

## Matias Negrete-Pincetic

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PERSONAL INFORMATION	Assistant Professor Energy Optimization, Control and Markets Lab Dept. of Electrical Engineering School of Engineering Pontificia Universidad Católica de Chile  Vicuña Mackenna 4860 Santiago, Chile <i>Webpage:</i> <a href="https://ocm.ing.puc.cl">https://ocm.ing.puc.cl</a> <i>E-mail:</i> <a href="mailto:mnegrete@ing.puc.cl">mnegrete@ing.puc.cl</a>
INTERESTS	Operation, control and planning of power and energy systems. Stochastic dynamic models and control of complex networks. Electricity market design and energy policy.
EDUCATION	<i>Ph.D. in Electrical and Computer Engineering</i> 2012 University of Illinois at Urbana Champaign, IL, USA  <i>M.Sc. in Physics</i> 2009 University of Illinois at Urbana Champaign, IL, USA  <i>M.Sc. in Physics</i> 2005 Pontificia Universidad Católica de Chile  <i>Professional Degree in Electrical Engineering (M.Sc.equivalent)</i> 2005 Pontificia Universidad Católica de Chile  <i>B.Sc. in Electrical Engineering</i> 2003 Pontificia Universidad Católica de Chile  <i>Secondary Education</i> 1996 Colegio Hispano Americano, Santiago, Chile
HONORS	<i>Fulbright Fellowship</i> 2005 - 2009  <i>Honor Fellowship PUC</i> - Pontificia Universidad Católica de Chile 1997 The best overall admission score in the Engineering College at Pontificia Universidad Católica de Chile  <i>Best Score Chilean University Admission Test</i> 1997 The best overall score in Mathematics and Physics in the Chilean University Admission Test
WORKING EXPERIENCE	<i>Assistant Professor</i> January 2013 - present Department of Electrical Engineering Pontificia Universidad Católica de Chile  <i>Postdoctoral Associate</i> September 2012 - July 2014 Electrical Engineering and Computer Sciences (EECS) Energy Resources Group (ERG) University of California, Berkeley, CA, USA

*Summer Internship* June 2010 to August 2010  
Business Architecture and Technology (BAT) Department  
ISO New England, Holyoke, MA, USA

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JOURNAL  
PUBLICATIONS

**M. Negrete-Pincetic**, G. Wang, A. Kowli, E. Shafieepoofard, and S. Meyn, “*The Value of Volatile Resources in Electricity Markets*,” Submitted to Stochastic Systems, 2015.

A. Nayyar, **M. Negrete-Pincetic**, K. Poolla and P. Varaiya, “*Rate-constrained Energy Services: Allocation Policies and Market Decisions*,” Submitted to IEEE Transactions on Automatic Control, 2014.

A. Nayyar, **M. Negrete-Pincetic**, K. Poolla and P. Varaiya, “*Duration-differentiated Energy Services with a Continuum of Loads*,” Submitted to IEEE Transactions on Control of Network Systems 2014.

G. Ramirez, H. Rudnick, **M. Negrete-Pincetic**, “*Distributed Generation: A Methodology to assess the Economic Impact on Distribution Networks*,” Submitted to IEEE Transactions on Power Systems, 2014.

J. Liu, **M. Negrete-Pincetic**, V. Gupta, “*Optimal Charging Profiles and Pricing Strategies for EV Stations*,” In preparation, to be submitted to IEEE Transactions on Automatic Control, 2015.

**M. Negrete-Pincetic** and S. Meyn, “*The Impact of Ramping Costs in Dynamic Electricity Markets*,” In preparation, to be submitted to Energy Policy, 2015.

D. Arnold, **M. Negrete-Pincetic**, D. Auslander and D. Callaway, “*Extremum Seeking Control of Smart Inverters for Reactive Power Compensation*.” In preparation, to be submitted to IEEE Transactions on Power Systems, 2015.

**M. Negrete-Pincetic**, L. de Castro, and H. Pulgar-Painemal, “*Electricity supply auctions: Understanding the consequences of the product definition*,” International Journal of Electrical Power and Energy Systems, Volume 64, January 2015, Pages 285-292, January 2015.

L. de Castro, **M. Negrete-Pincetic**, and G. Gross, “*Respond: Our Response Seemed To Fall on Deaf Ears*,” The Electricity Journal, Volume 22, Issue 1, p. 13, January-February 2009.

L. de Castro, **M. Negrete-Pincetic**, and G. Gross, “*Respond: Our Analysis of Illinois Market Was Thorough, in Context*,” The Electricity Journal, Volume 22, Issue 1, pp. 5-12., January-February 2009.

L. de Castro, **M. Negrete-Pincetic**, and G. Gross, “*Product Definition on Electricity Supply Auctions: The 2006 Illinois Experience*,” The Electricity Journal, Volume 21, Issue 7, Pages 50-62 August-September 2008.

- BOOK CHAPTERS G. Wang, **M. Negrete-Pincetic**, A. Kowli, E. Shafieepoorfard, S. Meyn, and U. Shanbhag, “*Dynamic Competitive Equilibria in Electricity Markets*,” In A. Chakraborty and M. Ilic, editors “*Optimization Theory for Electric Smart Grids*,” Pages 35-62, Springer, 2011.
- CONFERENCE PUBLICATIONS (SELECTED) A. Nayyar, **M. Negrete-Pincetic**, K. Poolla and P. Varaiya, “*Duration-differentiated Energy Services with a Continuum of Loads*,” Accepted for publication in the proceedings of the 53rd IEEE Control and Decision Conference, Los Angeles, CA., USA, 2014.
- D. Arnold, **M. Negrete-Pincetic**, D. Auslander and D. Callaway, “*Extremum Seeking Control of Smart Inverters for Reactive Power Compensation*.” Submitted to IEEE PES General Meeting, Denver, Colorado, 2015.
- F. Juul, **M. Negrete-Pincetic**, J. MacDonald and D. Callaway, “*Real-time Scheduling of Electric Vehicles for Ancillary Services*” Submitted to IEEE PES General Meeting, Denver, Colorado, 2015.
- M. Negrete-Pincetic** and S. Meyn, “*Markets for Differentiated Electric Power Products in a Smart Grid Environment*,” Proceedings of the 2012 IEEE-PES General Meeting, pp.1-7, 22-26 July 2012 San Diego, CA, USA.
- G. Wang, **M. Negrete-Pincetic**, A. Kowli, E. Shafieepoorfard, S. Meyn, and U. Shanbhag, “*Real-time prices in an Entropic Grid*,” Proceedings of the 2012 PES Innovative Smart Grid Technologies Conference, pp. 1-8, 16-20 Jan. 2012.
- M. Negrete-Pincetic** and S. Meyn, “*Intelligence by Design for the Entropic Grid*,” Proceedings of the 2011 IEEE-PES General Meeting, pp. 1-8, 24-29 July 2011, Detroit, MI, USA.
- S. Meyn, **M. Negrete-Pincetic**, G. Wang, A. Kowli, and E. Shafieepoorfard, “*The Value of Volatile Resources in Electricity Markets*,” Proceedings of the 49th IEEE Control and Decision Conference, pp. 1029-1036, 15-17 Dec. 2010, Atlanta, Georgia, USA.
- M. Negrete-Pincetic**, F. Yoshida, and G. Gross, “*Towards Quantifying the Impact of Cyber Attacks in the Competitive Electricity Market Environment*,” Proceedings of the IEEE Powertech 2009, 28 June - 2 July 2009, pp. 1-8, Bucharest, Romania.
- PRESENTATIONS (SELECTED) INFORMS Annual Meeting 2013 October 7, 2013  
“*Where is the Missing Money? The impacts of ramping costs in dynamic electricity markets*”
- VEG Meeting, UC Berkeley October 23, 2012  
“*Intelligence by Design in an Entropic Power Grid*”
- Mitsubishi Electric Research Laboratories February 22, 2012  
“*The Value of Volatile Resources in Electricity Markets*”
- MIT Energy Club November 15, 2011  
“*Intelligence by Design for The Entropic Grid*”
- CompSust’10, MIT June 29, 2010  
“*The Value of Volatile Resources in Electricity Markets*”

RESEARCH PROJECTS (SELECTED)

Fondecyt Regular 2013 November 2013 - November 2016  
 EE Department, PUC  
 Project: *NCRE Integration into Chilean Electricity System: Opportunities for Solar Energy*  
 Role: Co-Investigator

Bosch Energy Research Network September 2012 - August 2014  
 EECS Department, University of California, Berkeley  
 Project: *Distributed Resource Aggregation for the Smart Grid*  
 Role: Postdoctoral Associate

UC Berkeley - Lawrence Berkeley National Lab September 2012 - August 2014  
 EECS Department, University of California, Berkeley  
 Project: *Los Angeles Air Force Base V2G Pilot Project*  
 Role: Postdoctoral Associate

Department of Energy (DOE), USA March 2010 - August 2012  
 ECE Department, University of Illinois at Urbana-Champaign  
 Project: *Extending the Realm of Optimization for Complex Systems: Uncertainty, Competition, and Dynamics*  
 Role: Research Associate (Ph.D. Student)

SKILLS

Language Skills: Spanish (Native), English (Fluent)

Computing Skills: MATLAB, C, L<sup>A</sup>T<sub>E</sub>X, HTML, Mathematica, Powerworld

PROFESSIONAL SERVICE

Reviewer of IEEE Transactions on Smart Grid, IEEE Transactions on Power Systems, IEEE Transactions on Control of Network Systems, IEEE Transactions on Signal Processing, International Journal of Electric Power and Energy Systems

OTHER ACTIVITIES

Member of the organizing committee of the 2013 Calcubo Conference at Stanford University

Member of the organizing committee of the 2011 Cyber-Physical Systems Symposium at the Coordinated Science Laboratory

Member of the organizing committee of the 2010 Power and Energy Conference at Illinois

COLLABORATORS:

Kameshwar Poolla [Berkeley], Duncan Callaway [Berkeley], Pravin Varaiya [Berkeley], Daniel Arnold [Berkeley], Ashutosh Nayyar [USC], Sean Meyn [Florida], Luciano de Castro [Northwestern], Vijay Gupta [Notre Dame], He Hao [PNNL], Wei Chen [Hong Kong University of Science and Technology], Josh Taylor [Toronto], Eugene Litvinov [ISO-NE], Feng Zhao [ISO-NE], Daniel Olivares [PUC-Chile].

*Graduate Advisors:* Professor Sean Meyn [University of Illinois at Urbana-Champaign].

*Post-doctoral Sponsors:* Professors Kameshwar Poolla, Duncan Callaway and Pravin Varaiya [Univ. of California, Berkeley]

*Current Graduate Students:* George Wenzel [PUC-Chile]