

Héctor Chávez, Ph.D.

CONTACT INFORMATION	Avda. Ecuador 3519 Estación Central, Santiago, Of. 307	56 2 2718 3303 hector.chavez@usach.cl
RESEARCH INTERESTS	Stability-constrained Unit commitment under the uncertainty of Non-dispatchable Generation, Dimensioning and Adequacy of Reserves to Integrate Non-dispatchable Generation, Optimal Transmission Expansion for Integrating Non-dispatchable Generation, Adaptive Islanding in case of disasters, Ancillary Service Markets, Market rules for distributed generation remuneration in retail markets, combine power and electricity generation for optimal energy supply of urban areas, frequency Control.	
EDUCATION	KTH Royal Institute of Technology , Stockholm, Sweden. Post-doctoral fellow, Electrical Engineering (Power Systems), 2013. <ul style="list-style-type: none">• Topic: <i>Inertia markets for integrating non-dispatchable generation.</i> University of Texas at Austin , Austin, TX Ph.D., Electrical Engineering (Power Systems), August 2009 - April 2013. <ul style="list-style-type: none">• Thesis Topic: <i>Frequency Control adequacy for increasing levels of non-dispatchable generation.</i> Universidad de Santiago, Chile , Santiago, Chile Magister en Ciencias de la Ingeniería, Electrical Engineering, March 2000 - August 2006. <ul style="list-style-type: none">• Thesis Topic: <i>DTC current limiting system.</i> Ingeniero Civil eléctrico, Electrical Engineering, March 2000 - August 2006. Licenciado en Ciencias de la Ingeniería , Electrical Engineering March 2000 - August 2004.	
TEACHING EXPERIENCE	Director Master in Electrical Engineering Program, Electrical Engineering Dept. U de Santiago, Chile. Director Sustainable Energy Integration Laboratory, Electrical Engineering Dept. U de Santiago, Chile. Assistant Professor Energy systems track, Electrical Engineering Dept. U de Santiago, Chile. Instructor Energy systems track, Electrical Engineering Dept. U de Santiago, Chile. Part-time instructor Energy systems track, Electrical Engineering Dept. U de Santiago, Chile. Teacher Assistant Applied Calculus and Differential Equations	Spring 2014 - Present Spring 2014 - Present Spring 2014 - Present Spring 2009 - Fall 2013 Spring 2006 - Spring 2008 Spring 2003- Fall 2004
PROFESSIONAL EXPERIENCE	Instrumentation Engineer, WorleyParsons Mineral, Metals, and Chemicals (Chile) http://www.worleyparsons.com/CSG/MineralsAndMetals/Pages/default.aspx 2006 – 2008. <ul style="list-style-type: none">• Implementation of industrial photovoltaic systems:<ul style="list-style-type: none">– Dimensioning of stand alone system components to power remote instrumentation and communication systems.	

- Economic and technical evaluation of industrial control and instrumentation systems, P&ID, FAT tests.
- Documentation of industrial projects according to ISO 9001.

REFEREED
JOURNAL
PUBLICATIONS

1. Chavez, H.; Baldick, R.; Sharma, S., "Regulation Adequacy Analysis Under High Wind Penetration Scenarios in ERCOT Nodal," *Sustainable Energy, IEEE Transactions on* , vol.3, no.4, pp.743,750, Oct. 2012.
2. Chavez, H.; Baldick, R.; Sharma, S., "Primary reserves adequacy through OPF for increasing levels of variable generation," *Power Systems, IEEE Transactions on* , Special issue on integration of variable generation.
3. Chavez, H.; Baldick, R.; Matevosyan, S., "Secondary reserves adequacy through AGC for increasing levels of variable generation," *Power Systems, IEEE Transactions on* , Special issue on integration of variable generation.
4. Chavez, H.; Baldick, R.; Matevosyan, S., "The Joint Adequacy of AGC and Primary Frequency Response in Single Balancing Authority Systems," *Sustainable Energy, IEEE Transactions on* , Special issue on integration of variable generation. (to appear)
5. Chavez, H.; Lee, D.; Baldick, R., "CPS1-compliant Regulation Using a PSD analysis of Wind Expansion in a Single Balancing Authority," *Sustainable Energy, IEEE Transactions on* , Special issue on integration of variable generation. (to appear)

CONFERENCES

1. Chavez, H.; Baldick, R., "Inertia and Governor Ramp Rate Constrained Economic Dispatch to Assess Primary Frequency Response Adequacy,". *International Conference on Renewable Energies and Power Quality (ICREPQ12)*. Santiago de Compostela (Spain), 28th to 30th March, 2012.
2. Farrokhsersht, N.; Chavez, H.; "Determination of Acceptable Inertia Limit for Ensuring Adequacy under High Levels of Wind Integration,". *International Conference on the European Energy Market (EEM 14)*. Krakow (Poland), 28th to 30th May, 2014

SUBMITTED
JOURNAL
PUBLICATIONS

1. Chavez, H.; Hezamsadeh, M., "The Need for Market-based Provision of Primary Frequency Control Ancillary Service," *Power Systems, IEEE Transactions on* , Special issue on Wind & Solar Energy: Uncovering and Accommodating their Impacts on Electricity Markets.
2. Chavez, H., "AGC rate-constrained OPF for secondary control adequacy in real time markets," *Power Systems, IEEE Transactions on*.

TECHNICAL
REPORTS

1. Chavez, H.; Hesamzadeh, M., "The Need for Market-based Provision of Inertia and Frequency Response to Integrate Wind Power in NORDEL," for SWEGRIDS and Vattenfall AB.

RESEARCH
PROYECTS

- Costo de la integracion de energias sustentables a los sistemas de energia electrica. Fondecyt de Iniciacion, Chilean Government (2015 - 2017), Responsible Researcher.
- Valor de la generacion variable como oferente de reserva secundaria, PAI program, Conicyt, Chilean Government (2014 - 2016), Responsible Researcher.
- Solar PV Laboratoty, CORFO, Chilean Government (2014-2016), Responsible Researcher.

- Inertia and frequency response adequacy under high wind penetration scenarios in NORDEL, Vattenfall AB, Suecia, and KTH Royal Institute of Technology (2013), Postdoctoral Researcher.
- Principles based modeling of costs of integrating intermittent renewable generation, National Science Foundation, Estados Unidos (2009 - 2012), Research Assistant.

AWARDS

- U. of Texas at Austin, George J. Heuer, Jr. Ph.D. Endowed Graduate Fellowship Fund, Fall 2010 - Spring 2013.
- U. of Texas at Austin, FERPA Graduate School Fellowship, Fall 2010 - Spring 2011.
- U. of Texas at Austin, Graduate School Fellowship, Fall 2009 - Spring 2010.
- U.S. Department of State, Fulbright Scholarship, Fall 2009 - Spring 2013.
- U. de Santiago, Chile, Graduate School graduate Fellowship, 2004-2006.
- U. de Santiago, Chile, Enrique Fröemel Undergraduate Fellowship, 2004-2006.

HONORS

- U. de Santiago, Chile, top M.S. graduate (ranking 1 out of 2), 2006.
- U. de Santiago, Chile, top Ingeniero civil eléctrico graduate (ranking 1 out of 34), 2006.
- U. de Santiago, Chile, outstanding student. School of Engineering Honor Award 2004.

REFERENCES

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