

JULIO ENRIQUE ROMERO AGUERO



PERSONAL DATA

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EDUCATION

PHD IN ELECTRICAL ENGINEERING (WITH HONORS) *August 2000 – April 2005*
Instituto de Energía Eléctrica – Universidad Nacional de San Juan IEE – UNSJ (San Juan, Argentina)
www.iee-unsj.org

BSC IN ELECTRICAL ENGINEERING *February 1991 – June 1996*
Universidad Nacional Autónoma de Honduras UNAH (Tegucigalpa, Honduras)
www.unah.hn

EXPERIENCE

ENERGY INDUSTRY:

Quanta Technology LLC (Raleigh, NC)

Advisor (Full-time)

June 2007 – to date

- Consulting projects: provided expert-based technical consulting related to planning, reliability assessment, spatial load forecasting and analysis of power distribution systems for several utilities in the USA (Commonwealth Edison, Dominion, XCEL, Puget Sound Energy, Madison Gas and Electric, Southern California Edison) and overseas (Karachi Electric Service Corporation).
- Research and development: developed original intellectual property related to utility decision-making with incomplete or imperfect data.
- Business development: interacted with potential electric utility clients with the goal of identifying needs, writing proposals and managing the proposal process through closing.

Comisión Nacional de Energía CNE – Nacional Energy Commission (Tegucigalpa, Honduras)

Commissioner (Full-time – appointed by the President of the Republic of Honduras)

January 2007 – May 2007

Specialist Consultant in Power Distribution Systems (Full-time)

September 2005 – December 2006

- Responsible of regulation of power generation, transmission and distribution utilities of Honduras, and their interaction in the Central American electricity market.
- Responsible of preparing, revising and approving national electric sector regulations and draft laws.
- Responsible of revising, analyzing and approving national electricity rates studies.
- Responsible of revising and approving power generation contracts.

Empresa Nacional de Energía Eléctrica ENEE – National Electric Power Utility (Tegucigalpa, Honduras)

Chief of Operations Unit (Full-time)

March 2000 – July 2000

Assistant of Regional Systems Department (Full-time)

September 1998 – March 2000

Chief of Southern Area (Full-time)

March 1997 – September 1998

Chief of Eastern Area (Full-time)

March 1996 – March 1997

Intern (Full-time)

September 1995 – March 1996

- Responsible of operation of the power distribution system of Tegucigalpa, Honduras.
- Responsible of operation and maintenance of the power distribution systems of the southern and eastern regions of Honduras.
- Responsible of commercialization of electricity in the southern and eastern regions of Honduras.

- Managed resources and professional and technical staffs up to 100 people.
- Supervised state and private-owned electrification projects for evaluating the fulfillment of construction standards and authorizing their connection to the national interconnected system.

RESEARCH:

Instituto de Energía Eléctrica – Universidad Nacional de San Juan IEE – UNSJ (San Juan, Argentina)

Graduate student / PhD Candidate (Full-time)

August 2000 – April 2005

- Formulated a methodology for fuzzy knowledge-based modeling of poorly-monitored power distribution systems.
- Co-authored the first international publication on type-2 fuzzy logic theory applications in power systems.
- Proposed a novel method for modeling and computing with uncertain variables in engineering problems, leading at introducing and developing a new concept in power systems, Fuzzy Fault Currents.

TEACHING:

Universidad Nacional Autónoma de Honduras UNAH (Tegucigalpa, Honduras)

Adjunct Professor “Electric Circuits I and II”

August 2006 – May 2007

Adjunct Professor “Discrete Mathematics”, “Introduction to Computer Science”

February 2006 – June 2006

Universidad Tecnológica de Honduras UTH (Tegucigalpa, Honduras)

Adjunct Professor “Mathematics II”

January 2006 – April 2006

Adjunct Professor “Differential Equations”

May 2006 – August 2006

Adjunct Professor “Complex Variable”

September 2006 – December 2006

ADVANCED COURSES

- **6th International Seminar on Public Utilities Regulation.** Quantum America Corp., Ixtapa, México, May 2007.
- **Supervision and Control of Power Systems.** IEEE Student Branch, IEE-UNSJ, San Juan, Argentina, Dec. 2004.
- **Restoration of Power Systems.** IEEE Student Branch, IEE-UNSJ, San Juan, Argentina, Nov. 2004.
- **Strategic Analysis of Projects.** UNSJ, San Juan, Argentina, Nov. 2003.
- **The Challenge of Being a Technology Entrepreneur in Latin America.** IEEE Student Branch, IEE-UNSJ, San Juan, Argentina, Jul. 2003.
- **Intensivkurs I – First Year of German Language.** German Institute of San Juan, (Partner of Goethe-Zentrum), San Juan, Argentina, Mar. 2003.
- **Medium and Low Voltage Protection Systems.** IEE-UNSJ, San Juan, Argentina, Dec. 2002.
- **The Electricity Market of Argentina.** IEE-UNSJ, San Juan, Argentina, Dec. 2002.
- **Cisco Networking Academy Program - Networking Basics.** CISCO Systems, San Juan, Argentina, Dec. 2002.
- **Protection of Power Systems.** IEEE Student Branch, IEE-UNSJ, San Juan, Argentina, Nov. 2001.
- **Studies of Reliability and Reserve of Supply.** IEEE Student Branch, IEE-UNSJ, San Juan, Argentina, Nov. 2001.
- **Introduction to Matlab & Simulink.** IEEE Student Branch, IEE-UNSJ, San Juan, Argentina, Aug. 2001.
- **Restoration of Power Systems.** IEE-UNSJ, San Juan, Argentina, Jun. 2001.
- **Diploma in Total Quality Management.** Universidad Católica de Honduras (UNICAH), Tegucigalpa, Honduras, May 1998.
- **Measurement of Electrical Energy.** ENEE Training Department, CENACAPT, Honduras, Sep. 1997.
- **Working Techniques in Energized Lines up to 34.5 kV.** ENEE Training Department, CENACAPT, Honduras, Jul. 1997.

AWARDS AND PROFESSIONAL ACTIVITIES

- Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), Nov. 2006.
- Vice-President of Colegio de Ingenieros Mecánicos, Eléctricos y Químicos de Honduras CIMEQH 2006-2007.
- Chairman of IEEE Honduras Section, 2007-2008.
- Member of the Society of Hispanic Professional Engineers (SHPE)

- Secretary of Confederación Panamericana de Ingeniería Mecánica, Eléctrica, Industrial y Ramas Afines COPIMERA, 2006-2007.
- German Academic Exchange Service (DAAD) scholarship for pursuing a PhD degree in Electrical Engineering at Universidad Nacional de San Juan (IEE-UNSJ), San Juan, Argentina, Aug. 2000 – Nov. 2004.
- Listed in the 10th Edition of Marquis Who's Who in Science and Engineering, 2008 – 2009.
- Listed in Strathmore's Who's Who Worldwide Edition, 2007 – 2008.
- Reviewer of IEEE Transactions on Power Systems, 2007 – to date.
- Reviewer of IEEE Transactions on Fuzzy Systems, 2007 – to date.
- Reviewer of Fuzzy Sets and Systems, 2008 – to date.
- Reviewer of 5th IEEE International Congress in Innovation and Technology Development, Cuernavaca, Morelos, Mexico, Oct. 2007

LANGUAGES

Spanish (Native), English (Fluent), German (Basic)

COMPUTATIONAL SKILLS

SynerGEE, Cymdist, Windmil, PSS^{TME}, PSS^{TMS}SINCAL, PowerWorld Simulator, DIgSILENT Power Factory, Matlab (Fuzzy and Neural Networks Toolbox, Simulink, SymPowerSystems), Mathematica, MS Office for Windows, Visual Basic for Applications (VBA)

MEMBERSHIPS

- Institute of Electrical and Electronic Engineers (IEEE)
- IEEE Power Engineering Society
- IEEE Industry Applications Society
- IEEE Computational Intelligence Society
- Society of Hispanic Professional Engineers (SHPE)

AREAS OF INTEREST

- Planning, reliability, risk assessment, operations and regulation of power distribution systems
- Computational intelligence (fuzzy logic, neural networks, evolutionary algorithms)
- Distributed generation
- Renewable and alternative energy sources (wind, solar, hydro, biomass, hydrogen, etc)

PUBLICATIONS (INTERNATIONAL JOURNALS AND CONFERENCES)

PhD Thesis

Julio Romero Agüero, "Dynamic inference of operative configuration of medium voltage distribution networks using expert knowledge, real-time, extended real-time and historical information", (in Spanish), Instituto de Energía Eléctrica, Universidad Nacional de San Juan, Argentina, abril de 2005, ISBN 987-43-9137-5.

Papers

1. J. Romero Agüero, A. Vargas, "Inference of operative configuration of distribution networks using fuzzy logic techniques-Part I: Real-time model", *IEEE Transactions on Power Systems*, Vol. 20, No. 3, pp. 1551-1561, Aug. 2005.
2. J. Romero Agüero, A. Vargas, "Inference of operative configuration of distribution networks using fuzzy logic techniques-Part II: Extended-real time model", *IEEE Transactions on Power Systems*, Vol. 20, No. 3, pp. 1562-1569, Aug. 2005.
3. J. Romero Agüero, A. Vargas, "Calculating functions of interval type-2 fuzzy numbers for fault current analysis", *IEEE Transactions on Fuzzy Systems – Special Issue on Extensions to Type-1 Fuzzy Sets*, Vol. 15, No. 1, pp. 31 – 40, Feb. 2007.
4. J. Romero Agüero, A. Vargas, "Using type-2 fuzzy logic systems to infer the operative configuration of distribution networks", in *Proceedings of 2005 IEEE PES General Meeting*, pp. 2379-2386, San Francisco, USA, Jun. 2005.

5. J. Romero Agüero, D. Hirschman, A. Vargas, "Inference of the operative configuration of medium voltage distribution networks", in *Proceedings of 2003 Bologna Power Tech Conference, Vol. 3, pp. 562-569, Bologna, Italy, Jun. 2003*.
6. J. Romero Agüero, A. Vargas, "Fuzzy Fault Currents: Theory and Applications", in *Proceedings of 2007 Power Engineering Society General Meeting, Tampa, Florida, USA, Jun. 2007*.
7. J. Romero Agüero, A. Vargas, "Inferring the Operative Configuration of Distribution Networks Through Type-2 Fuzzy Logic Systems for Implementing Outage Management and State Estimation", in *Proceedings of XXI Pan-American Congress of Mechanical, Electrical, and Industrial Engineering, Lima, Peru, Oct. 2007*.
8. J. Romero Agüero, "Distributed Generation: Benefits and Challenges", *XXVI IEEE Central American Conference (CONCAPAN), San Salvador, El Salvador, Nov. 2006*.
9. J. Romero Agüero, Alberto Vargas, "Fuzzy Fault Currents: Theory and Applications", *XXVI IEEE Central American Conference (CONCAPAN), San Salvador, El Salvador, Nov. 2006*.
10. J. Romero Agüero, "A Proposal for Distribution Power Quality Regulation in Honduras", *XVIII Scientific Week UNAH, Tegucigalpa, Honduras, Oct. 2006*.
11. J. Romero Agüero, Alberto Vargas, "Distribution Outage Management Using a Methodology Based on Fuzzy Logic", *XXV IEEE Central American Conference (CONCAPAN), Managua, Nicaragua, Nov. 2005*.
12. J. Romero Agüero, Alberto Vargas, "Dynamic Inference of Operative Configuration of Distribution Networks Using Fuzzy Logic Techniques", *XVII Scientific Week UNAH, Tegucigalpa, Honduras, Sep. 2005*.
13. J. Romero Agüero, Alberto Vargas, "Distribution Fault Current Calculation Using Fuzzy Arithmetic", *XVII Scientific Week UNAH, Tegucigalpa, Honduras, Sep. 2005*.
14. J. Romero Agüero, L. Xu, E. Phillips, J. Wang, T. Hong, H. L. Willis, "Improvements in Spatial Load Forecasting Trending Methods for Distribution Planning Using GIS and Enterprise Data", *accepted for presentation in DISTRIBUTECH 2009, Feb. 2009, San Diego, California*

Conferences

1. J. Romero Agüero, "What governments are doing to improve the energy sector: Measures and Policies in Honduras", *10th Annual Private Power in Central America, Coral Gables, Florida, USA, Jun. 2007*.
2. J. Romero Agüero, "Energy consumption in Honduras and Central America", *EXPOENERGLA 2007, San Pedro Sula, Honduras, Feb. 2007*.
3. J. Romero Agüero, "Distributed Generation: New Paradigm of Electric Power Production", *EXPOTEC 2006, San Pedro Sula, Honduras, Oct. 2006*.
4. J. Romero Agüero, "Impact of distributed generation in operation of power distribution systems", *XXV IEEE Central American Student Conference (CONESCAPAN), Tegucigalpa, Honduras, Sep. 2006*.
5. J. Romero Agüero, "Calculation of electricity rates", *Biofuels and Alternative Energies in Honduras Conference, San Pedro Sula, Honduras, Jul. 2006*.
6. J. Romero Agüero, "Introduction to power quality", *IEEE – UNAH Student Branch Conference, Universidad Nacional Autónoma de Honduras (UNAH), Tegucigalpa, Honduras, Mar. 2006*.
7. J. Romero Agüero, "Identification of Operative Configuration of Medium-Voltage Distribution Networks Using Fuzzy Logic Techniques", *IEEE Student Branch, IEE-UNSJ, San Juan, Argentina, May 2004*.