

Curriculum Vitæ

Dionysios C. Aliprantis

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EDUCATION

Ph.D. in Electrical and Computer Engineering, Dec. 2003

Purdue University, West Lafayette, IN

Dissertation title: “*Advances in electric machine modeling and evolutionary parameter identification*”

Advisor: Scott D. Sudhoff

Diploma in Electrical and Computer Engineering (5-year studies), July 1999

National Technical University of Athens, Greece

Diploma thesis title: “*Modeling and control of a variable-speed wind turbine equipped with a permanent-magnet synchronous generator*”

EMPLOYMENT

Assistant Professor, Aug. 2007–today

Iowa State University, Ames, IA, Electrical & Computer Engineering

Research Scientist, Jan. 2006–June 2007

Purdue University, West Lafayette, IN, Electrical & Computer Engineering

Computer Programmer, Sept. 2004–Sept. 2005

Hellenic Army, Research and Informatics Corps (1 yr. mandatory service)

Design Consultant Electrical Engineer, Jan.–Aug. 2004

LDK Consultants, Athens, Greece

Graduate Research Assistant, Aug. 1999–Dec. 2003

Energy Sources and Systems laboratory, Purdue University

Graduate Teaching Assistant, 2000 fall semester

Purdue University

Assistant Engineer, Summer 1996

Themeliodomi S.A., U.S. naval facilities, Souda Bay, Crete, Greece

HONORS & AWARDS

Litton Industries Assistant Professor, Iowa State University, Aug. 2009–July 2011

NSF CAREER award, 2009

IEEE senior member (SM'09)

Best paper award, SAE 2002 Power Systems Conference

Gerondelis Foundation graduate study scholarship (\$5,000 awarded to exceptional students of Greek nationality), July 2002

Technical Chamber of Greece award for academic performance during the year 1997–98

National scholarship for obtaining the second highest entrance examination grade among all applicants to the National Technical University of Athens school of Electrical & Computer Engineering, Sept. 1994

LANGUAGES

Greek, mother tongue

English, proficient

French, once fluent, now a bit rusty

MEMBERSHIPS–SOCIETIES

Registered professional electrical & computer engineer with the Technical Chamber of Greece

IEEE senior member

IEEE Industrial Applications Society member

IEEE Power & Energy Society member

IEEE Power Electronics Society member

American Society for Engineering Education (ASEE) member

BOOK CHAPTERS

1. E. Ibáñez, K. Gkritza, J. McCalley, D. Aliprantis, R. Brown, A. Somani, and L. Wang, “Interdependencies between energy and transportation systems for national long term planning,” in *Sustainable and Resilient Critical Infrastructure Systems. Simulation, Modeling, and Intelligent Engineering*, K. Gopalakrishnan and S. Peeta (Eds.), Springer, 2010, ISBN: 978-3-642-11404-5.

PEER-REVIEWED JOURNAL PUBLICATIONS

1. S. D. Sudhoff, D. C. Aliprantis, B. T. Kuhn, and P. L. Chapman, “An induction machine model for predicting inverter–machine interaction,” *IEEE Trans. Energy Conv.*, Vol. 17, No. 2, pp. 203–210, June 2002
2. S. D. Sudhoff, D. C. Aliprantis, B. T. Kuhn, and P. L. Chapman, “Experimental characterization procedure for use with an advanced induction machine model,” *IEEE Trans. Energy Conv.*, Vol. 18, No. 1, pp. 48–56, March 2003
3. D. C. Aliprantis, B. T. Kuhn, S. D. Sudhoff, and T. J. McCoy, “A detailed synchronous machine model,” *SAE 2002 Trans.—J. Aerosp.*, pp. 778–788, Sept. 2003. First published in the *SAE Power Syst. Conf.*, Coral Springs, Florida, Oct. 29–31, 2002; selected as the **Best Paper of the 2002 SAE Power Syst. Conf.**
4. S. Pekarek, J. Tichenor, N. Benavides, A. Koenig, H. Wang, S. Sudhoff, B. Kuhn, S. Glover, D. Aliprantis, J. Byoun, and J. Sauer, “Development of a testbed for design and evaluation of power electronic-based systems,” *SAE 2002 Trans.—J. Aerosp.*, pp. 850–858, Sept. 2003
5. D. C. Aliprantis, S. D. Sudhoff and B. T. Kuhn, “A synchronous machine model with saturation and arbitrary rotor network representation,” *IEEE Trans. Energy Conv.*, Vol. 20, No. 3, pp. 584–594, Sept. 2005
6. D. C. Aliprantis, S. D. Sudhoff and B. T. Kuhn, “Experimental characterization procedure for a synchronous machine model with saturation and arbitrary rotor network representation,” *IEEE Trans. Energy Conv.*, Vol. 20, No. 3, pp. 595–603, Sept. 2005
7. D. C. Aliprantis, S. D. Sudhoff and B. T. Kuhn, “A brushless exciter model incorporating multiple rectifier modes and Preisach’s hysteresis theory,” *IEEE Trans. Energy Conv.*, Vol. 21, No. 1, pp. 136–147, Mar. 2006
8. D. C. Aliprantis, S. D. Sudhoff and B. T. Kuhn, “Genetic algorithm-based parameter identification of a hysteretic brushless exciter model,” *IEEE Trans. Energy Conv.*, Vol. 21, No. 1, pp. 148–154, Mar. 2006

9. D. C. Aliprantis, O. Wasynczuk and C. D. Rodríguez Valdez, “A voltage-behind-reactance synchronous machine model with saturation and arbitrary rotor network representation,” *IEEE Trans. Energy Conv.*, Vol. 23, No. 2, pp. 499–508, June 2008
10. D. Wu, D. C. Aliprantis, and K. Gkritza, “Electric energy and power consumption by light-duty plug-in electric vehicles,” *IEEE Trans. Power Syst.*, Vol. 26, No. 2, pp. 738–746, May 2011
11. H. Chen and D. C. Aliprantis, “Analysis of squirrel-cage induction generator with Vienna rectifier for wind energy conversion system,” *IEEE Trans. Energy Conv.*, Vol. 26, No. 3, pp. 967–975, Sep. 2011
12. D. Wu, D. C. Aliprantis, and L. Ying, “On the choice between uncontrolled and controlled charging by owners of PHEVs,” *IEEE Trans. Power Deliv.*, Vol. 26, No. 4, pp. 2882–2884, Oct. 2011
13. D. Wu, D. C. Aliprantis, and L. Ying, “Load scheduling and dispatch for aggregators of plug-in electric vehicles,” to appear in *IEEE Trans. Smart Grid (Special Issue on Transportation Electrification and Vehicle-to-Grid Applications)*
14. A. M. Cramer, B. P. Loop, and D. C. Aliprantis, “Synchronous machine model with voltage-behind-reactance formulation of stator and field windings,” to appear in *IEEE Trans. Energy Conv.*

CONFERENCE PUBLICATIONS

1. D. C. Aliprantis, S. A. Papathanassiou, M. P. Papadopoulos, and A. G. Kladas, “Modeling and control of a variable-speed wind turbine equipped with permanent magnet synchronous generator,” in *Proc. Intern. Conf. Electr. Mach. (ICEM)* Espoo, Finland, Aug. 2000
2. S. D. Sudhoff, P. L. Chapman, B. T. Kuhn, and D. C. Aliprantis, “An advanced induction machine model for high-frequency drive analysis,” in *Proc. Third Naval Symp. Electr. Mach.* Philadelphia, PA, Dec. 4–7, 2000
3. S. D. Sudhoff, P. L. Chapman, B. T. Kuhn, and D. C. Aliprantis, “Experimental characterization of an advanced induction machine model,” in *Proc. Third Naval Symp. Electr. Mach.* Philadelphia, PA, Dec. 4–7, 2000
4. S. D. Sudhoff, B. T. Kuhn, D. C. Aliprantis, and P. L. Chapman, “An advanced induction machine model for predicting inverter–machine interaction,” in *Proc. IEEE Power Electr. Spec. Conf. (PESC)* Vancouver, Canada, June 17–21, 2001
5. S. Pekarek, D. Aliprantis *et al.*, “A hardware power electronic-based distribution and propulsion testbed,” in *Proc. Sixth IASTED Intern. Multi-Conf. Power Energy Syst.* Marina del Rey, California, May 12–15, 2002
6. B. Cassimere, S. Sudhoff, B. Cassimere, D. Aliprantis, and M. Swinney, “IGBT and PN junction diode loss modeling for system simulations,” in *Proc. IEEE Intern. Electr. Mach. Drives Conf. (IEMDC)* San Antonio, Texas, May 15–18, 2005
7. B. Cassimere, S. Sudhoff, B. Cassimere, D. Aliprantis, and M. Swinney, “Time-domain design of motor drive current regulators using genetic algorithms,” in *Proc. IEEE Intern. Electr. Mach. Drives Conf. (IEMDC)* San Antonio, Texas, May 15–18, 2005
8. N. Wu, C. Rands, C. E. Lucas, E. A. Walters, M. A. Hasan, D. Aliprantis, and M. A. Masrur, “Distributed heterogeneous simulation of a hybrid-electric vehicle,” in *Proc. Fourth Intern. Energy Conv. Eng. Conf. Exhibit (IECEC)*. San Diego, California, June 26–29, 2006
9. D. C. Aliprantis, O. Wasynczuk, N. Wu, C. E. Lucas, and A. Masrur, “Automated evolutionary design of a hybrid-electric vehicle power system using distributed heterogeneous optimization,” in *Proc. SAE Power Syst. Conf.* New Orleans, Louisiana, Nov. 7–9, 2006

10. N. Wu, C. E. Lucas, C. Rands, I. E. Simpson, D. C. Aliprantis, and A. Masrur, "Distributed heterogeneous simulation of a hybrid-electric vehicle drive system using the Simplorer software product," in *Proc. SAE Power Syst. Conf.* New Orleans, Louisiana, Nov. 7–9, 2006
11. C. Hoffmann, E. Swain, Y. Xu, T. Downar, L. Tsoukalas, P. Top, M. Senel, M. Bell, E. Coyle, B. Loop, D. Aliprantis, O. Wasynczuk, and S. Meliopoulos, "DDAS for autonomic interconnected systems: the national energy infrastructure," in *Proc. Intern. Conf. Comp. Sc. (ICCS)*. Beijing, China, May 27–30, 2007
12. S. Sarkar, P. Vijayan, D. C. Aliprantis, and V. Ajjarapu, "Effect of grid voltage unbalance on operation of a bi-directional converter," in *Proc. North American Power Symp. (NAPS)*. Calgary, Canada, Sep. 28–30, 2008
13. E. Ibáñez, J. McCalley, D. Aliprantis, R. Brown, K. Gkritza, A. Somani, and L. Wang, "National energy and transportation systems: interdependencies within a long term planning model," in *Proc. IEEE Energy 2030 Conf.* Atlanta, GA, Nov. 17–18, 2008
14. D. Wu, H. Chen, T. Das, and D. C. Aliprantis, "Bidirectional power transfer between HEVs and grid without external power converters," in *Proc. IEEE Energy 2030 Conf.* Atlanta, GA, Nov. 17–18, 2008
15. T. Das and D. C. Aliprantis, "Small-signal stability analysis of power system integrated with PHEVs," in *Proc. IEEE Energy 2030 Conf.* Atlanta, GA, Nov. 17–18, 2008
16. H. Chen, S. Sun, D. C. Aliprantis, and J. Zambreno, "Dynamic simulation of electric machines on FPGA boards," in *Proc. IEEE Intern. Electric Mach. & Drives Conf. (IEMDC)*, Miami, FL, May 3–6, 2009
17. R. Dai, J. D. McCalley, D. C. Aliprantis, V. Ajjarapu, T. Das, D. Wu, M. A. Riaz, and R. U. Imtiaz, "Hierarchical control for hybrid wind systems," in *Proc. North Amer. Power Symp. (NAPS)*, Starkville, MS, Oct. 4–6, 2009
18. H. Chen, S. Sun, D. C. Aliprantis, and J. Zambreno, "Dynamic simulation of DFIG wind turbines on FPGA boards," in *Proc. IEEE Power & Energy Conf. at Illinois (PECI)*, Urbana, IL, Feb. 12–13, 2010
19. D. Aliprantis, L. Tesfatsion, and H. Zhao, "An agent-based test bed for the integrated study of retail and wholesale power system operations," in *Proc. First Int. Workshop on Agent Technologies for Energy Systems (ATES)*, Toronto, Canada, May 11, 2010
20. S. Penick, H. Zhao, D. Aliprantis, and L. Tesfatsion, "Integrated retail and wholesale power system operation with smart grid functionality," in *Proc. IEEE Power Energy Soc. Gen. Meet.*, July 2010, Minneapolis, MN, July, 2010
21. J. McCalley, E. Ibáñez, K. Gkritza, D. Aliprantis, L. Wang, and A. Somani, "National long-term investment planning for energy and transportation systems," in *Proc. IEEE Power Energy Soc. Gen. Meet.*, Minneapolis, MN, July, 2010
22. H. Chen and D. C. Aliprantis, "Induction generator with Vienna rectifier: feasibility study for wind power generation," in *Proc. Int. Conf. Electrical Machines (ICEM)*, Rome, Italy, Sep. 6–8, 2010
23. H. Zhao, A. Thomas, P. Jahangiri, C. Cai, L. Tesfatsion, and D. Aliprantis, "Two-settlement electric power markets with dynamic-price customers," in *Proc. IEEE Power Energy Soc. Gen. Meet.*, Detroit, MI, July, 2011
24. C. Cai, P. Jahangiri, A. G. Thomas, H. Zhao, D. C. Aliprantis, and L. Tesfatsion, "Agent-based simulation of distribution systems with high penetration of photovoltaic generation," in *Proc. IEEE Power Energy Soc. Gen. Meet.*, Detroit, MI, July, 2011

25. D. Wu, C. Cai, and D. C. Aliprantis, "Potential impacts of aggregator-controlled plug-in electric vehicles on distribution systems," in *Proc. Fourth IEEE Intern. Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, San Juan, Puerto Rico, Dec. 2011