Juan Miguel Morales González

CONTACT
INFORMATION

University of Málaga
Edificio de Ingenierías Industriales
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PERSONAL

Spanish (D.O.B. 10th of January 1982, Granada, Spain)

RESEARCH
INTERESTS

Mathematical programming; Stochastic, robust, inverse, and hierarchical optimization; Data-driven decision making under uncertainty; Time series analysis; Renewable energy sources; Energy systems modeling; Energy analytics, markets, and economics; Power system operations, planning and control; Reliability; Smart grids; Demand-side management

APPOINTMENTS

University of Málaga, Applied Mathematics, Málaga, Spain

Associate Professor 09/2016 − ...

Technical University of Denmark, DTU Compute, Kgs. Lyngby, Denmark

Associate Professor 04/2013 − 09/2016
- Sponsored by DONG Energy, one of the leading energy groups in Northern Europe
- Research on design of future electricity markets, energy trading, generation and transmission capacity investment, efficient resource management, smart grid
- Research on operations research models in energy
- Involved in European, Danish and Spanish projects (e.g., SmartNet, CITIES and 5's)
- Teaching and supervision at M.Sc. and Ph.D. levels

Technical University of Denmark, DTU Electrical Engineering, Kgs. Lyngby, Denmark

Assistant Professor 07/2012 − 03/2013
- Research on the impact of electricity market design on investments in renewable capacity
- Research on smart charging of electric vehicles
- Collaborator in the Danish project IPower and co-author of the DSF project proposal "Future Electricity Markets (5's)"

Technical University of Denmark, DTU Informatics, Kgs. Lyngby, Denmark

Hans Christian Ørsted Research Fellow 07/2011 − 06/2012
- Research on market design, electricity pricing, demand response, trading strategies, wind power investments
- Collaborator in several Danish projects
- (co-)Supervision of M.Sc. students

Post-doc researcher 05/2011 − 07/2011
- Research on transmission expansion in power systems including a high penetration of wind power
- Project: *Energy systems modelling, research and analysis* (ENSYMORA) − Methods and models to address the challenges of a fossil-free energy system

University of Castilla − La Mancha, Spain

Research engineer 01/2007 − 12/2010
- Participation in publicly and industry funded projects on wind and solar energy management
- Lecturing on electricity markets, power systems, and wind power integration for undergraduate students at the University of Castilla − La Mancha

EDUCATION

University of Castilla − La Mancha, Spain

Ph.D., Electrical Engineering (12/2010)
with highest honours and European Doctorate Mention
- Title: *Impact on System Economics and Security of a High Penetration of Wind Power*
- Jury: Pr. José I. Pérez Arriaga (president), Pr. Henrik Madsen, Pr. Mark O'Malley, Pr. Jesús F. López Fidalgo, and Dr. Miguel Á. Plazas
- Advisors: Pr. Antonio J. Conejo Navarro and Dr. Juan Pérez Ruiz

University of Málaga, Málaga, Spain

B.Sc. and M.Sc., Industrial Engineering (06/2006)
- The official length of the programme is 5 years and the total time of taught classes and practical training is 3900 hours
- The main fields of study for the qualification are Electricity, electronics, systems and automatics; Industrial facilities, building and architecture; Mechanical and material engineering; Manufacturing processes and product design; Hydraulic, thermal, nuclear and alternative energy supplies; Environmental technology; Business organization and administration, and Project methodology, organization, and management
- Best graduate student at the School of Industrial Engineers in the academic year 2005/2006
- Best graduate student at the University of Málaga, within the field of engineering disciplines, in the academic year 2005/2006

VISITING
SCIENTIST
McGill University, Department of Electrical and Computer Engineering, Montreal, Canada (September-October 2007)
Mechanisms for market clearing under uncertainty (with Pr. F. Galiana)

Danmarks Tekniske Universitet, Institut for Informatik og Matematisk Modellering, Lygnby, Denmark (July-September 2010)
Integrating wind power probabilistic forecasts into energy systems management tools (with Pr. H. Madsen)

LANGUAGES
Spanish: Mother tongue
English: Fluent
French: Working knowledge
Danish: Working knowledge (PD3: 11/12)

BOOKS
1. A. J. Conejo, M. Carrión and **J. M. Morales** (2010). "Decision Making under Uncertainty in Electricity Markets," *International Series in Operations Research and Management Science*, Springer, New York, US. ISBN: 978-1-4419-7421-1
2. **J. M. Morales**, A. J. Conejo, H. Madsen, P. Pinson and M. Zugno (2013). "Integrating Renewables in Electricity Markets – Operational Problems," *International Series in Operations Research and Management Science*, Springer, New York, US. ISBN: 978-1-4614-9411-9
3. **J. M. Morales**, B. Olea (2022) "Un enfoque práctico del análisis vectorial para ingenieros" A practical handbook *UMA Editorial* University of Málaga ISBN: 978-84-1335-144-5

BOOK
CHAPTERS
1. **J.M. Morales**, S. Pineda, M. Zugno (2013). Market design for future clean electricity systems: Advances based on optimization under uncertainty. In *Handbook of Clean Energy Systems*, J. Yan (ed). Wiley, ISBN: 978-1-118-38858-7
2. H. Madsen, **J.M. Morales**, P.-J. Trombe, G. Giebel, H.E. Jørgensen, P. Pinson (2014). Wind resource assessment and wind power forecasting. In *DTU International Energy Report 2014: Wind Energy – Drivers and Barriers for Higher Shares of Wind in the Global Power Generation Mix*, H.H. Larsen and L.S. Petersen (eds.), Chapter 10, pp. 72–78
3. P.E. Morthorst, **J.M. Morales**, S. Schröder (2014). Wind economics. In *DTU International Energy Report 2014: Wind Energy – Drivers and Barriers for Higher Shares of Wind in the Global Power Generation Mix*, H.H. Larsen and L.S. Petersen (eds.), Chapter 11, pp. 79–85

JOURNAL
ARTICLES
1. **J. M. Morales**, J. Pérez-Ruiz (2007). Point-estimate schemes to solve the probabilistic power flow. *IEEE Transactions on Power Systems* 22(4):1594–1601
2. J. Misraji, A. J. Conejo, **J. M. Morales** (2008). Reserve-constrained economic dispatch: Cost and payment allocations. *Electric Power Systems Research* 78(5):919–925
3. **J. M. Morales**, S. Pineda, A. J. Conejo, M. Carrión (2009). Scenario reduction for futures market trading in electricity markets. *IEEE Transactions on Power Systems* 24(2):878–888
4. **J. M. Morales**, A. J. Conejo, J. Pérez-Ruiz. Economic valuation of reserves in power systems with high penetration of wind Power (2009). *IEEE Transactions on Power Systems* 24(2):900–910
5. **J. M. Morales**, A. J. Conejo, J. Pérez-Ruiz (2010). Short-term trading for a wind power producer. *IEEE Transactions on Power Systems* 25(1):554–564
6. A. J. Conejo, J. Nogales, M. Carrión, **J. M. Morales** (2010). Electricity pool prices: long-term uncertainty characterization for futures-market trading and risk management. *Journal of the Operational Research Society* 61(2):235–245
7. **J. M. Morales**, R. Mínguez, A. J. Conejo (2010). A methodology to generate statistically dependent wind speed scenarios. *Applied Energy* 87(3):843–855

8. **J. M. Morales**, L. Baringo, A. J. Conejo, R. Mínguez (2010). Probabilistic power flow with correlated wind sources. *IET Generation, Transmission & Distribution* 4(5):641–651

9. E. Caro, **J. M. Morales**, A. J. Conejo, R. Mínguez (2010). Calculation of measurement correlations using point estimate. *IEEE Transactions on Power Delivery* 25(4):2095–2103

10. A. J. Conejo, **J. M. Morales**, L. Baringo (2010). Real-time demand response model. *IEEE Transactions on Smart Grids* 1(3):236–242

11. **J. M. Morales**, A. J. Conejo, J. Pérez-Ruiz (2011).Simulating the impact of wind production on locational marginal prices. *IEEE Transactions on Power Systems* 26(2):820–828

12. A. J. Conejo, **J. M. Morales**, J. A. Martínez (2011). Tools for the analysis and design of distributed resources. Part III: Market studies. *IEEE Transactions on Power Delivery* 26(3):1663-1670

13. M. Rahimiyan, **J. M. Morales**, A. J. Conejo (2011). Evaluating alternative offering strategies for wind producers in a pool. *Applied Energy* 88(12):4918-4926

14. **J. M. Morales**, P. Pinson, H. Madsen (2012). A Transmission-cost based model to estimate the amount of market-integrable wind resources. *IEEE Transactions on Power Systems* 27(2):1060-1069

15. **J. M. Morales**, A. J. Conejo, K. Liu, J. Zhong (2012). Pricing electricity in pools with wind producers. *IEEE Transactions on Power Systems* 27(3):1366-1376

16. M. Zugno, **J. M. Morales**, P. Pinson, H. Madsen (2013).A bilevel model for energy retailers participation in a demand response market environment. *Energy Economics*, 36:182-197

17. H. Pandzic, **J. M. Morales**, A. J. Conejo, and I. Kuzle (2013). Offering model for a virtual power plant based on stochastic programming. *Applied Energy*, 105:282-292

18. M. Zugno, **J. M. Morales**, P. Pinson, H. Madsen (2013). Pool strategy of a price-maker wind power producer. *IEEE Transactions on Power Systems*, 28(3):3440-3450

19. **J. M. Morales**, M. Zugno, S. Pineda, P. Pinson (2014). Redefining the merit order of stochastic generation in forward markets. *IEEE Transactions on Power Systems*, 29(2):992-993

20. **J. M. Morales**, M. Zugno, P. Pinson, S. Pineda (2014). Electricity market clearing with improved scheduling of stochastic production (2014). *European Journal of Operational Research*, 235(3):765-774

21. E. B. Iversen, **J.M. Morales**, J. K. Møller, H. Madsen (2014). Probabilistic forecasts of solar irradiance by stochastic differential equations. *Environmetrics*, 25(3):152-164.

22. E. B. Iversen, **J. M. Morales**, H. Madsen (2014). Optimal charging of an electric vehicle using a Markov decision process. *Applied Energy*, 123:1-12.

23. S. Pineda, **J. M. Morales**, Y. Ding, J. Østergaard. Impact of equipment failures and wind correlation on generation expansion planning (2014). *Electric Power Systems Research*, 116:451-458.

24. J. Saez-Gallego, **J.M. Morales**, H. Madsen, T. Jónsson (2014). Determining reserve requirements in DK1 area of Nord Pool using a probabilistic approach. *Energy*, 74:682-693.

25. A. Skajaa, K. Edlund, **J.M. Morales** (2015). Intraday trading of wind energy. *IEEE Transactions on Power Systems*, 30(6):3181-3189.

26. Y. Hu, **J.M. Morales**, S. Pineda, M. J. Sanchez, P. Solana (2015). Dynamic multi-stage dispatch of isolated wind-diesel power systems. *Energy Conversion and Management*, 103:605-615.

27. M. Zugno, **J. M. Morales**, H. Madsen (2015). Decision support tools for electricity retailers, wind power and CHP plants using probabilistic forecasts. Special Issue of *International Journal of Sustainable Energy Planning and Management*, 7:19-36.

28. M. G. Nielsen, **J.M. Morales**, M. Zugno, T. E. Pedersen, H. Madsen (2016). Economic valuation of heat pumps and electric boilers in the Danish energy system. *Applied Energy*, 167:189-200.

29. S. Pineda, **J.M. Morales**, T. K. Boomsma (2016). Impact of forecast errors on expansion planning of power systems with a renewables target. *European Journal of Operational Research*, 248(3):1113-1122.

30. A. Hellmers, M. Zugno, A. Skajaa, **J.M. Morales** (2016). Operational strategies for a portfolio of wind farms and CHP plants in a two-price balancing market. *IEEE Transactions on Power Systems*, 31(3):2182-2191.

31. E. B. Iversen, **J.M. Morales**, J. K. Møller, H. Madsen (2016). Short-term probabilistic forecasting of wind speed using stochastic differential equations. *International Journal of Forecasting* (Special Issue on Probabilistic Energy Forecasting), 32(3):981-990.

32. S. Pineda, **J.M. Morales** (2016). Capacity Expansion of Stochastic Power Generation under Two-Stage Electricity Markets. *Computers & Operations Research*, 70:101-114.

33. S. Delikaraoglou, **J.M. Morales**, P. Pinson (2016). Impact of inter- and intra-regional coordination in markets with a large renewable component. *IEEE Transactions on Power Systems*, 31(6):5061-5070.

34. J. Saez-Gallego, **J.M. Morales**, M. Zugno, H. Madsen (2016). A data-driven bidding model for a cluster of price-responsive consumers of electricity. *IEEE Transactions on Power Systems*, 31(6):5001-5011.

35. B. Bach, J. Werling, T. Ommen, M. Münster, **J.M. Morales**, B. Elmegaard (2016). Integration of large-scale heat pumps in the district heating systems of Greater Copenhagen. *Energy*, 107:321-334.

36. M. Zugno, J.M. Morales, H. Madsen (2016). Commitment and dispatch of heat and power units via affinely adjustable robust optimization. *Computers & Operations Research* 75:191-201.

37. E. B. Iversen, **J.M. Morales**, J. K. Møller, P.-J. Trombe, H. Madsen (2017). Leveraging stochastic differential equations for probabilistic forecasting of wind power using a dynamic power curve, *Wind Energy*, 20(1):33-44.

38. E. B. Iversen, J. K. Møller, **J. M. Morales**, H. Madsen (2017). Inhomogeneous Markov models for describing driving patterns. *IEEE Transactions on Smart Grid*, 8(2):581-588.

39. **J.M. Morales** and S. Pineda (2017). On the inefficiency of the merit order in forward electricity markets with uncertain supply. *European Journal of Operational Research*, 261(2):789-799.

40. I. Blanco and **J.M. Morales** (2017). An efficient robust solution to the two-stage stochastic unit commitment problem. *IEEE Transactions on Power Systems*, 32(5):4477-4488.

41. C. Zhang, Q. Wang, J. Wang, **J.M. Morales**, P. Pinson, and Jacob Østergaard (2018). Real-time procurement strategies of a proactive distribution company with aggregator-based demand response. *IEEE Transactions on Smart Grid*, 9(2):766-776.

42. J. Saez-Gallego and **J.M. Morales** (2018). Short-term forecasting of price-responsive loads using inverse optimization. *IEEE Transactions on Smart Grid*, 9(5):4805-4814.

43. J. Saez-Gallego, M Kohansal, A Sadeghi-Mobarakeh and **J.M. Morales** (2018). Optimal price-energy demand bids for aggregate price-responsive loads. *IEEE Transactions on Smart Grid*, 9(5):5005-5013.

44. S. Pineda, H. Bylling and **J. M. Morales** (2018). Efficiently solving linear bilevel programming problems using off-the-shelf optimization software. *Optimization and Engineering*, 19(1):187-211.

45. S. Pineda and **J. M. Morales** (2018). Chronological time-period clustering for optimal capacity expansion planning with storage. *IEEE Transactions on Power Systems*, 33(6):7162-7170.

46. C. Ordoudis, P. Pinson, and **J. M. Morales** (2019). An Integrated Market for Electricity and Natural Gas Systems with Stochastic Power Producers. *European Journal of Operational Research*, 272(2):642-654.

47. V. Dvorkin, S. Delikaraoglou and **J. M. Morales** (2019). Setting reserve requirements to approximate the efficiency of the stochastic dispatch. *IEEE Transactions on Power Systems*, 34(2):1524-1536.

48. S. Pineda and **J. M. Morales** (2019). Solving linear bilevel problems using Big-Ms: Not all that glitters is gold. *IEEE Transactions on Power Systems*, 34(3): 2469-2471.

49. K. Dächert, S. Siddiqui, J. Saez-Gallego, S. Gabriel and **J. M. Morales** (2019). A bicriteria perspective on L-Penalty Approaches - A corrigendum to Siddiqui and Gabriel's L-Penalty Approach for Solving MPECs. *Networks and Spatial Economics*, 19(4):1199-1214.

50. G. De Zotti, S. A. Pourmousavi, **J. M. Morales**, H. Madsen and N. K. Poulsen (2019). Consumers' flexibility estimation at the TSO level for balancing services. *IEEE Transactions on Power Systems*, 34(3):1918-1930.

51. N. Mazzi, A. Trivella and **J. M. Morales** (2019). Enabling active/passive electricity trading in dual-price balancing markets. *IEEE Transactions on Power Systems*, 34(3):1980-1990.

52. S. Pineda, R. Fernández-Blanco and **J. M. Morales** (2019). Time-adaptive unit commitment. *IEEE Transactions on Power Systems*, 34(5):3869-3878.

53. C. Lima, S. Relvas, A. Barbosa-Póvoa, **J. M. Morales** (2019). Adjustable robust optimization for planning logistics operations in downstream oil networks. *Processes* 7(8):507-537.

54. G. De Zotti, S. A. Pourmousavi, **J. M. Morales**, H. Madsen and N. K. Poulsen (2020). A control-based method to meet TSO and DSO ancillary services needs by flexible end-users. *IEEE Transactions on Power Systems*, 35(3):1868-1880.

55. M. Á. Muñoz, **J. M. Morales** and S. Pineda (2020). Feature-driven improvement of renewable energy forecasting and trading. *IEEE Transactions on Power Systems*, 35(5):3753-3763.

56. Á. Porras, R. Fernández-Blanco, **J. M. Morales** and S. Pineda (2020). An efficient robust approach to the day-ahead operation of an aggregator of electric vehicles. *IEEE Transactions on Smart Grid*, 11(6):4960-4970.

57. D. Guericke, I. Blanco, **J. M. Morales** and H. Madsen (2020). A two-phase stochastic programming approach to biomass supply planning for combined heat and power plants. *OR Spectrum*, 42:863–900.

58. S. Pineda, **J. M. Morales** and A. Jiménez-Cordero (2020). Data-driven screening of network constraints for unit commitment. *IEEE Transactions on Power Systems*, 35(5):3695-3705.

59. A. Jiménez-Cordero, **J. M. Morales** and S. Pineda (2021). A novel embedded min-max approach for feature selection in nonlinear support vector machine classification. *European Journal of Operational Research* 293(1):24-35.

60. M. Gržanić, **J. M. Morales**, S. Pineda, T. Capuder (2021). Electricity cost sharing in energy communities under dynamic pricing and uncertainty. *IEEE Access*, 9:30225-30241.

61. R. Fernández-Blanco, **J. M. Morales**, S.Pineda (2021). Forecasting the price-response of a pool of buildings via homothetic inverse optimization. *Applied Energy*, 290:116791.

62. R. Fernández-Blanco, **J.M. Morales**, S. Pineda, and Á. Porras (2021) Inverse optimization with kernel regression: Application to the power forecasting and bidding of a fleet of electric vehicles. *Computers & Operations Research*, 134:105405.

63. V. Bucarey, M. Labbé **J.M. Morales** and S. Pineda (2021) An exact dynamic programming approach to segmented isotonic regression. *Omega*, 105:102516.

64. A. Esteban-Pérez and **J.M. Morales** (2021) Partition-based distributionally robust optimization via optimal transport with order cone constraints. *4OR*, DOI: 10.1007/s10288-021-00484-z.

65. **J.M. Morales**, S. Pineda and Yury Dvorkin (2021) Learning the price response of active distribution networks for TSO-DSO coordination *IEEE Transactions on Power Systems*. DOI: 10.1109/TPWRS.2021.3127343

66. A. Esteban-Pérez and **J.M. Morales** (2021) Distributionally robust stochastic programs with side information based on trimmings. *Mathematical Programming*. DOI:10.1007/s10107-021-01724-0

67. M. A. Muñoz, S. Pineda, and **J.M. Morales** (2022) A bilevel framework for decision-making under uncertainty with contextual information. *Omega*, 108:102575.

68. S. Pineda and **J.M. Morales** (2022) Is learning for the unit commitment problem a low-hanging fruit? *Electric Power Systems Research*, 207:107851.

69. Á. Porras, S. Pineda, **J.M. Morales** and A.Jiménez-Cordero (2022) Cost-driven screening of network constraints for the unit commitment problem. *IEEE Transactions on Power Systems* DOI:10.1109/TPWRS.2022.3160016

1. A. J. Conejo and **J. M. Morales**, "Economic impact of wind power penetration: A stochastic programming approach," INFORMS 2007 Annual Meeting, Seattle, US. November 2007
2. **J. M. Morales** and A. J. Conejo, "Short-term trading for a wind power producer," INFORMS 2008 Annual Meeting, Washington D.C, US. October 2008
3. S. Pineda, **J. M. Morales**, A. J. Conejo and M. Carrión, "Scenario reduction for futures market trading in electricity markets," INFORMS 2008 Annual Meeting, Washington D.C, US. October 2008
4. M. Carrión, A. J. Conejo, S. Pineda and **J. M. Morales**, "Scenario reduction for trading in electricity markets", 23rd European Conference on Operational Research, July 5-8, 2009, Bonn, Germany
5. **J. M. Morales**, A. Conejo and J. Pérez-Ruiz, "Economic valuation of reserves in power systems with high penetration of wind power," IEEE PES 2009 General Meeting, July 26-30, 2009, Calgary, Alberta, Canada
6. **J. M. Morales**, A. Conejo and J. Pérez-Ruiz, "Short-term trading for a wind power producer", Conference for the Next Generation of Researchers in Power Systems, September 4-7, 2009, ETH Zurich, Switzerland
7. **J. M. Morales**, A. J. Conejo and R. Mínguez, "A methodology to generate statistically correlated wind speed scenarios", INFORMS Annual Meeting, October 11-14, 2009, San Diego, California, US
8. A. J. Conejo and **J. M. Morales**, "Integrating non-dispatchable producers in electricity markets", 7th International Conference on the European Energy Market (EEM10), June 23-25, 2010, Madrid, Spain
9. A. J. Conejo, **J. M. Morales** and J. Pérez-Ruiz, "Short-term trading for a wind power producer", IEEE PES 2010 General Meeting, July 25-29, 2010, Minneapolis, Minnesota, US
10. A. J. Conejo, **J. M. Morales**, and R. Mínguez, "Generating statistically dependent wind speed scenarios", XXXII Congreso Nacional de Estadística e Investigación Operativa y VI Jornadas de Estadística Pública, september 14-17, 2010, A Coruña, Spain
11. **J. M. Morales**, A. J. Conejo and J. Pérez-Ruiz, "Wind impact on locational marginal prices", INFORMS 2010 Annual Meeting, November 7-10, 2010, Austin, Texas, US
12. S. Pineda, A. J. Conejo, **J. M. Morales** and M. Carrión, "Scenario reduction for futures market trading in electricity markets", 8th International Conference on Computational Management Science (CMS 2011), April 28-30, 2011, University of Neuchâtel, Switzerland
13. **J. M. Morales**, A. Conejo, and J. Pérez-Ruiz, "Simulating the impact of wind production on locational marginal prices", IEEE PES 2011 General Meeting, July 24-28, 2011, Detroit, Michigan, US
14. **J. M. Morales**, A. Conejo, J. Pérez-Ruiz, "Scheduling energy and reserve in systems with high wind penetration", IEEE PES 2012 General Meeting, July 22-26, San Diego, California, EEUU.
15. P. Pinson, T. Jónsson, M. Zugno, **J. M. Morales**, H. Madsen, B. Klöckl. Statistical analysis of the impact of wind power on market quantities and power flows. IEEE PES 2012 General Meeting, July 22-26, 2012, San Diego, California, US
16. M. Zugno, **J. M. Morales**, P. Pinson, H. Madsen. Modeling demand response in electricity retail markets as a Stackelberg game. IAEE European Energy Conference 2012, September 9-12, Venice, Italy
17. **J. M. Morales** and A. J. Conejo, "Pricing Electricity in Pools with Stochastic Producers", INFORMS 2012 Annual Meeting, October 14-17, 2012, Phoenix, US
18. A. J. Conejo, L. Baringo, and **J. M. Morales**, "Real-Time Demand Response Model", INFORMS 2012 Annual Meeting, October 14-17, 2012, Phoenix, US
19. S. Pineda and **J. M. Morales**, "Optimal Location of Wind Power Capacity: A Point-estimate Solution Approach", INFORMS 2012 Annual Meeting, October 14-17, 2012, Phoenix, US
20. **J. M. Morales**, M. Zugno, S. Pineda, and P. Pinson, "Clearing Forward Markets Based on Forecasts of Stochastic Production", 26th European Conference on Operational Research, July 1-4, 2013, Rome, Italy.
21. S. Pineda, **J. M. Morales**, M. Zugno, and P. Pinson, "Electricity Market Clearing With Improved Scheduling of Stochastic Production", 13th International Conference on Stochastic Programming, July 8-12, 2013, Bergamo, Italy.
22. M. Zugno, **J. M. Morales**, P. Pinson, and H. Madsen, "Trading Wind Power Optimally as a Price-making Agent in the Balancing Market", INFORMS 2013 Annual Meeting, October 6-9, 2013, Minneapolis, US
23. M. Zugno, **J. M. Morales**, and H. Madsen, "Robust Management of Combined Heat and Power Systems via Linear Decision Rules", In Proceedings of IEEE International Energy Conference (EnergyCon), May 13-16, 2014, Dubrovnik, Croatia
24. J. Saez-Gallego, **J. M. Morales**, H. Madsen, and T. Jonsson, "Determining reserve requirements in DK1 area of Nord Pool using a probabilistic approach", 11th International Conference on Computational Management Science (CMS 2014), May 29-31, 2014, Lisbon, Portugal
25. **J. M. Morales** and H. Madsen, "A Method to Identify Competitive Wind Locations", 20th Conference of the International Federation of Operational Research Societies (IFORS 2014), July 13-18, 2014, Barcelona, Spain
26. S. Pineda and **J. M. Morales**, "Modeling the Impact of Imbalance Costs and Market Design on Generating Expansion of Stochastic Units", 20th Conference of the International Federation of Operational Research Societies (IFORS 2014), July 13-18, 2014, Barcelona, Spain

27. M. Zugno, **J. M. Morales** and H. Madsen, "An Affinely Adjustable Robust Optimization Approach to the Operation of Heat and Power Systems", 20th Conference of the International Federation of Operational Research Societies (IFORS 2014), July 13-18, 2014, Barcelona, Spain

28. S. Pineda, **J. M. Morales**, and Trine K. Boomsma, "Impact of Forecast errors on Generation and Transmission Expansion Planning", Workshop on Mathematical Models and Methods for Energy Optimization (CWM^{3}EO), September 25-26, 2014, Budapest, Hungary. Sponsored by the EU COST Action TD1207 Mathematical Optimization in the Decision Support Systems for Efficient and Robust Energy Networks

29. S. Pineda, **J. M. Morales**, and Trine K. Boomsma, "Impact of Forecast Errors on Expansion Planning of Power Systems with a Renewables Target", INFORMS 2014 Annual Meeting, November 9-12, 2014, San Francisco, US

30. E. Caro, B. Martin-Sierra, C. Garcia-Martos, **J. M. Morales**, "Optimal trading for wind power producers under uncertainty, using bootstraping techniques", 7th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2014), December 6-8, 2014, University of Pisa, Italy

31. **J. M. Morales**, S. Pineda, M. Zugno, "On the inefficiency of the merit order in forward electricity markets with uncertain supply", the Nordic Environmental Social Science Conference 2015, June 9-11, 2015, Trondheim, Norway

32. C. Ordoudis, P. Pinson, M. Zugno, **J. M. Morales**. "Stochastic Unit Commitment via Progressive Hedging - Extensive Analysis of Solutions Methods," PowerTech Eindhoven 2015, June 29 - July 2, 2015, Eindhoven, The Netherlands

33. **J. M. Morales**, J. Saez-Gallego, M. Zugno, "A Data-Driven Bidding Model for a Cluster of Price-Responsive Consumers of Electricity", the 22nd International Symposium on Mathematical Programming, July 12th-17th, 2015, Pittsburgh, Pennsylvania, US

34. S. Delikaraoglou, **J. M. Morales**, P. Pinson, "Impact of Inter- and Intra-regional Coordination in Markets with a Large Renewable Component", the 22nd International Symposium on Mathematical Programming, July 12th-17th, 2015, Pittsburgh, Pennsylvania, US

35. J. Saez-Gallego, **J. M. Morales**, M. Zugno, H. Madsen, "Aggregation of Price-Responsive Units Using Inverse Optimization", the 27th European Conference on Operational Research, July 12th-25th, 2015, Glasgow, Scotland, UK

36. **J. M. Morales**, S. Pineda, M. Zugno, "On the Inefficiency of the Merit Order in Forward Electricity Markets with Uncertain Supply", INFORMS Annual Meeting, November 1-4, 2015, Philadelphia, USA

37. J. Saez-Gallego, **J. M. Morales**, M. Zugno, H. Madsen, "Bidding Models for Price-responsive Loads in Electricity Markets", INFORMS Annual Meeting, November 1-4, 2015, Philadelphia, USA

38. **J. M. Morales**, "A Data-Driven Bidding Model for a Cluster of Price-Responsive Consumers of Electricity", invited speaker in the special session "Smart flexibility strategies in (de)regulated electricity and ancillary service markets: from application level to market clearing (industrial and academic perspectives)" of the IEEE International Energy Conference (EnergyCon) held in Leuven, Belgium, on April 4-8, 2016.

39. **J. M. Morales**, "Mechanisms to Increase the Efficiency of Two-stage Electricity Markets with Uncertain Supply", invited speaker in the tutorial session "Managing Uncertainties in Power System Operation" of the 19th Power Systems Computation Conference (PSCC) held in Genoa, Italy, on June 20-24, 2016.

40. **J. M. Morales**, A. Hellmers, M. Zugno, A. Skajaa, "Operational Strategies for a Portfolio of Wind Farms and CHP Plants in a Two-Price Balancing Market", IEEE PES General Meeting, Boston, USA, July 17-21, 2016.

41. **J. M. Morales**, "The Danish Experience and View on Energy System Development", invited speaker in the panel session "Energy Policy in Europe: Objectives, achievements, and challenges" of the IEEE PES General Meeting held in Boston, USA, on July 17-21, 2016.

42. G. De Zotti, J. Saez-Gallego, **J. M. Morales**, "Short-term forecasting of price-responsive loads using inverse optimization," in Workshop on "Optimization challenges in the evolution of energy networks to smart grids", University of Coimbra, Portugal, October 27-28, 2016.

43. I. Blanco, **J. M. Morales**, "An efficient robust solution to the two-stage stochastic unit commitment problem," in Workshop on "Optimization challenges in the evolution of energy networks to smart grids", University of Coimbra, Portugal, October 27-28, 2016.

44. I. Blanco, **J. M. Morales**, "An efficient robust solution to the two-stage stochastic unit commitment problem," INFORMS Annual Meeting, November 13-16, 2016, Nashville, Tennessee, USA.

45. I. Blanco, **J. M. Morales**, "An efficient robust solution to the two-stage stochastic unit commitment problem," Symposia on Mathematical Techniques Applied to Data Analysis and Processing, May 18-21, 2017, Málaga, Spain.

46. **J. M. Morales**, J. Saez-Gallego, "Short-term Forecasting of Price-responsive Loads Using Inverse Optimization," Symposia on Mathematical Techniques Applied to Data Analysis and Processing, May 18-21, 2017, Málaga, Spain.

47. S. Pineda, **J. M. Morales**, "Capacity Expansion of Stochastic Power Generation under Two-Stage Electricity Markets," Symposia on Mathematical Techniques Applied to Data Analysis and Processing, May 18-21, 2017, Málaga, Spain.

48. G. Migliavacca, M. Rossi, D. Six, M. Džamarija and S. Horsmanheimo, C. Madina, I. Kockar and **J. M. Morales**, "SmartNet: A H2020 project analysing TSO-DSO interaction to enable ancillary services provision from distribution networks," CIRED, June 12-15, 2017, Glasgow, Scotland.

49. I. Blanco, D. Guericke, **J. M. Morales** and H. Madsen, "Decision-making under uncertainty to support the planning of biomass supply," 21st Conference of the International Federation of Operational Research Societies (IFORS), July 17-21, 2017, Quebec City, Canada.

50. K. Daechert, S. Siddiqui, J. Saez-Gallego, S. Gabriel and **J. M. Morales**, "A bicriteria perspective on an L-penalty approach for solving MPECs," 21st Conference of the International Federation of Operational Research Societies (IFORS), July 17-21, 2017, Quebec City, Canada.

51. D. Guericke, I. Blanco, **J. M. Morales** and H. Madsen, "Biomass Supply Planning for Combined Heat and Power Plants using Stochastic Programming," International Conference on Operations Research (OR2017), September 6-8, 2017, Berlin, Germany.

52. K. Daechert, S. Siddiqui, J. Saez-Gallego, S. Gabriel and **J. M. Morales**, "A bicriteria perspective on an L-penalty approach for solving MPECs," International Conference on Operations Research (OR2017), September 6-8, 2017, Berlin, Germany.

53. I. Blanco, D. Guericke, H. Madsen and **J. M. Morales**, "Decision-making Under Uncertainty for Fuel Contracting of Combined Heat and Power Plants," European Conference on Stochastic Optimization 2017 (ECSO2017), September 20-22, 2017, Rome, Italy.

54. R. Zarate-Miñano, M. Carrion, and **J. M. Morales**, "Modeling Correlated Wind Speeds Through Stochastic Differential Equations," INFORMS Annual Meeting 2017, October 22-25, 2017, Houston, Texas, US.

55. C. Ordoudis, P. Pinson, and **J. M. Morales**, "An Integrated Market for Electricity and Natural Gas Systems with Stochastic Power Producers," INFORMS Annual Meeting 2017, October 22-25, 2017, Houston, Texas, US.

56. D. Guericke, I. Blanco, H. Madsen and **J. M. Morales**, "Stochastic Programming for Fuel Supply Planning of Combined Heat and Power Plants," INFORMS Annual Meeting 2017, October 22-25, 2017, Houston, Texas, US.

57. C. Lima, S. Relvas, A. Barbosa-Povoa and **J. M. Morales**, "Oil product distribution planning via robust optimization," Proceedings of the 28th European Symposium on Computer Aided Process Engineering, Vol. 43. Edited by: Anton Friedl, Jiří J. Klemeš, Stefan Radl, Petar S. Varbanov, and Thomas Wallek. Published by: Elsevier B. V., Amsterdam, 2018.

58. **Juan M. Morales** and J. Saez-Gallego, "Predicting the electricity demand response via data-driven inverse optimization," 23rd International Symposium on Mathematical Programming (ISMP), July 1-6, 2018, Bordeaux, France.

59. G. De Zotti, A. Pourmousavi, **J. M. Morales**, H. Madsen and N. K. Poulsen, "Consumers Flexibility Estimation at the TSO Level for Balancing Services," 23rd International Symposium on Mathematical Programming (ISMP), July 1-6, 2018, Bordeaux, France.

60. S. Pineda and **J. M. Morales**, "Chronological Time-Period Clustering for Optimal Capacity Expansion Planning," 23rd International Symposium on Mathematical Programming (ISMP), July 1-6, 2018, Bordeaux, France.

61. M. Zatti, E. Martelli and **J. M. Morales**, "A three-stage stochastic optimization model for the design of smart energy districts under uncertainty," 29th European Conference on Operational Research (EURO2018), Valencia, Spain, 8-11 July 2018.

62. A. Esteban and **J. M. Morales**, "Data-driven distributionally robust optimization with Wasserstein metric, moment conditions and robust constraints," 29th European Conference on Operational Research (EURO2018), Valencia, Spain, 8-11 July 2018.

63. S. Pineda and **J. M. Morales**, "Chronological time-period clustering for optimal capacity expansion planning with storage," 29th European Conference on Operational Research (EURO2018), Valencia, Spain, 8-11 July 2018.

64. I. Blanco, D. Guericke, **J. M. Morales**, H. Madsen and J.-B. Park, "Optimal short-term operation of combined heat and power plants using different operation modes," INFORMS Annual Meeting 2018, Phoenix, Arizona, USA, november 4-7, 2018.

65. M. A. Muñoz, **J. M. Morales**, and S. Pineda, "Data-driven strategies for trading renewable energy production," INFORMS Annual Meeting 2018, Phoenix, Arizona, USA, november 4-7, 2018.

66. S. Pineda, H, Bylling and **J. M. Morales**, "Efficiently solving linear bilevel programming problems using off-the-shelf optimization software," INFORMS Annual Meeting 2018, Phoenix, Arizona, USA, november 4-7, 2018.

67. **J. M. Morales**, R. Fernandez-Blanco and S. Pineda, "A fast algorithm to estimate the cost and the right-hand side parameter vectors in inverse linear optimization," 30th European Conference on Operational Research (EURO), Dublin, Ireland, 23-26th June, 2019

68. A. Porras, R. Fernandez-Blanco, S. Pineda and **J. M. Morales**, "Day-ahead Operation of an Aggregator of Electric Vehicles via Optimization under Uncertainty," 30th European Conference on Operational Research (EURO), Dublin, Ireland, 23-26 June, 2019

69. Giulia De Zotti, Daniela Guericke, S. Ali Pourmousavi, **Juan M. Morales**, Henrik Madsen, and Niels K. Poulsen, "Analysis of rebound effect modelling for flexible electrical consumers," IFAC-PapersOnLine 52, no. 4 (2019): 6-11. Presented at the 2019 IFAC Workshop on Control of Smart Grid and Renewable Energy Systems, Jeju, Korea, June 10-12, 2019.

70. G. De Zotti, S. A. P. Kani, **J. M. Morales** and Henrik Madsen, "Control-based Provision of Ancillary Services by Flexible End-Users," 30th European Conference on Operational Research (EURO), Dublin, Ireland, 23-26 June, 2019.

71. S. Pineda and **J. M. Morales**, "Efficiently Solving Linear Bilevel Programming Problems using Off-the-Shelf Optimization Software," 30th European Conference on Operational Research (EURO), Dublin, Ireland, 23-26 June, 2019.

72. R. Fernández-Blanco, **J. M. Morales** and S. Pineda, "How Can Smart Buildings Be Price-Responsive?," PowerTech 2019, Milan, Italy, 23-27 June, 2019.

73. S. A. Pourmousavi, **J. M. Morales**, and H. Madsen, "Ancillary Services 4.0: One Step Closer to 100% Renewable-Powered Grid," State-of-Energy-Research Conference (SoERC), Canberra, Australia, 3-4 July, 2019.

74. A. Esteban and **J. M. Morales**, "Data-Driven Distributionally Robust Optimization Via Optimal Transport With Order Cone Constraints," The XV International Conference on Stochastic Programming, Trondheim, Norway, 29 July - 2 August 2019.

75. A. Porras, R. Fernandez-Blanco, **J. M. Morales** and S. Pineda, "Day-ahead Operation of an Aggregator of Electric Vehicles via Optimization under Uncertainty," 2nd International Conference on Smart Energy Systems and Technologies (SEST2019), Porto, Portugal, 9-11 September, 2019 (Best Paper Award).

76. S. Wogrin, D. Tejada-Arango, S. Pineda, and **J. M. Morales**, "What time-period aggregation method works best for power system operation models with renewables and storage?" 2nd International Conference on Smart Energy Systems and Technologies (SEST2019), Porto, Portugal, 9-11 September, 2019.

77. **J. M. Morales**, M. Á. Muñoz, and S. Pineda, "A Mathematical Optimization Approach to Enhanced Renewable Energy Forecasting and Trading," INFORMS Annual Meeting 2019, Seattle, USA, 20-23 October, 2019.

78. S. Wogrin, D. Tejada-Arango, S. Pineda, and **J. M. Morales**, "Analyzing Time Period Aggregation Methods For Power System Investment and Operation Models With Renewables and Storage," INFORMS Annual Meeting 2019, Seattle, USA, 20-23 October, 2019.

79. S. Pineda, R. Fernández-Blanco, and **J. M. Morales**, "Time-Adaptive Unit Commitment," INFORMS Annual Meeting 2019, Seattle, USA, 20-23 October, 2019.

80. R. Fernández-Blanco, A. Porras, S. Pineda, and **J. M. Morales**, "A Data-driven Forecasting Model For an Aggregator of Electric Vehicles Via Inverse Optimization," INFORMS Annual Meeting 2019, Seattle, USA, 20-23 October, 2019.

81. A. Jiménez Cordero, **J. M. Morales**, and S. Pineda "A min-max approach to feature selection for nonlinear SVM classification," V Congreso de Jóvenes Investigadores de la RSME, Valencia, Spain, 27-31 January, 2020.

82. A. Jiménez Cordero, S. Pineda, and **J. M. Morales**, "Interpretable Learning in Power System Operations," INFORMS Annual Meeting (online), 7-11 November, 2020.

83. A. Porras, R. Fernández-Blanco, **J. M. Morales** and S. Pineda, "An Efficient Robust Approach to the Day-ahead Operation of an Aggregator of Electric Vehicles," INFORMS Annual Meeting (online), 7-11 November, 2020.

84. S. Pineda, **J. M. Morales** and A. Jiménez Cordero, "Data-driven Screening of Network Constraints for Unit Commitment," INFORMS Annual Meeting (online), 7-11 November, 2020.

85. M. Á. Muñoz, S. Pineda and **J. M. Morales**, "Optimal Strategy of a Cournot Firm through Profit-Driven Learning," INFORMS Annual Meeting (online), 7-11 November, 2020.

86. **J. M. Morales**, R. Fernández-Blanco and S. Pineda, "A Homothetic Inverse Optimization Approach to Forecast the Price-response of a Pool of Buildings," INFORMS Annual Meeting (online), 7-11 November, 2020.

87. A. Esteban-Pérez and **J. M. Morales**, "Distributionally Robust Prescriptive Analytics based on Optimal Transport," INFORMS Annual Meeting (online), 7-11 November, 2020.

88. A. Jiménez Cordero, **J. M. Morales**, and S. Pineda, "A min-max approach to feature selection for nonlinear Support Vector Machine classification," Jornadas SEIO 2021 de la Sociedad de Estadística e Investigación Operativa, Granada (online), Spain, 9-11 June, 2021.

89. S. Pineda, **J.M. Morales**, A. Jiménez-Cordero, "Data-Driven Screening of Network Constraints for Unit Commitment," PowerTech Conference, Madrid, Spain, June 28 - July 2, 2021.

90. S. Pineda, R. Fernández-Blanco, **J. M. Morales**, "Time-adaptive unit commitment," PowerTech Conference, Madrid, Spain, June 28 - July 2, 2021.

91. A. Porras, R. Fernández-Blanco, **J.M.Morales**, S. Pineda, "An Efficient Robust Approach to the Day-Ahead Operation of an Aggregator of Electric Vehicles," PowerTech Conference, Madrid, Spain, June 28 - July 2, 2021.

92. M. A. Muñoz, **J. M. Morales**, S. Pineda, "Data-driven Strategies For Trading Renewable Energy Production," PowerTech Conference, Madrid, Spain, June 28 - July 2, 2021.

93. S. Pineda, **J. M. Morales**, Y. Dvorkin, "Learning-based Coordination of Transmission and Distribution Operations," The 31th European Conference on Operational Research (EURO), Athens, Greece, 11-14 July, 2021.

94. **J. M. Morales**, "Data-driven power systems," The 31th European Conference on Operational Research (EURO), Athens, Greece, 11-14 July, 2021. **Keynote speaker**.
95. A. Esteban-Pérez, **J. M. Morales**, "Distributionally robust optimization with side information based on probability trimmings and optimal transport," The 31th European Conference on Operational Research (EURO), Athens, Greece, 11-14 July, 2021.
96. M. A. Muñoz, S. Pineda, **J. M. Morales**, " A bilevel framework for decision-making under uncertainty with contextual information," The 31th European Conference on Operational Research (EURO), Athens, Greece, 11-14 July, 2021.
97. A. Jiménez Cordero, **J. M. Morales**, and S. Pineda, "Improving the performance of machine learning in the solution of MILPs," The 31th European Conference on Operational Research (EURO), Athens, Greece, 11-14 July, 2021.
98. Á. Porras, S. Pineda, **J.M. Morales**, and A. Jiménez Cordero, "Cost-aware constraint screening for the Unit Commitment Problem," The 31th European Conference on Operational Research (EURO), Athens, Greece, 11-14 July, 2021.
99. Á. Porras, S. Pineda, **J. M. Morales**, and A. Jiménez Cordero, "Cost-aware constraint screening for the unit commitment problem", INFORMS 2021 Anaheim, CA. USA, 24 - 27 October 2021.
100. **J.M. Morales** , M.Á. Muñoz and S. Pineda, "Contextual merit-order dispatch under uncertain supply", INFORMS 2021 Anaheim, CA. USA, 24 - 27 October 2021.
101. A. Elías, **J.M. Morales** and S. Pineda, "Depth-based outlier detection for grouped smart meters: a functional data analysis toolbox" INFORMS 2021 Anaheim, CA. USA, 24 - 27 October 2021.
102. S. Pineda, **J.M. Morales** and Y. Dvorkin "Learning-based coordination of transmission and distribution operations" INFORMS 2021 Anaheim, CA. USA, 24 - 27 October 2021.
103. A. Jiménez-Cordero, **J.M. Morales** and S.Pineda, "An offline-online strategy to improve MILP performance via Machine Learning tools" New Bridges between Mathematics and Data Science Red Estratégica de Matemáticas (REM), Valladolid, Spain, 8-11 November, 2021.

CONTRIBUTIONS TO EDUCATION CONFERENCES

1. **J. M. Morales**, B. Olea, M. Atencia, N. Madrid, "Fostering the cooperative learning of mathematics in engineering schools through the Teacher-Apprentice group dynamics," 7th Teaching & Education Conference, London, UK. 21-24 May 2019 (Best Paper Award)

INVITED TALKS

1. Short-term trading for a wind power producer in an electricity market. Department of Statistics at Universidad Carlos III de Madrid, Madrid, Spain, March 2012.
2. Short-term trading for a wind power producer in an electricity market. Seminar Series in Energy & Stochastics. DTU Informatics, Kgs. Lyngby, March 2012.
3. Clearing Day-ahead Electricity Markets with Stochastic Production. In PowerEvent "Designing 100% Renewable Energy Systems." DTU Elektro, Kgs. Lyngby, September 2012.
4. Clearing Day-ahead Electricity Markets with Stochastic Production. Seminar Series in Recent Research Results in Operations Research. DTU Management Engineering, Kgs. Lyngby, November 2012.
5. Electricity Market Clearing Under Uncertainty and Its Impact on Investments. Departamento de Análisis Económico: Economía Cuantitativa, Universidad Autónoma de Madrid (UAM), March 2013.
6. Solutions to Integrate Renewable Electricity Production into Current Power Systems. Departamento de Ingeniería de Organización, Administración de Empresas y Estadística, Universidad Politécnica de Madrid, March 2013.
7. Integración técnica de las energías renovables en el sistema (Chairman). Workshop on "Paradigmas de la integración técnica y económica de las energías renovables en el sistema eléctrico." E. T. S. Ingenieros Industriales, Universidad Técnica de Madrid (Sponsored by Energía y Sociedad, Iberdrola), March 2013.
8. Scheduling stochastic production in spot markets using probabilistic forecasts. Marcus Evans Conferences, "Weather Risk Management for the Energy Markets," Berlin, June 2013.
9. Clearing forward markets based on forecasts of stochastic production. WINDINSPIRE first international workshop on "Wind Energy Intermittency: From Wind Farm Turbulence to Economic Management," Technical University of Denmark, June 24-25, 2013.
10. A Methodology to Identify Competitive Wind Locations. Workshop on "Optimization and the Smart Grid," Technical University of Denmark (DTU Compute), August 15, 2013.

11. OR models for power trading, market design, and impact on investments. Sixth annual workshop on "Applications of Optimization − Best Practice and Challenges", Danish Operations Research Society (DORS), June 2, 2014.
12. Market design for power systems with a high penetration of renewable energy sources. Workshop on "Renewable Energy and Electricity Markets", organized and funded by ELECNOR – UPM University Chair, Madrid, Spain, May 29-30, 2014.
13. Generation Dispatch Strategies for Power Systems with a High Penetration of Weather-Driven Renewables. Workshop on "Intermittent Renewables, Balancing Power and Electricity Market Design", organized by the Norwegian School of Economics, Hardingasete, Norway, August 25-27, 2014.
14. OR Models for Smart Energy Systems (Keynote speaker). Siemens/DTU CKI Technology Workshop, Kgs. Lyngby, Denmark, September 19, 2014.
15. Operations Research Models for Smart Energy Systems. *Colloquium on Mathematics and Computer Science*, DTU Compute, Kgs. Lyngby, Denmark, May 2015.
16. A data-driven bidding model for a cluster of price-responsive consumers of electricity. Workshop on "Mathematical Sciences Collaboration in Energy Systems Integration", Technical University of Denmark, Kgs. Lyngby, 24-25 September, 2015.
17. Mechanisms to Increase the Efficiency of Two-stage Electricity Markets with Uncertain Supply. Invited lecture at the DTU Summer School on "Uncertainty in Electricity Markets and System Operation". Kgs. Lyngby, Denmark, July 7, 2016.
18. Predicting the Electricity Demand Response via Data-driven Inverse Optimization. Invited speaker within the workshop on "Demand Response and Energy Storage Modeling", Faculty of Electrical Engineering and Computing, University of Zagreb, Zagreb, Croatia, June 19, 2018.
19. Predicting via data-driven inverse optimization: Application to power demand forecasting. Invited speaker within the workshop on "Data Science", Instituto de Matemáticas de la Universidad de Sevilla, Spain, September 13-14, 2018.
20. Power demand forecasting and demand-side bidding via data-driven inverse optimization. Invited speaker for the seminar series organized by the Center for Operations Research and Econometrics (CORE), Université Catholique de Louvain, Belgium, October 16, 2018.
21. Efficiently solving linear bilevel programming problems using off-the-shelf optimization software. Invited speaker at the Center for Electric Power and Energy (CEE) of the Technical University of Denmark, December 13, 2018, Kgs. Lyngby, Denmark.
22. Electricity demand forecasting and bidding via data-driven inverse optimization. Invited speaker for the Workshop "Flexible operation and advanced control for energy systems" organized by the *Isaac Newton Institute for Mathematical Sciences*, January 7-11, 2019, Cambridge, UK.
23. Contextual decision-making under uncertainty, Online Seminar Series Machine Learning NeEDS Mathematical Optimization, IMUS, March 22, 2021.

IMPACT

Citations (as of June, 2022)

ISI Web of Knowledge	∼4735 (h-index = 29)
Scopus	∼5496 (h-index = 32)
Google Scholar	∼10179 (h-index = 38)

Percentage of self-citations < 2.5%

PROJECTS

European level

- **FlexAnalytics** (2018-2023): "Advanced analytics to empower the small flexible consumers of electricity." Principal Investigator. Total project budget: 1.203.125 €.
- **SmartNet** (2016-2018): Leader of work package "Market architectures to integrate ancillary services from distributed energy resources." Total project budget: 12.657.938 €.
- **uGRIP** (2016-2018): Leader of work packages "Microgrid Operation Modeling" and "Market Aspects." Total project budget: 775.568 €.

Spanish level

- **Mathematical Optimization Methods for Decision Making Using Contextual Information** (2021-2022) Principal Investigator. Total project budget: 66.000 €.
- **DYCON**: Data-driven Optimization Under a Dynamic Context (2021-2024) Dual Principal Investigator. Total project budget: 96.800 €.
- **Mathematics for Imperfect Information** (2019-2021)
- **SAND** (2018-2019): Smart Distribution Grid Simulator. Principal Investigator.
- **PowerMath** (2018-2020): Mathematical Methods for Data-driven Power Systems. Principal Investigator.
- **OD^{2}ES** (2017-2018): Decision-Making with Big Data - Applications to Renewable Energy Systems. Principal Investigator.
- **RSAES** (2007): Risk and security assessment of electricity supply
- **IFERSE** (2008-2010): Technical and economic assessment of the integration of renewable energy sources in a power system
- **RiskMEM** (2010-2012): Tools for risk management in electricity markets
- **RTRinv** (2011-2013): Development of models and tools to identify the optimal investment in renewable non-dispatchable electric energy plants and the transmission network reinforcement/expansion required to absorb the production of such non-dispatchable plants

- **O&P100%REES** (2013-2015): Design of models for both the operations (one day to one week time horizon) and the expansion planning (five- to twenty-year time horizon) of electric energy systems that integrate solely, or almost solely, renewable production sources, a desirable future situation.
- **PLANRED** (2015-2017): Expansion planning of power distribution networks considering renewable power sources, storage, electric vehicles and demand response.

Danish level
- **OSRNordic** (2010-2013): Determination of the optimal spinning reserve of power systems considering the forecasting error of the load and the wind power generation within a market environment
- **ENSYMORA** (2011-2014): Methods and models to identify technical options, economic incentives, and policies related to both demand and supply of electricity. Special emphasis is placed on tools to address the challenges of a fossil-free energy system
- **iPower** (2013-2015): Development and socio-economic evaluation of control schemes for demand side units in industry and households supporting flexible power consumption
- **'5s'** - Future Electricity Markets (2013-2017): Research in the design of future electricity markets, with focus on market clearing mechanisms, demand-side management, capacity investment, etc.
- **CITIES – Centre for IT-Intelligent Energy Systems in Cities** (2014-2019): Leader of work package 7 "Decision Making and Support Systems" (development of decision-making models for the optimal market participation of energy companies in smart cities, given the flexibility and controllability of the loads and production, transmission, storage and conversion resources that form energy companies' portfolios).

Industrial/Collaborative projects
- **Technical and economic assessment of incorporating concentrated photovoltaic power plants into an electric energy system** (2008): Collaborative project with "Instituto de Sistemas Fotovoltaicos de Concentración" (ISFOC)

GRANTS AND
AWARDS

Grants
- **ERC Starting Grant 2017** granted by the European Research Council for FlexAnalytics: Advanced analytics to empower the small flexible consumers of electricity.
- **Ramón y Cajal Fellowship** granted by the Spanish Ministry of Economy and Competitiveness, Spain, August 2016 (declined in favor of an Associate Professorship position at the University of Málaga, Spain).
- **Hans Christian Ørsted Postdoc Fellowship** granted by the Technical University of Denmark, Lyngby, Denmark. July 2011-July 2013 (24 months)
- Grant awarded by the Government of Castilla – La Mancha for staying during 3 months in the Department of Informatics and Mathematical Modelling at the Technical University of Denmark, Lyngby, Denmark. July-October 2010
- **Four Research Grants** awarded by the University of Castilla – La Mancha in 2007, 2008, 2009, and 2010, respectively
- Grant awarded by the Government of Castilla – La Mancha for staying during 2 months in the Department of Electrical and Computing Engineering at the McGill University, Montreal, Canada September-October 2007
- **PhD Grant** awarded by the Spanish Ministry of Science and Technology. April 2007
- **PhD Grant** awarded by the Government of Castilla – La Mancha. January 2007-December 2010 (48 months)
- **Undergraduate Grant** awarded by the Spanish Ministry of Education and Science to research into the Department of Electrical Engineering at the University of Málaga, Málaga, Spain. Academic year 2005/2006 (9 months)

Awards and recognitions
- The German Society for Operations Research GOR Young Researchers Award 2021 in collaboration with Fraunhofer ITWM, Kaiserslautern to D. Guericke for the article D. Guericke, I. Blanco, **J. M. Morales** and H. Madsen (2020). A two-phase stochastic programming approach to biomass supply planning for combined heat and power plants, *OR Spectrum*, 42: 863–900. GOR Virtual Annual Conference, 2021
- Ranked in the top of the global list of researches with the highest number of citations according to the study conducted by Stanford University in 2020 [Ioannidis, J.P.A., Boyack, K.W. & Baas, J. (2020). Updated science-wide author databases of standardized citation indicators. *PLoS Biology*, 18(10): e3000918. https://doi.org/10.1371/journal.pbio.3000918]
- Best Contribution to Operational Research awarded by The Spanish Statistics and Operational Research Society (SEIO) - BBVA Foundation Awards to **S. Pineda** and **J.M. Morales**, July 2020.
- X Research Awards prize for "Chronological Time-Period Clustering for Optimal Capacity Expansion Planning With Storage", **S. Pineda** and **J.M. Morales** in the field of Engineering and Architecture - Young Researcher Award - FGUMA, May 2020.

- Best paper award at 2nd International Conference on Smart Energy Systems and Technologies (SEST2019), September 2019 to **Á. Porras, R. Fernández-Blanco, J.M. Morales** and **S. Pineda**.
- Otto Mønsteds 2016: Travel award for participation in the IEEE PES General Meeting, 2016, Boston, Massachusetts (US).
- Otto Mønsteds 2015: Travel award for participation in the INFORMS Annual Meeting, 2015, Philapdelphia (US).
- Outstanding reviewer for IEEE Transactions on Power Systems
- Otto Mønsteds 2012: Travel award for participation in the INFORMS Annual Meeting, 2012, Phoenix, AZ (US).
- Award from the School of Industrial Engineers of University of Málaga, Spain, as the best graduated in the academic year 2005/2006
- "Diario el País" award from the University of Málaga, Spain, as the best graduated in the field of engineering disciplines in the academic year 2005/2006

Teaching

May 2022: 20-hour PhD/MSc course *Optimization Under Uncertainty in Power Systems.* School of Electrical and Information Engineering, Graz University of Technology
2020-2021: MSc. course in Industrial Engineering, *Broad Mathematics* School of Industrial Engineering, University of Málaga
2020-2021: Degree course in Mechanical Engineering, *Linear Algebra* School of Industrial Engineering, University of Málaga
2019-2020: MSc. courses in Industrial Engineering, *Broad Mathematics and Master's Final Project*, School of Industrial Engineering, University of Málaga
2019-2020: Degree course in Electrical Engineering, *Linear Algebra*, School of Industrial Engineering, University of Málaga
2018-2019: Degree course in Mechanical Engineering, *Calculus* School of Industrial Engineering, University of Málaga
2017-2018: Degree course in Industrial Design and Product Development, *Vector Analysis and Statistics*, School of Industrial Engineering, University of Málaga
2017-2018: Degree course in Mechanical Engineering, *Calculus* School of Industrial Engineering, University of Málaga
2017-2018: Degree course in Electrical Engineering, *Linear Algebra and Calculus* School of Industrial Engineering, University of Málaga
2016-2017: MSc. course in Industrial Engineering *Master's Dissertation*, School of Industrial Engineering, University of Málaga
2016-2017: Degree course in Industrial Design and Product Development *Calculus* School of Industrial Engineering, University of Málaga
2016-2017: Degree course in Industrial Design and Product Development *Vector Analysis and Statistics* School of Industrial Engineering, University of Málaga
2016-2017: Degree course in Audio and Visual Engineering *Statistics and Numerical Methods* School of Industrial Engineering, University of Málaga
2016: Special course (5 ECTS) "Modeling via multi-level optimization" held at DTU Compute
2016: MSc. course 02435 (5 ECTS) "Decision making under uncertainty in electricity markets" held at DTU Compute (students' course evaluation 4.6/5)
2014: MSc. course 02435 (5 ECTS) "Decision making under uncertainty in electricity markets" held at DTU Compute (students' course evaluation 4.9/5)
2014: Special course (5 ECTS) "Modeling via multi-level optimization" held at DTU Compute
2014: Special course (5 ECTS) "Optimization in energy systems" held at DTU Compute
2013: Course (18 hours) "Toma de Decisiones bajo Incertidumbre en Mercados Eléctricos" held at E. T. S. Ingenieros Industriales, Universidad Politécnica de Madrid
2012: Special course (5 ECTS) "Tools for decision making under uncertainty in electricity markets" held at DTU Informatics (Institute of Mathematical Modelling)
2011: Special course (5 ECTS) "Economic MPC of an EV with stochastic disturbance" held at DTU Informatics (Institute of Mathematical Modelling)
2011: Summer course *Electricity market design and operation: An in-depth introduction*, organized by the Centre for Electric Technology (CET) of the Technical University of Denmark - Lecture on stochastic programming and optimization for electricity markets
2010: Lecture on challenges related to the large-scale integration of wind generation in power systems for undergraduate students at the University of Castilla – La Mancha, School of Industrial Engineers, Spain
2010: Electrotechnics (3 hours), fifth year of the Civil Engineering degree at the Civil Engineering and City and Regional Planning School, University of Castilla – La Mancha, Spain

Courses for Teachers

2013: Course "The PhD Supervision Process: Methods and Tools" provided by LearningLab DTU
2013: Course "Supervision of PhD students at DTU" provided by LearningLab DTU
2012-2014: Course "Education in University Teaching at DTU" (UDTU) provided by LearningLab DTU

Supervision

Postdoc researchers

- Concepción Domínguez Sánchez (2021-...)
- Antonio Eliás Fernández (2020-...)
- María Asunción Jiménez Cordero (2019-2022)
- Ricardo Fernández-Blanco Carramolino (2018-2020)
- Mario Dzamarija (2016)
- Marco Zugno (2013-2014)

Ph.D. students

- Álvaro Porras Cabrera (with Dr. S. Pineda): *Enhancing Power System Operation through Learning* (2020-2024)
- Jesús Huete Cubillo (with Dr. S. Pineda and Dr. Y Bravo (Bettergy)): *Analysis, design and implementation of optimisation and control algorithms for the efficient management of energy consumption in buildings* PhD with industrial mention under a Framework collaboration agreement between the University of Malaga, the research group OASYS and the host technology company Bettergy. (2020-2024)
- Adrián Esteban Pérez. *Data-driven Decision-making Under Uncertainty* (2018-2022)
- Miguel Ángel Muñoz Díaz. *Leveraging Big Data in Power System Operation* (2018-2022)
- Giulia De Zotti: *Leveraging Consumers' Flexibility for the Provision of Ancillary Services* (2016-2019)
- Ignacio Blanco Íñigo: *Decision-making Under Uncertainty for the Operation of Integrated Energy Systems* (2015-2018)
- Christos Ordoudis (with Prof. P. Pinson): *Market-based Approaches for the Coordinated Operation of Electricity and Natural Gas Systems* (2015-2018)
- Qi Wang (with Prof. P. Pinson): *System-wide socio-economic impact of proactive management of distribution grids and demand response* (2013-2016)
- Stefanos Delikaraoglou (with Prof. P. Pinson and Dr. Kai Heussen): *Effective Modelling of Balancing Power in View of Market Dynamics and Transmission System Constraints* (2013-2016)
- Javier Sáez Gallego (with Prof. H. Madsen): *Managing energy systems with a high penetration of distributed energy resources* (2012-2015)
- Jan Emil Banning Iversen (with Prof. H. Madsen and Dr. J. K. Møller): *Probabilistic Approaches to Energy Systems* (2011-2014)
- Marco Zugno (with Prof. P. Pinson and Prof. Henrik Madsen): *Optimization Under Uncertainty for Management of Renewables in Electricity Markets* (2010-2013)

M.Sc. students

- Jesús Huete Cubillo: *Aplicaciones de la Ciencia de Datos en el Análisis y Predicción de la Demanda de Energía Eléctrica* (2019).
- Daniel Sánchez González: *Dynamic modeling and Control of a Commercial Premises* (2017).
- Ignacio Blanco Íñigo (with Dr. M. Zugno): *Power System Dispatch Combining Stochastic Programming and Robust Optimization* (2014-2015).
- Anna Hellmers (with Dr. Anders Skajaa and Dr. M. Zugno): *Optimizing Electricity Market Trading for Wind Turbines and CHPs* (2014). In collaboration with DONG Energy.
- Maria Nielsen (with Prof. H. Madsen and Dr. M. Zugno):*Probabilistic forecasting and optimization in CHP systems* (2014). In collaboration with HOFOR, COWI, and ENFOR.
- Christos Ordoudis (with Prof. P. Pinson and Dr. M. Zugno):*Decomposition techniques for large scale market clearing* (2014)
- Javier Sáez Gallego (with Prof. H. Madsen): *Probabilistic forecasting and optimal spinning reserves* (November 2012)
- Bjarke Durhuus (with Prof. H. Madsen and Dr. K. M. Rasmussen): *Optimal bidding strategies for generation portfolios in electricity markets* (September 2012)
- Stefanos Delikaraoglou (with Prof. P. Pinson): *Optimal wind portfolio investment in view of uncertainties in power predictions and market dynamics* (September 2012)
- Marta Sánchez Maroto (with Prof. Antonio J. Conejo and Mr. Luis Baringo): *Impact of non-dispatchable generation on regulating power plants* (April 2011)
- Luis Baringo Morales (with Prof. Antonio J. Conejo and Dr. Roberto Mínguez): *Probabilistic power flow with non-dispatchable generation* (July 2009)

Research Assistants

- Manuel Garrido Martín developing mathematical methods and solutions for sustainable energy systems (2021-...)
- José Martín Gómez de la Varga currently working on contextual information in state estimation (2020-...)
- Álvaro Raya Fernández, worked on mathematical models for electric vehicle aggregators (2020-2021)
- Jesús Huete Cubillo, worked on the analysis and forecasting of the consumption of pool of price-responsive households (2019).
- Álvaro Porras Cabrera, dealt with the problem of operating an aggregation of electric vehicles in a residential district (2018-2019).
- Miguel Ángel Muñoz Díaz, focused on data-driven methods for forecasting and trading renewable energy production (2018-2019).

- Ignacio Blanco Íñigo, addressed the unit commitment problem under wind power uncertainty combining stochastic programming and robust optimization (April-June 2015).
- Anna Hellmers, worked on developing optimal strategies for a portfolio of wind farms and CHP plants in a two-price balancing market (November 2014).
- Maria Nielsen, conducted the economic valuation of heat pumps and electric boilers in the Danish energy system (November 2014).

Ph.D. guests
- Mirna Gržanić (University of Zagreb, Faculty of Electrical Engineering and Computing, Zagreb, Croatia): *Models of flexible distributed end-users and active distribution networks* (Sep.-Dec. 2018), PhD. Supervisors: Dr. Tomislav Capuder.
- Amin Shokri (Universidad de Salamanca, BISITE Group, Salamanca, Spain): *Virtual Organizations for Multi Agent-based Transactive Energy Systems in Building Management* (July 2017), PhD. Supervisors: Prof. Juan M. Corchado and Dr. Francisco Prieto-Castrillo.
- Matteo Zatti (Politecnico di Milano, Milan, Italy): *Optimal Design of Energy Districts Under Uncertainty* (March 2017), PhD. Supervisors: Prof. Federico Colombo and Dr. Emanuele Martelli.
- Yu Hu (Universidad Politécnica de Madrid, Madrid, Spain): *Optimization of hybrid diesel-wind generation plants* (October 2013–December 2013), PhD. Supervisors: Dr. Pablo Solana and Dr. María Jesús Sánchez.

PhD.
EVALUATION
COMMITTEE

- Edoardo Menga, "Uncertainty Quantification and Global Sensitivity Analysis in Computational Mechanics," Universidad Politécnica de Madrid, December 2020

- Matteo Zatti, "Optimal Design of Urban Energy Districts under Uncertainty," Politecnico di Milano, June 2019

- Mª Asunción Jiménez Cordero, "Classification and Regression with Functional Data – A Mathematical Optimization Approach," Universidad de Sevilla, February 2019

- Carlos David Zuluaga R., "Topics in Bayesian Inference applied to Probabilistic Power Flow Analysis", Universidad Tecnológica de Pereira, July 2018.

- Nicòlo Mazzi, "Optimal Offering and Operating Strategies in Electricity Markets," Università degli Studi di Padova, November 2017.

- Shariq Riaz, "Generic Market Modelling for Future Grid Scenario Analysis", The University of Sydney, October 2017.

- Guadalupe Bastos, "Contributions to Time Series Factor Modeling: Model Averaging and Bias Correction", Universidad Carlos III de Madrid, May 2017.

- Sindri Magnusson, "Distributed Optimization with Nonconvexities and Limited Communication", Licentiate Thesis, KTH Electrical Engineering, Stockholm, Sweden, February 2016.

- Laura Standardi, "Economic model predictive control for large-scale and distributed energy systems", Chair of the PhD. Committee, Technical University of Denmark, Denmark, February 2015.

- Ricardo Fernández-Blanco Carramolino, "Price-based market clearing in pool-based electricity markets", Universidad de Castilla - La Mancha, Spain, October 2014.

- Miriam Bueno Lorenzo, "Economic effects of a high share of renewable energies on power systems", Universidad Carlos III de Madrid, Spain, March 2014.

SERVICE

Journal editor

Springer Journal of Spanish Society of Statistics and Operations Research (TOP) since January 2020

IEEE Transactions on Power Systems (from January 2019).

Sustainable Energy Grids and Networks (SEGAN) (from August 2017 to July 2019). Previously Associate Editor, from May 2016.

Journal referee

Nature Communications, Mathematical Programming, The International Journal of Management Science (OMEGA), European Journal of Operational Research, IEEE PES Letters, IEEE Transactions on Power Systems, IEEE Transactions on Industrial Informatics, IEEE Transactions on Smart Grid, Energy Policy, IET Generation, Transmission & Distribution, IET Renewable Power Generation, Applied Energy, Wind Energy, The Energy Journal, IEEE Transactions on Sustainable Energy, Network & Spatial Economics, International Journal of Electrical Power and Energy Systems, Optimization and Engineering, Energy Economics, TOP, International Journal of Production Economics, Journal of Global Optimization, Future Generation Computer Systems

Conference referee

IEEE PES General Meeting (since 2010), 2011 European Energy Market Conference

Others

Member of the Program Committee of the EURO 2022, Espoo, Finland, 3-6 July 2022 (`https://euro2022espoo.com/`).

Member of the Technical Program Committee of the 3rd Smart Energy Systems and Technologies Conference 2020 (SEST 2020), Istanbul, Turkey, 7-9 September 2020 (`https://www.sest2020.org/`).

Member of the Technical Program Committee of the 2nd Smart Energy Systems and Technologies Conference 2019 (SEST 2019), Porto, Portugal, 9-11 September 2019 (`https://web.fe.up.pt/~sest2019/`).

Member of working group HR Excellence in Research University of Málaga, 2021 - present.

Member of the Committee for the Transfer of Research, University of Málaga, 2021 - present.

Chair of the session "Modeling and Simulation I," The 2nd Smart Energy Systems and Technologies Conference 2019 (SEST 2019), Porto, Portugal, 9-11 September 2019 (`https://web.fe.up.pt/~sest2019/`).

Chair of the session "Novel data-driven OR techniques for power system operations and planning," 23rd International Symposium on Mathematical Programming (2018) (ISMP2018, `https://ismp2018.sciencesconf.org/`)

Chair of the session "OR Models for the Operation and Planning of Integrated Energy Systems," 29th European Conference on Operational Research (2018) (EURO2018, `http://euro2018valencia.com/`).

Chair of the session "Forecasting and Optimization Under Uncertainty I" within the Symposia on Mathematical Techniques Applied to Data Analysis and Processing (SMATAD), Málaga, Spain, May 18-21, 2017.

Conference chair (together with Dr. Nicolás Madrid) of the Symposia on Mathematical Techniques Applied to Data Analysis and Processing (SMATAD), Málaga, Spain, May 18-21, 2017.

Member of the Technical Program Committee of IEEE EnergyCon 2016 (`http://www.ieee-energycon2016.org/`).

Chair of the session "Distribution Operation and Control 3," IEEE International Energy Conference 2016 (EnergyCon 2016, `http://www.ieee-energycon2016.org/`).

Remote referee for the Netherlands Organisation for Scientific Research, 2015

Participant in the European ICT COST Action TD1207 "Mathematical Optimization in the Decision Support Systems for Efficient and Robust Energy Networks." I am in the action management committee (as substitute) on behalf of Denmark (Action website `http://cost-td1207.zib.de/`)

Member of the Technical Program Committee of EnergyCon 2014 (`www.energycon2014.org`).

Chair of the session "Facilitating the Participation of Stochastic Energy Resources in Electricity Markets," INFORMS 2013 Annual Meeting, October 6-9, 2013, Minneapolis, US

Chair of the session "Multi-level Programming and Equilibrium Models in Electricity Markets," 20th Conference of the International Federation of Operational Research Societies (IFORS), Barcelona, 13th-18th July, 2014

External evaluator for the award to the best two papers written by young researchers in the Department of Economics and Management of the University of Brescia, Italy, 2014

Organizer of the seminar series in DTU Compute "Mathematics and Informatics for Intelligent Energy Systems", which covers various disciplines and topics such as optimization, forecasting, control, stochastic modeling, data mining, machine learning, etc., in the field of energy systems (2014)

Outstanding reviewer for the IEEE Transactions on Power Systems (2014)

OTHER INFORMATION

Member of the following institutes:

- Power Engineering Society of the Institute of Electrical and Electronics Engineers (IEEE), *Senior Member*
- Institute for Operations Research and the Management Sciences (INFORMS)
- Spanish Society of Statistics and Operations Research (SEIO)
- The Spanish Network for Mathematics Industry (math-in)