

# Short Curriculum Vitae

Rodrigo Moreno

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## **Summary:**

I am an Assistant Professor at the Dept. of Electrical Engineering of the University of Chile, where am also affiliated with 3 major research centres: The Energy Centre, The Solar Energy Research Centre (SERC) and The Institute for Complex Engineering Systems (ISCI). I formerly completed my BSc.Eng and MSc.Eng (summa cum laude) working with Prof. Hugh Rudnick at Pontificia Universidad Catolica de Chile, and my PhD and post-doctoral research working with Prof. Goran Strbac at Imperial College London. My research focuses on the application of stochastic and robust optimisation models and concepts for planning and implementing reliable and economic smart, low-carbon energy systems.

I have participated in various research projects for institutions like Conicyt (a Chilean research council), EPSRC (a British research council), EPRI, the European Commission, UK and Chilean Governments, the World Bank, and several system operators and electricity and gas companies in EU and the Americas.

I have authored/co-authored more than 45 papers published in journals and conferences proceedings and am a regular reviewer of 8 internationally recognised journals of IEEE, IET and Elsevier. I have organised a number of technical activities in IEEE, CIGRE and Operational Research conferences. I have been a member of the steering committee of the youth branch of CIGRE in the UK (CIGRE NGN) and am the current Chair of the Latin American Infrastructure Working Group of the Power and Energy Society of IEEE.

**Qualifications:**

- 10/2007-03/2012 PhD. in Power Systems, Imperial College London, UK.
- Supervisor: Prof. Goran Strbac.
  - Sponsor: Beca Presidente de la República de Chile, Conicyt.
- 03/2004-12/2005 Master of Engineering Sciences, Pontificia Universidad Católica, Chile.
- Supervisor: Prof. Hugh Rudnick.
  - Grade: 1st Class Honours (with highest honour / summa cum laude).
- 03/1998-12/2005 Civil Engineer of Industry with Major in Electrical Engineering, Pontificia Universidad Católica, Chile.
- Grade: 1st Class Honours (with highest honour / summa cum laude).

**Academic and professional posts:**

- 06/2013-present Assistant Professor (full time); Lectureship position at the Electrical Department of Universidad de Chile and its Energy Centre. Research activities include: Application of stochastic and robust optimisation for planning and implementing reliable and economic smart, low carbon energy systems.  
<http://ingenieria.uchile.cl/english>
- 09/2011-2017 Research Associate (full time until 2013, then part time); Post-doctoral work at Imperial College, London. Research activities include: Application of stochastic and robust optimisation for planning and implementing reliable and economic smart, low-carbon energy systems.  
<http://www3.imperial.ac.uk/electricalengineering>
- 03/2007-07/2007 Adjunct Professor (part time) at the Industrial Engineering Department of Universidad Adolfo Ibáñez. Course taught: Energy Management.
- 08/2004-07/2005 Adjunct Professor (part time) at the Electrical Engineering Department of Pontificia Universidad Católica. Course taught: Circuits Analysis (IEE-1122).
- 03/2004-09/2007 Analyst and Project Leader (full time) at Systeem Engineering and Design, work involved power system simulation and modelling in the Latin American context.

**Relevant publications:** (full list at <https://sites.google.com/site/rmorenov/publica>)

1. Pipelzadeh, Y., Moreno, R., Chaudhuri, B., Strbac, G., and Green, T.C., "Corrective Control with Transient Assistive Measures: Value Assessment for Great Britain Transmission System", IEEE Transactions on Power Systems, Vol 32, Issue 2, pp 1638-1650, Mar 2017.
2. Strbac, G., Kirschen, D., and Moreno, R., "Reliability Standards for the Operation and Planning of Future Electricity Networks", Foundations and Trends® in Electric Energy Systems", Vol 1, Issue 3, pp 143–219, 2016.
3. Perez, A., Moreno, R., Moreira, R., Orchard, M., and Strbac, G., "Effect of Battery Degradation on Multi-Service Portfolios of Energy Storage", IEEE Transactions on Sustainable Energy, Vol 7, Issue 4, pp 1718 - 1729, Oct 2016.
4. Inzunza, A., Moreno, R., Bernales, A., Rudnick, H., "CVaR Constrained Planning of Renewable Generation with Consideration of System Inertial Response, Reserve Services and Demand Participation", Energy Economics, Vol 59, pp 104 - 117, Sep 2016.
5. Flores-Quiroz, A., Palma-Behnke, R., Zakeri, G., and Moreno, R., "A Column Generation Approach for Solving Generation Expansion Planning Problems with High Renewable Energy Penetration", Electric Power Systems Research, Vol 136, pp 232 - 241, Jul 2016.
6. Moreira, R., Moreno, R., and Strbac, G., "The Value of Corrective Network Security for Distributed Energy Storage Applications", IET Generation, Transmission & Distribution, Vol 10, Issue 7, pp 1758 - 1767, May 2016.
7. Pereira-Bonvallet, E., Puschel-Lovengreen, S., Matus, M., Moreno, R., "Optimizing hydrothermal scheduling with non-convex irrigation constraints: Case on the Chilean electricity system", Energy Procedia, Volume 87, pp 132–140, Jan 2016.
8. Strbac, G., Konstantinidis, C., Moreno, R., Konstantelos, I., and Papadaskalopoulos, D., "It's All About Grids: The Importance of Transmission Pricing and Investment Coordination in Integrating Renewables", IEEE Power and Energy Magazine, Vol 13, Issue 4, pp 61 - 75, Jul 2015.
9. Moreno, R., Moreira, R., and Strbac, G., "Optimising Multi-Service Portfolios of Distributed Energy Storage", Applied Energy, Vol 137, pp 554–566, Jan 2015 (Special Issue in Energy Storage, journal's impact factor of 5.597).
10. Strbac, G., Pollitt, M., Vasilakos, C., Konstantelos, I., Moreno, R., Newbery, D., and Green, R., "Electricity Transmission Arrangements in Great Britain: Time for Change?", Energy Policy, Vol 73, pp 278-297, Oct 2014 (journal's impact factor of 3.402).
11. Moreno, R., Pudjianto, D., and Strbac, G., "Transmission Network Investment with Probabilistic Security and Corrective Control", IEEE Transactions on Power Systems, Vol 28, No 4, pp 3935-3944, Nov 2013 (24th in the ranking of most-accessed papers in Jul 2013).
12. Moreno, R., Pudjianto, D., and Strbac, G., "Integrated Reliability and Cost-Benefit-Based Standards for Transmission Network Operation", Journal of Risk and Reliability, Vol 226, No 1, pp 75-87, Feb 2012 (constantly ranked within the first 5 articles in the ranking of most-read papers in Feb-Aug 2012).
13. Moreno, R., Strbac, G., Porrua, F., Mocarquer, S., and Bezerra, B., "Making Room for the Boom - New Regulatory Avenues and Network Infrastructure Changes for Accommodating Renewables", IEEE Power and Energy Magazine, Vol 8, No 5, pp 36-46, Sep-Oct 2010 (7th in the ranking of most-accessed papers in Oct 2010).
14. Moreno, R., Barroso, L. A., Rudnick, H., Mocarquer, S., and Bezerra, B., "Auction Approaches of Long-Term Contracts to Ensure Generation Investment in Electricity Markets: Lessons from the Brazilian and

Chilean Experiences", Elsevier Energy Policy, Vol 38, No 10, pp 5758-5769, Oct 2010 (periodical has 5-year impact factor of 3.382).

15. Strbac, G., Ramsay, C., and Moreno R., "This Sustainable Isle - Can Regulated Markets Deliver on the United Kingdom's Green Power Challenges?", IEEE Power and Energy Magazine, Vol 7, No 5, pp 42-52, Sep-Oct 2009.

#### **Organiser/chair of panel/special sessions**

1. 2016 INFORMS in Nashville, USA: "Power transmission planning under uncertainty"
2. 2016 IEEE PES General Meeting in Boston MA, USA (with B.Bezerra, PSR): "Opportunities and Challenges for International Integration and Multi-Sector Coordination of Energy Systems"
3. 2015 IEEE PES General Meeting in Denver CO, USA (with A.Street, PUC-Rio de Janeiro): "Emerging Optimization Models and Concepts to Design Transmission Networks in Modern Power Systems"
4. 2015 IEEE PES General Meeting in Denver CO, USA (with B.Bezerra, PSR): "Demand Response in Fast Growing Countries: Challenges and Opportunities"
5. 2014 IFORS in Barcelona, Spain (with A.Street, PUC-Rio de Janeiro): "Robust and Stochastic Models for Electricity Systems"
6. 2014 IEEE PES General Meeting in Washington, USA (with B.Bezerra, PSR): "The Market, the Prices and the Subsidies: the Real Cost of Power"
7. 2013 IEEE PES General Meeting in Vancouver, Canada (with B.Bezerra, PSR): "Power System Expansion: New Challenges, Developments and Best Practices in Systems with Strong Growth"
8. 2012 ISMP in Berlin, Germany (with L.Barroso, PSR): "Optimisation Models for Renewables Integration"
9. 2012 IEEE PES General Meeting in San Diego, USA (with B.Bezerra, PSR): "Smart Solutions for Fast-Growing Electric Systems"
10. 2011 IEEE PES General Meeting in Detroit, USA (with B.Bezerra, PSR): "Deploying tomorrow's electric power systems: low carbon, efficiency and security"
11. 2010 IEEE PES General Meeting in Minneapolis, USA (with B.Bezerra, PSR): "Global impacts of renewable energy"

Further information can be found at <https://sites.google.com/site/rmorenov>