S. Moret, F. Maréchal and D. Favrat. *Strategic energy planning for large-scale energy systems: a modelling framework to aid decision-making*. Energy, 2015. Vol. 90, p. 173-186. DOI: 10.1016/j.energy.2015.06.008

Conference papers

1. X. Li, S. Moret, F. Baldi and F. Maréchal. *Are renewables really that expensive? The impact of uncertainty on the cost of the energy transition*. In preparation, 29th European Symposium on Computer Aided Process Engineering.
2. M. L. Della Vedova, E. Tacchini, S. Moret, G. Ballarin, L. de Alfaro and M. Di Pierro. *Automatic online fake news detection combining content and social signals*. In Proceedings of the FRUCT22 conference, Finland, 2018. DOI: 110.23919/FRUCT.2018.8468301
3. E. Tacchini, G. Ballarin, M. L. Della Vedova, S. Moret, and L. de Alfaro. *Some like it hoax: automated fake news detection in social networks*. In Proceedings of the Second Workshop on Data Science for Social Good, Macedonia, 2017. Vol. 1960. CEUR-WS.
4. S. Moret, M. Bierlaire and F. Maréchal. *Strategic energy planning under uncertainty: a mixed-integer linear programming modeling framework for large-scale energy systems*. In Proceedings of the 26th European Symposium on Computer Aided Process Engineering, p. 1899-1904, Slovenia, 2016. DOI: 10.1016/B978-0-444-63428-3.50321-0
5. J. Rager, S. Moret, M. Pernet and F. Maréchal. *Integrating uncertainty into urban energy system design*. In Proceedings of the 26th European Symposium on Computer Aided Process Engineering, p. 1641-1646, Slovenia, 2016. DOI: 10.1016/B978-0-444-63428-3.50278-2
6. V. Codina Gironès, S. Moret, E. Peduzzi, M. Nasato and F. Maréchal. *Optimal use of biomass in large-scale energy systems: insights for energy policy*. In Proceddings of the 29th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, Slovenia, 2016.
7. S. Moret, L. Gerber, F. Amblard, E. Peduzzi and F. Maréchal. *Geothermal energy and biomass integration in urban systems: a case study*. 40th Workshop on Geothermal Reservoir Engineering, USA, 2015.

8. S. Moret, V. Codina Gironès, F. Maréchal and D. Favrat. *Swiss-energyscope.ch: a platform to widely spread energy literacy and aid decision-making.* In Proceedings of the 17th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, p. 877-882, Czech Republic, 2014. DOI: 10.3303/Cet1439147
9. S. Moret, M. Noro and K. Papamichael. *Daylight harvesting: a multivariate regression linear model for predicting the impact on lighting, cooling and heating.* Buildins Simulation Applications, Italy, 2013.

Invited talks and presentations

1. S. Moret and F. Maréchal. *Energyscope: modeling a national energy system to support decision-making.* Invited talk, International Conference on the Management of Energy, Climate and Air for a Sustainable Society, Cuba, July 2018.
2. S. Moret. *University and Sustainability: il ruolo dell'università nella transizione energetica.* Invited talk, JADE Italia meeting, Italy, May 2018.
3. S. Moret. *Uncertainty: Sensitivity analysis and robust optimization.* Invited talk, Modeling and optimization of ship energy systems workshop, Switzerland, October 2017.
4. S. Moret, V. Codina Gironès, M. Bierlaire and F. Maréchal. *The impact of uncertainty in national energy planning.* Poster presentation, Energy Systems Conference, UK, June 2016.
5. S. Moret, M. Bierlaire and F. Maréchal. *Uncertainty classification for strategic energy planning.* Poster presentation, SIAM Conference on Uncertainty Quantification, Switzerland, April 2016.
6. S. Moret, M. Bierlaire and F. Maréchal. *Robust optimization for strategic energy planning.* Conference presentation, 1st European Conference on Stochastic Programming and Energy Applications, France, September 2014.
7. S. Wiemer and S. Moret. *Geothermal reservoir processes: towards the implementation of research into the creation and sustainable use of enhanced geothermal systems (GEOTHERM-2).* Invited talk, Competence Center Environment and Sustainability conference, Switzerland, February 2014.
8. S. Moret and A. Lorenzoni. *Energia elettrica, vettore efficiente negli usi finali.* Invited talk, University of Padova, December 2013.

Other interests

Music: guitar player
Traveling & photography
Sports: running, mountaineering
Writing, literature & philosophy

References

Available upon request from EPFL, University of Padova, University of California Davis, FIAMM Spa, ACC Compressors Spa

Last updated: October 16, 2018