

CURRICULUM VITAE

1. PERSONAL DATA:

- NAME: **Doris Andrea Sáez Hueichapan**
- PASSPORT NUMBER: 8.952.312-5
- BIRTH PLACE AND DATE: Panguipulli, July 26th, 1971
- NATIONALITY: Chilean
- ACADEMIC AND PROFESSIONAL QUALIFICATIONS:
 - Doctor in Engineering Sciences, Pontificia Universidad Católica de Chile, December 2000.
 - Master in Engineering Sciences, Pontificia Universidad Católica de Chile, August 1995.
 - Civil Engineer, Mayor in Electrical Engineering, Pontificia Universidad Católica de Chile, August 1995.
 - Bachelor in Engineering Sciences, Pontificia Universidad Católica de Chile, March 1993.
- POSITION AT UNIVERSITY: Full time academic, Universidad de Chile.
- DEPARTMENT: Electrical Engineering.
- FACULTY: Physical and Mathematical Sciences
- ACADEMIC POSITION: Associate Professor.
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2. TEACHING AT UNIVERSITY:

Undergraduate courses, Electrical Engineering Department, Universidad de Chile

- EL42D Control Systems, Fall semester 2001 and Fall-Spring semesters 2003 to 2009, 30 student in average, 4 hours of teaching per week, 10 UD, lecturer. Main activities of this course are now detailed:
 - From 2006 to present: Methodological teaching and learning strategies have been constantly developed and applied throughout all the course lectures.
 - 2006: First academia at the Electrical Engineering Department to systematically implement teaching and learning methodologies: collaborative work, problem-based learning, case study, site visits, and team work within laboratory activities. This work was started at 2006 as a pilot course of Project MECESUP UCH0403 “Curricular Renovation of Civil Engineering at Universidad de Chile and Pontificia Universidad Católica de Chile”.
 - 2001, 2003 a 2006: traditional lectures, development of new laboratory experiences each semester, preparation of course notes, and site visits.
- EL650Advanced Control Systems, Fall semester 2001 and Fall semesters 2003 to 2007, (15 student in average), 4 hours of teaching per week, 10 UD, lecturer
 - Lectures and laboratory experiences.

Postgraduate courses, Electrical Engineering Department, Universidad de Chile

- EL/EM727 Intelligent Control of Systems, Spring semesters 2003, 2004, 2006 and Fall semester 2009 (10 student in average), 4 hours of teaching per week, 10 UD, lecturer.
 - New course set-up in 2003.
 - Lectures, project-based learning with collaborative work and laboratory experiences.
- EL 761/CI63F Intelligent Control for Transport Dynamic Problems, Spring semesters 2007-2008, (5 student in average), 4 hours of teaching per week, 10UD, lecturer and co-lecturer: Assistant Professor PhD. Cristián Cortés.
 - New course set-up in 2007.
 - Lectures and project-based learning with collaborative work.
 - Also dictated at the Civil Engineering Department, Universidad de Chile.
- EM712 Seminar of Automatic Control, Spring semesters 2005 to 2007 and Fall-Spring semesters 2008 (3 student in average), 2 hours of teaching per week, 10 UD, lecturer.
 - Course focused on a research project-based learning.

3. PUBLICATIONS

3.1 BOOKS AND CHAPTERS BOOKS

- L1. Sáez, D.,** Cipriano, A., Ordys, A. “Optimization of Industrial Processes at Supervisory Level: Application to Control of Thermal Power Plants”. Springer-Verlag London, Series Advances in Industrial Control, England, 2002, 187 páginas. ISBN: 1852333863.
- CL1. Sáez, D.,** Cipriano, A. “Supervisory Predictive Control of a Combined Cycle Thermal Power Plant”, Capítulo del libro “Thermal power plant simulation, monitor and control” editado por D. Flynn; IEE, The Institution of Electrical Engineering, 2003, United Kingdom, pag. 161-178, ISBN: 0 85296 419 6.

3.2 INTERNATIONAL JOURNALS (ISI)

- RI1.** Cortés, C.E., **Sáez, D.,** Milla, F., Riquelme, M., Núñez, A. “Hybrid Predictive Control for Real-time Optimization of Public Transport System’ Operations based on Evolutionary Multiobjective Optimization”, Transportation Research Part C-Emerging Technologies, Vol. 18, No. 5, 757-769, Oct. 2010.
- RI2** **Sáez D.,** Cortés, C.E., Riquelme, M., Núñez, A., Milla F., Tirachini, A. “Hybrid Predictive Control Strategy for a Public Transport System with Uncertain Demand”. Transportmetrica (in press) 2010.
- RI3.** Cortés, C.E., **Sáez, D.,** Milla, F., Riquelme, M., Núñez, A. “Hybrid Predictive Control for Real-time Optimization of Public Transport System’ Operations based on Evolutionary Multiobjective Optimization”, Accepted with minor revision, Transportation Research Part C-Emerging Technologies, 2009.
- RI4.** Núñez, A., **Sáez, D.,** Oblak, S., Skrjanc, I. “Fuzzy-Model-Based Hybrid Predictive Control”. ISA Transactions, Vol. 48, N° 1, pp. 24-31, 2009.
- RI5.** Cortés, C.E., **Sáez, D.,** Núñez, A., Muñoz-Carpintero, D. “Hybrid Adaptive Predictive Control for a Dynamic Pick-up and Delivery Problem”. Transportation Science, Vol. 43, N°1, 2009, pp. 27-42, 2009.
- RI6.** **Sáez D.,** Berenguel M., “Applications on Hybrid Predictive Control”, International Journal of Adaptive Control and Signal Processing, Vol.22, N°2, pp. 101-102, 2008.
- RI7.** Causa, J., Karer, G., Núñez, A., **Sáez, D.,** Skrjanc, I., Zupancic, B. “Hybrid Fuzzy Predictive Control based on Genetic Algorithm for the Temperature Control of a Batch Reactor”. Computers & Chemical Engineering, Vol. 32, N°12, pp. 3254-3263, 2008.
- RI8.** **Sáez, D.,** Cortés C.E., Núñez, A. “Hybrid Adaptive Predictive Control for the Multi-vehicle Dynamic Pickup and Delivery Problem based on Genetic Algorithms and Fuzzy Clustering”. Special Issue “Real-time Supply Chain

Management” of Computers & Operations Research, Vol 35, N^a11, pp. 3412-3438, 2008.

- RI9.** Cortés, C.E., Núñez, A., **Sáez, D.** “Hybrid Adaptive Predictive Control for a Dynamic Pickup and Delivery Problem including Traffic Congestion”. International Journal of Adaptive Control and Signal Processing. Vol. 22, N^o 2, pp. 103-123, 2008.
- RI10.** **Sáez, D.**, Zúñiga, R., Cipriano, A. “Adaptive Hybrid Predictive Control for a Combined Cycle Power Plant Optimization” International Journal of Adaptive Control and Signal Processing. Vol. 22, N^o 2, pp.198-220, 2008.
- RI11.** **Sáez, D.**, Milla, F., Vargas L. “Fuzzy Predictive Supervisory Control based on Genetic Algorithms for Gas Turbines of Combined Cycle Power Plants. IEEE Transaction on Energy Conversion, Vol. 22, N^o 3, pp. 689- 696, 2007.
- RI12.****Sáez, D.**, Ordys, A., Grimble, J. “Design of a Supervisory Predictive Controller and its Applications to Thermal Power Plants”, Optimal Control Applications and Methods, Wiley Journal. Vol. 26, N^o 4, pp. 169-198, 2005.
- RI13.**Corona, A., **Sáez, D.**, Agosín, E. “Effect of Water Activity on Gibberellic Acid Production by Gibberella Fujikuroi Under Solid State Fermentation Conditions”. Process Biochemistry, Vol. 40, N^o 8 , pp. 2655-2658, 2005.
- RI14.**Flores, A., **Sáez, D.**, Araya, J., Berenguel, M., Cipriano, A. “Fuzzy Predictive Control of a Solar Power Plant”. IEEE Transactions on Fuzzy Systems, Vol. 13, N^o 1, pp. 58-68, 2005.
- RI15.**Hernández, S., **Sáez, D.**, Mery, D. “Neuro-Fuzzy Method for Automated Defect Detection in Aluminium Castings”. Lecture Notes in Computer Science, LNCS 3212 pp. 826-833, 2004, ISSN 0302-9743, ISBN 3-540-23240-0.
- RI16.****Sáez, D.**, Cipriano, A. “A New Method for Structure Identification of Fuzzy Models and its Application to a Combined Cycle Power Plant”. Engineering Intelligent Systems for Electrical Engineering and Communications, Vol. 9, N^o 2, pp. 101-107, 2001.

3.3 CHILEAN JOURNALS

- RN1.**Causa, J., Karer, G., Núñez A., **Sáez D.**, Skrjanc, I., Zupancic, B. “Control Predictivo Híbrido Difuso basado en Algoritmos Genéticos y su Aplicación al Control de Temperatura de un Reactor Batch”. Revista Chilena de Ingeniería. Anales del Instituto de Ingenieros de Chile, Vol. 120, N^o3, pp. 113-123, 2008.
- RN2.**Otarola, G., Cortés, C., **Sáez, D.** “Control Predictivo Basado en Semáforos de Prioridad para Transporte Público”. Revista Chilena de Ingeniería. Anales del Instituto de Ingenieros de Chile, Vol. 120, N^o3, pp. 125-133, 2008.

- RN3.** Núñez, A., Sáez, D., Cortés, C.E. “Aplicación de Técnicas de Inteligencia Computacional en un Problema de Ruteo Dinámico de Vehículos”. Revista Chilena de Ingeniería. Anales del Instituto de Ingenieros de Chile, Vol. 119, N°1, pp. 21-31, 2007.
- RN4.** Sáez, D., Milla, F., Vargas, L. “Estrategia de Control Supervisor Difuso basado en Algoritmos Genéticos para la Turbina a Gas de una Central Térmica de Ciclo Combinado”. Revista Chilena de Ingeniería. Anales del Instituto de Ingenieros de Chile, Vol. 118, N°2, pp. 47-58, 2006.
- RN5.** Contreras, J., Sáez, D. “Modelos de Predicción basados en Redes Neuronales para la Caldera de una Planta Termoeléctrica”. Revista Chilena de Ingeniería. Anales del Instituto de Ingenieros de Chile, Vol. 116, N°2, pp. 71-79, 2004.
- RN6.** Sáez, D. “Estrategia de Control Optimo Económico para la Turbina a Gas de una Planta Termoeléctrica”. Revista Chilena de Ingeniería. Anales del Instituto de Ingenieros de Chile, Vol. 115, N°3, pp. 81-89, 2003.
- RN7.** Duclos, J., Sáez, D., Cipriano, A. “Estudio Comparativo de Algoritmos de Control para el Estacionamiento de un Camión con Acoplado”. Revista Apuntes de Ingeniería, Vol. 19, N° 1, pp. 21-31, Pontificia Universidad Católica de Chile, 1996.
- RN8.** Sáez, D., Cipriano, A. “Control Predictivo Generalizado Difuso y su Aplicación a un Péndulo Invertido”. Revista Apuntes de Ingeniería, Octubre-Diciembre, Vol. 18, N° 4, pp. 17-24, Pontificia Universidad Católica de Chile, 1995.
- RN9.** Cipriano, A., Sáez, D., Salinas, V., Veloso R. “Implantación en FuzzyTECH de Estrategias de Control Difuso para Hornos Cementeros”, Revista Apuntes de Ingeniería, Enero-Marzo, Vol. 51, pp. 61-72, Pontificia Universidad Católica de Chile, 1994.

3.4 BOOK REVIEWS

- BR1.** Sáez, D., Book Review “Genetic Algorithms”, authors: K. F. Man, K. S. Tang, S. Kwong, Springer-Verlag, ISBN 1-85233-072-4, International Journal of Adaptive Control and Signal Processing, Vol. 19, N°1, pp. 59, 2005.
- BR2.** Sáez, D., Book Review “Fuzzy Control Systems Design and Analysis. A Linear Matrix Inequality Approach”, authors: K. Tanaka and H. Wang, Wiley Interscience, ISBN 0-471-32324-1. International Journal of Adaptive Control and Signal Processing, Vol. 19, N°1, pp. 61-62, 2005.
- BR3.** Sáez, D., Book Review “Non-Linear Model Based Process Control”, authors R. Ansari y M. Tadé, Springer-Verlag, ISBN 1430-9491, International Journal of Adaptive Control and Signal Processing, Vol. 15, N°4, pp. 427, 2001.

3.5 INTERNATIONAL CONFERENCES

- CI1.** Palma-Behnke R., Benavides C., Aranda E., Llanos J., Sáez D. “Energy Management System for a Renewable based Microgrid with a Demand Side Management Mechanism”, , IEEE Symposium Series on Computational Intelligence - SSCI 2011 April 11-15, 2011 - Paris, France.
- CI2.** Muñoz-Carpintero, D., Sáez, D., Skrjanc, I. “Hybrid Predictive Control Design with Mixed Inputs based on PSO and its Application for Control of a Batch Reactor”, IEEE WCCI2010, IEEE Congress on Evolutionary Computation, Barcelona, July 20-25, 2010.
- CI3.** [DS26] Muñoz-Carpintero, D., Núñez, A., Sáez, D., Cortés, C.E. “Evolutionary Algorithms and Fuzzy Clustering for Control of a Dynamic Vehicle Routing Problem Oriented to User Policy”, IEEE WCCI2010, IEEE Congress on Evolutionary Computation, Barcelona, July 20-25, 2010.
- CI4.** [DS27] Muñoz, J., Giesen, R., Delgado, F., Cipriano, A., Cortés, C.E., Sáez, D., Valencia, F. “Comparison of control strategies for real-time optimization of public transport systems”, Triennial Symposium on Transportation Analysis (TRISTAN 2010), Tromso, Norway, June 20-25, 2010.
- CI5.** Milla, F., **Sáez, D.**, Vargas, L. “Combined Cycle Power Plant Optimization Based on Supervisory Predictive Controllers”, European Control Conference ECC 2009, Budapest, Hungary, August 23-26, 2009.
- CI6.** Otarola, G., Cortés, C.E., **Sáez, D.** “Hybrid Predictive Control Based on Traffic Signal Priority for Public Transport Systems”, European Control Conference ECC 2009, Budapest, Hungary, August 23-26, 2009.
- CI7.** **Sáez, D.**, Cortés, C.E., Pillajo, A. “Real-time Control Strategies for a Public Transport System based on Fleet Assignment Operational Schemes”, Fourth International Workshop on Freight Transportation and Logistics, Odysseus 2009, Çeşme, İzmir, Turquía, May 26-29, 2009.
- CI8.** Cortés, C.E., **Sáez, D.**, Núñez, A., Gendreau, M. “Hybrid Predictive Control for the Dynamic Pick up and Delivery Problem with Variable Fleet Size based on an Evolutionary Multiobjective Optimization Approach (EMO)”. International Federation of Operational Research Societies Conference, IFORS 2008, Sandton, South Africa, July 13-18.
- CI9.** Causa, J., Karer, G., Núñez, A., Sáez, D., Skrjanc, I., Zupancic, B. “Hybrid Fuzzy Predictive Control of a Batch Reactor using branch and bound and a genetic algorithm approach”, 17th IFAC World Congress, Seoul, Korea, pp. 8381-8386, July 6-11, 2008.
- CI10.** Núñez, A., **Sáez, D.**, Cortés, C.E. “Hybrid Predictive Control for the Vehicle Dynamic Routing Problem based on Evolutionary Multiobjective Optimization

(EMO)". 17th IFAC World Congress, Seoul, Korea, pp. 13085-13090, July 6-11, 2008.

- CI11.**Torres, P, **Sáez, D.** "Type-2 Fuzzy Logic Identification Applied to the Modeling of a Robot Hand", 2008 IEEE World Congress on Computational Intelligence (WCCI2008), pp. 854-861, June 1-6, Hong Kong, China. Selected for **Best Student Paper**.
- CI12.**Medina, P., **Sáez, D.**, Roman, R. "On Line Fault Detection and Isolation in Gas Turbines Combustion Chambers", ASME Turbo Expo 2008: Power for Land, Sea and Air, Berlin, Germany, June 9-13, 2008.
- CI13.**Núñez, A., Cortés, C.E., **Sáez, D.**, Riquelme, M., Núñez, A. "Hybrid Predictive Control for Real-time Optimization of Public Transport System' Operations based on evolutionary Multiobjective Optimization". 10th International Conference on Application of Advanced Technologies in Transportation, Greece, pp. 2326-2331, May 27-31, 2008.
- CI14.****Sáez, D.**, Núñez, A., Oblak, S., Skrjanc, I. "Hybrid Fuzzy Predictive Control based on Evolutionary Multiobjective Optimization". Eurosim 2007, Ljubljana, Slovenia. September 9-13, 2007.
- CI15.****Sáez, D.**, Milla, F., Ordys, A. "Hybrid Predictive Supervisory Control Based on Genetic Algorithms for a Gas Turbine of Combined Cycle Power Plants" European Control Conference 2007, Kos, Greece, July 2-5, 2007.
- CI16.**Cortés, C.E., **Sáez, D.**, Sáez, E., Núñez, A., Tirachini, A. "Hybrid Predictive Control Strategy for a Public Transport System with Uncertain Demand", Sixth Triennial Symposium on Transportation Analysis TRISTAN 2007, Phuket Island, Thailand, June 10-15, 2007.
- CI17.****Sáez, D.**, Uribe, R. "Methodological Innovation in Electrical Engineering Department Control Systems Course", 3rd International CDIO Conference, MIT, Cambridge, Massachusetts, June 11-14, 2007.
- CI18.****Sáez, D.**, Ordys, A. "Comparison of Optimal Control Strategies for Supervisory and Regulatory Level", International Conference Control 2006 Glasgow, Scotland, 30th August to 1st September, N° 249, 6 pages, 2006.
- CI19.**Núñez, A., Oblak, S., **Sáez, D.**, Skjranc, I. "Hybrid Predictive Control based on Fuzzy Model". 2006 IEEE World Congress on Computational Intelligence, International Conference on Fuzzy Systems Vancouver, Canada, pp. 9079-9085, July 16-21, 2006.
- CI20.**Solis, J., **Sáez, D.**, Estévez, P. "Particle Swarm Optimization-based Fuzzy Predictive Control Strategy". 2006 IEEE World Congress on Computational Intelligence, International Conference on Fuzzy Systems Vancouver, Canada, pp. 8525- 8530, July 16-21, 2006.

- CI21.Sáez, D.,** Zúñiga, R. “Takagi-Sugeno Fuzzy Model Structure Selection based on New Sensitivity Analysis”, 2005 IEEE International Conference on Fuzzy Systems FUZZ-IEEE 2005, Reno, USA, pp. 501-506, May 22-25, 2005.
- CI22.Hernández, S., Sáez, D.,** Mery, D., Da Silva, R., Siqueira, M. “Automated Defect Detection in aluminium Castings and Welds using Neuro-fuzzy Classifiers”. Proceedings of 16th World Conference on Non-Destructive Testing (WCNDT 2004), Montreal, August 30 – September 03, 2004.
- CI23.Alayón, M., Sáez, D.,** Veiga, R. “Comparative Analysis of Neural Predictive Controllers and Its Application to a Laboratory Tank System”. International Joint Conference on Neural Networks IJCNN2004, Budapest, Hungary, July 25-29, 2004.
- CI24.Sáez, D.,** Zúñiga, R. “Cluster Optimization for Takagi & Sugeno Fuzzy Models and Its Application to a Combined Cycle Power Plant Boiler”, American Control Conference, ACC’ 2004, Boston, USA, June 30 – July 2, 2004.
- CI25.Sáez, D.,** Kemerer, E. “Fuzzy Predictive Strategies and its Application to a Laboratory Tank”. Proceedings of the European Control Conference, ECC’ 2003, University of Cambridge, UK, pp. 1716-1781, September 1-4, 2003.
- CI26.Alayon, M., Sáez, D.,** Veiga, R. “Analysis and design of control strategies based on neural networks”. Proceedings of the IASTED International Conference Intelligent Systems and Control, ISC 2003. Salzburg, Austria, pp. 212-217, June 25-27, 2003.
- CI27.Binstock, M., Sáez, D.,** Aignstein, M. “Trajectory control based on fuzzy logic for a robotic manipulator”. Proceedings of the IASTED International Conference Intelligent Systems and Control, ISC 2003, Salzburg, Austria, pp. 168-173, June 25-27, 2003.
- CI28.Sáez, D.,** Cipriano, A. “Design of a supervisory predictive controller based on fuzzy models”. Proceedings of the 10th IEEE International Conference on Fuzzy Systems, FUZZ-IEEE’2001, Melbourne, Australia, December 2-5, 2001.
- CI29.Sáez, D.,** Cipriano, A. “Fuzzy models based economic predictive control for a combined cycle power plant boiler”. Proceedings of the 1999 IEEE International Symposium on Intelligent Control, Intelligent Systems & Semiotics, ISIC’99, Cambridge, USA, pp. 417-422, September 15-17, 1999.
- CI30.Sáez, D.,** Cipriano, A. “Economic optimal control for a combined cycle power plant boiler”. Proceedings of the European Control Conference, ECC’99, Karlsruhe, Germany, August 31- September 3, 2009.
- CI31.Sáez, D.,** Cipriano, A. “Fuzzy modeling of a combined cycle power plant”. Proceedings of the 8th International Conference on Fuzzy Systems, FUZZ-IEEE’99, Seoul, Korea, pp. 1186-1190, August 22-25, 1999.

- CI32.Sáez, D.,** Cipriano, A. “Economical optimal control with environmental constraints for combined cycle power plants”. Proceedings of the 24th Annual Conference of the IEEE Industrial Electronics Society, IECON’98, Aachen, Germany, pp. 640-645, August 31 – September 4, 1998.
- CI33.Sáez, D.,** Sanz, M., Cipriano, A. “Prediction of the evolution of water chemical properties in the cycle of a coal power plant using artificial neural networks”. Proceedings of the IEEE International Joint Conference on Neural Networks, IJCNN’98, Anchorage, Alaska, USA, pp. 1981-1986, May 5-8, 1998.
- CI34.Sáez, D.,** Cipriano, A. “Fuzzy linear quadratic regulator applied to the real time control of an inverted pendulum”. Proceedings of the 5th IFAC Workshop on Algorithms and Architectures for Real-Time Control, Cancun, Mexico, pp. 185-190, April 15-17, 1998.
- CI35.Sáez, D.,** Cipriano, A. “Design of fuzzy model based predictive controllers and its application to an inverted pendulum”. Proceedings of the Sixth IEEE International Conference on Fuzzy Systems, FUZZ-IEEE’97, Barcelona, pp. 915-919, July 1-5, 1997.
- CI36.**Cipriano, A., **Sáez, D.** “Fuzzy generalized predictive control and its application to an inverted pendulum”. Proceedings of the 22nd Annual International Conference on Industrial Electronics, Control and Instrumentation, IECON’96, Taipei, Taiwan, pp. 1966-1971, August 5-10, 1996.
- CI37.**Cipriano, A., **Sáez, D.,** Ramos, M. “Fuzzy control on a laboratory environment”, IEEE International Symposium on Industrial Electronics, ISIE’95, Athens, July 10-14, 1995.

3.6 LATINAMERICAN AND NATIONAL CONFERENCES

- CN1.** Núñez, A., Riquelme, M., **Sáez, D.,** Cortés, C.E. “Control Predictivo Híbrido para el problema de ruteo dinámico de vehículos basado en optimización Multiobjetivo evolucionaria (EMO)”. XIII Congreso Chileno de Ingeniería de Transporte, Santiago, Chile, 22-26 Octubre 2007.
- CN2.** Báez, M., **Sáez, D.,** De Mayo, F. “Estrategias de Control Avanzado para el control de un Motor de Corriente Continua utilizando el Sistema de Control Distribuido DeltaV”. XVII Congreso de la Asociación Chilena de Control Automático, 10-12 Enero, Temuco, 2007.
- CN3.** Chacón, G., Ruiz del Solar, J., **Sáez, D.** “Fuzzy Sliding Mode Control based on Takagi & Sugeno Model Design and its application to a Simulated Robot Hand”, IEEE Latin American Robotics Symposium, Santiago 26-27 Octubre, 2006.
- CN4.** **Sáez, D.,** Beltrán, N., Vallebuona, G., Uribe, R. “Innovación Metodológica para el Curso “Control de Sistemas” del Departamento de Ingeniería Eléctrica.”. Actas XX Congreso Chileno de Educación en Ingeniería, Viña del Mar, 25-27 Septiembre 2006.

- CN5.** Núñez, A., **Sáez, D.**, Cortés, C.E. “Problema de ruteo dinámico de una flota de vehículos con un enfoque de control predictivo híbrido basado en algoritmos genéticos”, Actas del XII Congreso Chileno de Ingeniería de Transporte, Valparaíso, Chile, ISSN: 0717-3482, pp. 361-373, 17-21 Octubre 2005.
- CN6.** Cortés, C.E., **Sáez, D.**, Murcia, F., Núñez, A. “Control Predictivo Híbrido para un sistema personalizado de transporte público puerta a puerta programado en tiempo real”, Actas del XII Congreso Chileno de Ingeniería de Transporte, Valparaíso, Chile, ISSN: 0717-3482, pp. 375-388, 17-21 Octubre 2005.
- CN7.** **Sáez, D.**, Milla, F., “Estrategia de control supervisor difuso para la turbina a gas de una central termoeléctrica de ciclo combinado”, XVI Congreso de la Asociación Chilena de Control Automático, Santiago, 2-4 Noviembre, 2004.
- CN8.** **Sáez, D.**, Nuñez, A., Chong, A., Zúñiga, R., Albornoz, V. “Diseño de estrategias de control predictivo híbrido y su aplicación al control de temperatura de una estanque de nivel”, XVI Congreso de la Asociación Chilena de Control Automático, Santiago. 2-4 Noviembre, 2004.
- CN9.** Cofman, F., **Sáez, D.**, Gómez J. “Real-time environment for the design and evaluation of fuzzy controllers” Proceedings of the Argentine Symposium on Artificial Intelligence, ASAI'03, Buenos Aires, Argentina, September 3-5, 2003.
- CN10.** **Sáez, D.**, Cipriano, A. “Control predictivo supervisor para la caldera de una planta termoeléctrica”. XVIII Congreso Argentino de Control Automático, AADECA 2002, Buenos Aires, 2-6 Septiembre, 2002.
- CN11.** Araya, J., **Sáez, D.**, Cipriano, A., Guarini, M. “Simulador de una central de generación solar para ambiente MATLAB- SIMULINK”. XVI Congreso Chileno de Ingeniería Eléctrica, Antofagasta, 9-23 Noviembre, 2001.
- CN12.** **Sáez, D.**, Cipriano, A. “Diseño de una estrategia de control óptimo supervisor”. Anales del XIV Congreso Chileno de Control Automático ACCA2000, Concepción, pp. 106-111, 23-27 Octubre, 2000.
- CN13.** **Sáez, D.**, Cipriano, A. “Diseño de una estrategia de control óptima económica y su aplicación a una planta termoeléctrica de ciclo combinado”. Anales del XIII Congreso Chileno de Ingeniería Eléctrica, Santiago, Chile, pp. 644-649, Noviembre 8-12, 1999.
- CN14.** **Sáez, D.**, Cipriano, A. “Simulador de una central termoeléctrica de ciclo combinado para el diseño de estrategias de control”. Anales del VIII Congreso Latinoamericano de Control Automático y XIII Congreso de la Asociación Chilena de Control Automático, Viña del Mar, Chile, pp. 159-164, Noviembre 9-13, 1998.
- CN15.** **Sáez, D.**, “Estrategias de control predictivo para centrales termoeléctricas”. Apuntes del II Curso Iberoamericano de Informática en Sistemas Eléctricos, Santa Cruz de la Sierra, Bolivia, 27-31 Octubre, 1997.

- CN16. Sáez, D.,** Sanz, M., Cipriano, A. “Modelación de la química del agua de una central térmica utilizando redes neuronales”. Actas del XII Congreso Chileno de Ingeniería Eléctrica, Temuco, pp. 640-645, 3 - 8 Noviembre, 1997.
- CN17.** Cipriano, A., Concha, J., **Sáez, D.** “Fuzzy LQR estable para un péndulo invertido”. Actas del 7º Congreso Latinoamericano de Control Automático, Buenos Aires, pp. 18-24, Septiembre 9-13, 1996.
- CN18. Sáez, D.,** Albornoz, V., Ramos, M., Contesse, L., Mery, D., Cipriano, A. “Algoritmos de optimización utilizando procesamiento paralelo y su aplicación al despacho económico de generación eléctrica”. XII Congreso de la Asociación Chilena de Control Automático, ACCA'96, Santiago, pp. 31-37, Noviembre 18-22, 1996.
- CN19.** Cipriano, A., **Sáez, D.** “Real time environment for design and evaluation of model based fuzzy controllers”. Preprints of the 4th Symposium on Low Cost Automation, LCA'95, Buenos Aires, pp. 109-114, September 13-15, 1995.
- CN20. Sáez, D.,** Ramos, M., Cipriano, A. “Control difuso basado en modelo de un péndulo invertido”. Actas del XI Congreso Chileno de Ingeniería Eléctrica, ELECTRO'95, Punta Arenas, Vol. II, pp. D-077-D-082, Noviembre 13-17, 1995.

4. RESEARCH PROJECTS

- 2011-2013** Chilean Found for the Development of Science and Technology FONDECYT 1100047 “Hybrid Fuzzy Predictive Control For Renewable Energy Plants”, Principal Investigator.
- 2010-2013** Chilean Found for the Development of Science and Technology FONDECYT 1100239 “Advanced Modelling and Optimization of Dynamic Transport Systems”. Co-investigator.
- 2007-2009** Bicentennial Program in Science and Technology. Project ACT32 “Real Time Intelligent Control for Integrated Transit Systems”. Associate Researcher.
- 2006-2007** Chilean Found for the Development of Science and Technology FONDECYT 1061156 “Design of Predictive Control Strategies based on Fuzzy Hybrid Modeling”. Principal Researcher.
- 2004-2005** Chilean Found for the Development of Science and Technology FONDECYT 1040698 “Predictive Hybrid Control Systems with Continuous and Quantized Variables”. Principal Researcher.
- “Supervisory Control Strategies Design for Multivariable Non Linear Systems and its Application to Thermoelectric Plants”, Department of Research and Development, Universidad de Chile. Principal Researcher.
- 2003** International Project EPSRC “Towards Multiple-model based Learning Control Paradigms for Complex Systems”. Researcher.
- “Design of Supervisory Optimal Control strategies for Multivariable Non Linear Systems”, Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile. Principal Researcher.
- 2000** FONDECYT 4000026 “Stability for Optimizing Supervisory Control Systems with Defined Regulatory Structure”. Principal Researcher.
- 1999-1998** FONDECYT 2980029 “Design of Predictive Control Strategies based on Non Linear Models and its Application to the Control of Thermal Power Plants. Principal Researcher.

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