

CURRICULUM VITAE

Marija D. Ilic

Electrical and Computer Engineering
Carnegie Mellon University
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PERSONAL

Born February 11, 1951 in Zajecar, Yugoslavia, United States Citizenship

EDUCATION

Washington University, St. Louis, MO
DSc, Systems Science and Mathematics 1980
Thesis: *A New Approach to Load Flow Using Complex Power-Complex Voltage Graphs*
MSc, Systems Science and Mathematics 1978
University of Belgrade, Yugoslavia,
MEE, Electrical Engineering 1977
Dipl. Ing., Electrical Engineering 1974

PROFESSIONAL EXPERIENCE

Carnegie Mellon University
Professor of ECE and EPP, September 2002–present
Massachusetts Institute of Technology
Senior Research Scientist, 1989–2002
Visiting Associate Professor, 1987–1989
University of Illinois
Associate Professor (with tenure), 1986–1989
Assistant Professor, 1984–1986
General Electric R&D Center
Visiting Researcher, 1984
Cornell University
Assistant Professor, 1982–1984
Drexel University
Assistant Professor, 1981–1982
Washington University
Research Associate and Lecturer, 1981
Student Research Assistant, 1977–1980
Institute for Automation and Telecommunications, Belgrade
Principal Research Engineer, 1976–1977

CONSULTING EXPERIENCE

Alfatech, Inc. 2002–present
California ISO 2002–present
National Science Foundation 1999–2001
Standard & Poor's (Energy) 1997
Fulcrum International, Inc. 1997

CONSULTING EXPERIENCE (CONT.)

US Department of Energy 1996
The Tabors & Caramanis Associates. Co. 1995
Brattle/IRI, Inc., *Senior Advisor* 1994–present
Martin Marietta Energy Systems, Inc. 1991
Power Technologies, Inc. 1990
The ENMASS Co. 1990
New England Electric Service Co. 1989–1991
The Analytic Science Co. 1989–1991
Decision Systems, International Inc. 1988–1991
General Electric R&D Center 1985–1987

PRINCIPLE FIELDS OF INTEREST

Modeling and control of complex network systems; Nonlinear network and systems theory; Modeling and control of economic and technical interactions in dynamic systems under uncertainties; Critical infrastructures and their interdependencies; Computer methods and algorithms for simulating large-scale dynamic systems; Electric power systems modeling; Design of monitoring, control and pricing algorithms for electric power systems; Normal and emergency control of electric power systems.

PROFESSIONAL ACTIVITIES

Government Committees, Civic Appointments, Board Memberships

IEEE-USA Technical Policy Committee, *Member* May 2000–present
National Science Foundation, *Program Director* (50% time) 1999–2001
National Science Foundation Expert for Power Systems Program 1999
Mass House Committee on Science and Technology Panel on Y2K utility readiness 1999
NSF/DOE/EPRI Sponsored Workshop on “Future Research Directions for Complex Interactive Electric Networks,” *Organizer*, Washington, DC, November 16-17, 2000
OSTP/NSF Workshop on Long-Term R&D Needs for Critical Infrastructures and their Interdependencies, *Co-Initiator*, White House, Washington, D.C., June 14-15, 2001
NSF Workshop “Responding to the Unexpected,” *Organizing Committee*, New York City, February 27-March 1, 2002

Membership and Activities in Honorary Fraternities, Professional Societies

IEEE Fellow 1999
MIT, *Associate Member*, Center for Energy and Environmental Policy Research (CEEPR)
Stanford University, *Invited Member*, Energy Modeling Forum Working Group on “A Competitive Electricity Industry”
IEEE Circuits and Systems Society, Control Systems Society, Power Engineering Society (PES), Task Force on Voltage Instabilities, Working Group on Analytical Methods in Power Systems, Working Group on Flexible AC Transmission Systems, Systems Control Subcommittee, Working Group on Open Transmission Access, Working Group on Controls in the 21st Century
International Association of Energy Economists, *Member*

Editorial Roles on Publications, Major Activities in Professional Meetings

Encyclopedia on Energy, Associate Editor, Academic Press 2002
IEEE Panel on Value and Cost of Reactive Power Control, *Organizer and Chair* 1999
IEEE Working Group on Voltage Control, *Chairman and Guest Editor* 1998–present
Journal on Discrete Event Dynamic Systems
Guest Editor, Special Issue on Power Systems 1998
IEEE Distinguished Lecturer for Power Systems 1997–present
IASTED Conference on High Technology in the Power Industry, Program Committee 1997
International Conference on Power System Automation and Control
Program Committee 1997
Power Systems Computer Conference Program Committee 1996
NSF Graduate Fellowships, Panel 1996
Twenty-Eighth Annual North American Power Symposium, Organizing Committee 1996
Stanford Energy Modeling Forum Working Group 15 1995–present
International Journal on Energy Systems, *Guest Editor*, Special Issue on FACTS 1995
IEEE Conference on Control Applications, Program Committee 1995
Australian Research Council, Reviewer 1995–1997
IEEE Transactions on Circuits and Systems
Associate Editor 1993–1995
Associate Editor for Large Scale Systems & Networks 1987–1989
Conference Internationale des Grands Reseaux Electriques a Haute Tension (CIGRE)
U.S. Representative, Task Force on Voltage Problems 1992-1996
IEEE Conference on Decision & Control
Technical Program Committee 1992
Publications Chair 1988
Technical Program Committee 1986
International Symposium on Circuits and Systems, *Workshop Organizer* 1992
NSF Presidential Young Investigator Awards, *Review Panel* 1992, 1987
Workshop on Variable Structure Control of Power Conversions Systems
Program Committee June 1991
IEEE China Power Conference, *Co-Chair* 1991
International Journal on Electric Power & Energy Systems, *Associate Editor* 1989–present
IEEE Automatic Control Conference
Program Chair 1989
Vice Chair and Technical Program Committee 1988
IEEE Control Systems Society, Energy Technical Committee
Chair 1988–1991
Vice-Chair 1986–1988
IEEE Control Systems Magazine
Guest Editor, Special Issue on Energy Systems 1988
IEEE Central Illinois Section, *Vice Chair* 1986–1987

AWARDS, PRIZES, HONORS

- ◆ Best PhD Thesis Advisor, MIT Technology Policy Program Award 1998
- ◆ Best Student Paper (advisor/co-author), 34th IEEE Conference on Decision and Control Award, New Orleans, LA 1995
- ◆ University Scholar Award, University of Illinois 1987
- ◆ Xerox Faculty Award, College of Engineering, University of Illinois 1986
- ◆ Best paper (Control Area), IEEE Power Electronics Systems Conference Award, Toulouse, France 1985
- ◆ Presidential Young Investigator Award 1984–1989
- ◆ Dr. V. Bedjanic Award for outstanding results published in the Master of Electrical Engineering Degree Thesis, Yugoslavia 1978
- ◆ Dr. Dusan Mitrovic Award for best paper in the Automation Group, XXI Yugoslavian Conference on Electronics, Telecommunications and Automation 1978
- ◆ City of Belgrade, Yugoslavia, Award for special achievements in scholastic work 1974

PATENTS

- ◆ M.D. Ilic and J.W. Chapman, “Decentralized Excitation Control for an Electrical Power Utility System,” US patent number 5 483 147, 1996
- ◆ M.D. Ilic and S.X. Liu, “Direct Control of Inter-area Dynamics in Large Power Systems Using Flexible AC Transmission Systems (FACTS) Technology,” US patent 5 517 422, 1996
- ◆ M.D. Ilic and Y. Yoon, “Inter-regional Transmission Organization: Design, Functions and Tariffs,” October 14, 2000, MIT, Case No. 9062

GRANTS AND CONTRACTS

- ◆ National Science Foundation (NSF) (including First PYI for Electric Power System)
- ◆ Asea Brown Boveri (ABB), Inc.
- ◆ Siemens, Inc.
- ◆ Korea Electric Power Corporation
- ◆ US Department of Energy (DOE)
- ◆ DOE/Energy Information Administration (EIA)
- ◆ Southern California Gas Corporation
- ◆ Electric Power Research Institute (EPRI)
- ◆ EPRI/US Department of Defense (DOD)
- ◆ Electricite De France
- ◆ Constellation Power Systems
- ◆ TransEnergie USA
- ◆ Empire State Electric Research Corporation (ESEERCO)
- ◆ New England Electric System (NEES)
- ◆ National Grid (NG) USA
- ◆ Merrill Lynch
- ◆ UK Government (through Cambridge University/MIT Initiative)

Details on the level of funding and subjects lectured available upon request.

EDUCATIONAL CONTRIBUTIONS

Developed graduate level curriculum for the electric power systems at MIT, EECS Department. Developed three permanent courses in EECS, MIT. in the area of electric power systems. Significant contributions to theses supervision in the area of electric power systems at MIT over the past 15 years. Written several books.

SUBJECTS LECTURED

MIT

- ◆ Advanced Electric Power Systems I
Fall 1990, Fall 1992, Fall 1994, Fall 1996, Fall 1999, Fall 2000
- ◆ Advanced Electric Power Systems II
Spring 1991, Spring 1993, Spring 1995, Spring 1997, Spring 2000, Spring 2001
- ◆ Circuits and Electronics
Fall 1987-Spring 1989, Spring 1998
- ◆ Dynamics and Control of Electrical Machines
Spring 1990, Spring 1992, Spring 1994
- ◆ Feedback Systems
Spring 1994
- ◆ Hierarchical Control of Power Systems: Its Value Under Changing Industry
Spring 1996
- ◆ Introduction to Electric Power Systems
Spring 1991
- ◆ Large Scale Dynamic Systems Revisited
Spring 2002
- ◆ Operation and Planning of Electric Power Systems
Spring 1989, Fall 1991, Fall 1993, Fall 1995, Fall 1997, Fall 1999, Fall 2001

University of Illinois

- ◆ Advanced Modeling & Control of Electrical Machines (Spring 1985, Spring 1986)
- ◆ Computer Methods for Electric Networks (Fall 1984)
- ◆ Computer Methods in Electric Power Systems (Spring 1987)
- ◆ Power Electronics (Fall 1985, Fall 1986)
- ◆ Solid State Control of Electric Drives (Spring 1986)
- ◆ Special Topics in Electric Power Systems (Spring 1986, Fall 1986, Spring 1987)

Cornell University

- ◆ Electrical Engineering Laboratory (Fall 1982)
- ◆ Linear Circuits & Systems (Spring 1984)
- ◆ Power Systems Analysis I & II (Spring 1983 & Fall 1983)

Drexel University

- ◆ Linear Circuits Analysis (Fall 1981)
- ◆ Linear Circuits Design (Spring 1982)
- ◆ Linear Systems Theory (Spring 1982)

Washington University

- ◆ Advanced Power Systems Analysis (Spring 1981)
- ◆ Numerical Analysis (Spring 1980)
- ◆ Probability and Engineering Statistics (Fall 1980)

OTHER TEACHING ACTIVITIES

- University of Illinois, Videotapes for the Continuing Education Office 1986
Course: Advanced Modeling and Control of Electrical Machines Spring
- Decision Systems International, Inc., London, England 1988
Course: Reactive Power/Voltage Problems in Large Scale Electric Power Systems
- Water and Electricity Department, Abu Dhabi, United Arab Emireates 1989
Course: Reactive Power/Voltage Monitoring and Control in
Large Scale Electric Power Systems
- Decision Systems International, Inc., Monaco 1990
Course: Reactive Power/Voltage Problems in Large Scale Electric Power Systems
- Decision Systems International, Inc., Marbella, Spain 1991
Course: Reactive Power/Voltage Problems in Large Scale Electric Power Systems

LIST OF PUBLICATIONS

Books

6. Yoon, Y. and Ilic, M., *Transmission Provision and Pricing in the Changing Electric Power Industry*, Kluwer Academic Publishers (to appear, March 2003).
5. Skantze, P. and Ilic, M., *Valuation, Hedging and Speculation in Competitive Electricity Markets: A Fundamental Approach*, Kluwer Academic Publishers, 2001
4. Ilic, M.D. and J. Zaborszky, *Dynamics and Control of Large Electric Power Systems*, Wiley Interscience, May 2000 (900 pages).
3. Allen, E.H., Ilic, M., *Price-Based Commitment Decisions in the Electricity Market*, Springer-Verlag London Series on Advances in Industrial Control, November 1998.
2. Ilic, M., F. D. Galiana and L. Fink (eds.) *Power Systems Restructuring: Engineering and Economics*, Kluwer Academic Publishers, 1998.
1. Ilic, M.D. and S.X. Liu, *Hierarchical Power Systems Control: Its Value in a Changing Electric Power Industry*, Springer-Verlag London Limited Series, Advances in Industrial Control, 1996.

Sections or Chapters in Edited Monographs or Similar Volumes

11. Yoon, Y., Ilic, M., "Transmission Expansion in the New Environment", Chapter 5 in *Power System Restructuring and Deregulation: Trading, Performance and Information Technology* (Editor I. Lai), John Wiley & Sons, 2000.
10. Ilic, M., "Power System Control", Chapter 12, *Handbook for Power System Calculations*, Mc-Graw Hill, 2000.
9. Awerbuch, S., Hyman, L.S., Vesey A., (Eds.), *Unlocking the Benefits of Restructuring: A Blue Print for Transmission*, Public Utilities Reports Inc. Vienna, VA, 1999.
8. Cardell, J. and M. Ilic, "Stability and Control Strategies for Distributed Generation Systems," in *Power Systems Restructuring: Engineering and Economics*, Kluwer Academic Publishers, 453-518, 1998.
7. Younes, Z. and M. Ilic, "Transmission Networks and Market Power," in *Power Systems Restructuring: Engineering and Economics*, Kluwer Academic Publishers, 337-386, 1998.
6. Coxe, R. and M. Ilic, "System Planning Under Competition," in *Power Systems Restructuring: Engineering and Economics*, Kluwer Academic Publishers, 285-335, 1998.
5. Galiana, F.D. and M.D. Ilic, "Framework and Methods for the Analysis of Bilateral Transactions," in *Power Systems Restructuring: Engineering and Economics*, Kluwer Academic Publishers, 108-128, 1998.
4. Ilic, M. and F.D. Galiana, "Power Systems Operation: Old vs. New," in *Power Systems Restructuring: Engineering and Economics*, Kluwer Academic Publishers, 15-107, 1998.
3. Ilic, M., L. Hyman, E. Allen, R. Cordero and C.N. Yu, "Interconnected System Operations and Expansion in a Changing Industry: Coordination vs. Competition," in *The Virtual Utility: Accounting, Technology & Competitive Aspects of the Emerging Industry*, Shimon Awerbuch and Alistair Preston (eds.), Kluwer Academic Publishers, 307-355, series on Topics in Regulatory Economics and Policy, 1997.
2. Ilic, M., "Modern Approaches to Modeling and Control of Electric Power Systems," in *Control and Dynamic Systems 41*, Academic Press Inc., 1-78, 1991.
1. Ilic, M., "Reactive Power: Fundamentals, Problems and Solutions," in *IEEE Special Publications*, G. Sheble, ed., San Francisco, CA, 1987 (second edition New York, NY, 1988).

Archival Papers Critically Reviewed Before Publication

75. Ilic, M, "The Future Power Grid: Redefining the Value of Reliability," Power Quality Magazine (cover story), p. 15-21, June 2002.
74. Wagner, M., Skantze, P., Ilic, M., "Hedging Optimization Algorithms for Deregulated Electricity Markets", Journal of Economic Dynamics and Control (under submission), September 2002.
73. Fumagalli, E., Black, J., Ilic, M., Vogelsang, I., "Quality of Service Provision in Distributed Electric Power Systems Through Reliability Insurance", IEEE Transactions on Power Systems (to appear), February 2003.
72. Ilic, M., Hyman, L., "Don't Rush the Seamstress: Second Thoughts on the Marriage of the Northeast Grids", Public Utilities Fortnightly, September 1, 2001.
71. Allen, E., N. LaWhite, Y.T. Yoon, J.W. Chapman and M.D. Ilic, "Interactive Object-Oriented Simulation of Interconnected Power Systems using SIMULINK," the IEEE Transactions on Education, vol. 44, February 2001.
70. Ilic, M., Skantze, P., Visudhiphan, P., "Speakout: Electricity Troubles in California: Who's Next?", IEEE Spectrum Magazine, February 2001, pp.11-13.
69. Ilic, M., Arce, J.R., Yoon, Y., Fumagali, E., "Assessing Reliability as the Electric Power Industry Restructures", The Electricity Journal, pp. 55-67, March 2001.
68. Allen, E.H., Ilic, M.D., "Reserve Markets for Power Systems Reliability", IEEE PES Transactions, paper number 99 WM 343 (accepted, to appear)
67. Allen, E.H., Ilic, M.D., "Stochastic Unit Commitment for Power Producers", IEEE Transactions on Energy Conversion (accepted, to appear).
66. Allen, E.H. and M. Ilic, "Interaction of Transmission Network and Load Phasor Dynamics in Electric Power Systems," IEEE Transactions on Circuits and Systems I: Fundamental Theory and Applications, November 2000, pp. 1613-1620.
65. Ilic, M., "Eulogy for RTOs-Interregional is Better", Public Utilites Forthnightly, Oct 15, 2000.
64. Ilic, M., Skantze, P., "Electric Power Systems Operation by Decision and Control: The Case Revisited", IEEE Control Systems Magazine, August 2000, pp. 25-39.
63. Prada, J.F., Ilic, M.D., "Pricing Reliability: A Probabilistic Approach", Energetica, vol. 23, pp. 75-89, July 2000, ISSN 0120-9833, Columbia.
62. Yu, CN, Leotard, J-P, Ilic, M., "Dynamics of Transmission Provision in Competitive Electric Power Industry", Discrete Event Dynamic Systems: Theory and Applications, 9, 351-388, Kluwer Academic Publishers, Boston, MA.
61. Yu, CN, Yoon, Y.T., Ilic, M., Catelli, A., "On-line Voltage Regulation: The Case of New England", PE-082-PWRS-0-02-1999.
60. Allen, E., M. Ilic and Z. Younes, "Providing for Transmission in Times of Scarcity: An ISO Cannot Do it All," Electrical Power and Energy Systems, pp. 147-163, 1999 (Special Issue on Deregulation).
59. Ilic, M., "Benefits of Deregulation: Who Pays for Reliability?" Energia (invited), September 1998.
58. Younes, Z. and M. Ilic, "Generation Strategies for Gaming Transmission Constraints: Will the Deregulated Electric Power Market Be an Oligopoly?", Journal of Decision and Support Systems, (Special Issue on Restructuring of the Electric Power Industry), 1999.
57. Galiana, F.D. and M.D. Ilic, "A Mathematical Framework for the Analysis and Management of Power Transactions Under Open Access," IEEE Transactions on Power Systems, PWRS-13, 681-687, May 1998.

56. Ilic, M., F.D. Galiana, L.H. Fink, A. Bose, P. Mallet, and H. Othman, "Large Transmission Capacity in Power Networks," *Electrical Power and Energy Systems*, 20, 99-110, 1998.
55. Ilic, M., Y.T. Yoon, A. Zobian, and M.E. Paravalos, "Toward Regional Transmission Provision and its Pricing in New England," *Utilities Policy*, 6, 245-256, 1997.
54. Hyman, L. and M.D. Ilic, "Scarce Resource, Real Business or Threat to Profitability?" *Public Utilities Fortnightly*, October 1997.
53. Ilic, M., L. Hyman, E.H. Allen and Z. Younes, "Transmission Scarcity: Who Pays?" *The Electricity Journal*, 10, 38-49, July 1997.
52. Hyman, L. and M.D. Ilic, "Will Consumers Benefit From New Power Era?" *Forum on Applied Research and Policy*, 12, 59-68, June 1997.
51. Fink, L., M. Ilic and F.D. Galiana, "Transmission Access Rights and Tariffs," *Electric Power Systems Research*, 43, 197-206, June 1997.
50. Ilic, M.D., Y.T. Yoon and A. Zobian, "Available Transmission Capacity and Its Value Under Open Access," *IEEE Transactions on Power Systems*, 12, 636-645, May 1997.
49. Zobian, A. and M.D. Ilic, "Unbundling of Transmission and Ancillary Services Part II: Cost-Based Pricing Framework," *IEEE Transactions on Power Systems*, 12, 549-558, May 1997.
48. Zobian, A. and M. D. Ilic, "Unbundling of Transmission and Ancillary Services Part I: Technical Issues," *IEEE Transactions on Power Systems*, 12, 539-548, May 1997.
47. LaWhite, N. and M.D. Ilic, "Vector Space Decomposition of Reactive Power for Periodic Nonsinusoidal Signals," *IEEE Transactions on Circuits and Systems, Part I, Fundamental Theory and Applications*, 44, 338-346, April 1997. Notable paper: This paper considers fundamentals of reactive power in non-sinusoidal signals.
46. Ilic, M., S.X. Liu, B.D. Eidson, C. Vialas, and M. Athans, "A Structure-Based Modeling and Control of Electric Power Systems," *IFAC Automatica*, 33, 515-531, March 1997. Notable paper: This paper reports the new concept of tertiary coordinating scheme for regional voltage regulation and improved secondary voltage control in complex power systems. Depending on the objectives of the control design, the secondary control can be made to eliminate inter-regional interactions, or more interactions are allowed and optimized for systemwide performance of the interconnection.
45. Ilic, M. and L. Hyman, "Getting it Right the First Time: The Value of Transmission and High Technologies," *The Electricity Journal*, 9, 8-17, November 1996.
44. Ilic, M., "A Summer of Shortage," *Public Utilities Fortnightly*, July 1996.
43. Zobian, A. and M.D. Ilic, "A Steady-State Voltage Monitoring and Control Algorithm Using Localized Least Squares Minimization of Load Voltage Deviation," *IEEE Transactions on Power Systems*, 11, 929-938, May 1996.
42. Ilic, M.D., F.C. Graves, L.H. Fink and A. DiCaprio, "A Framework for Operations in Competitive Open Access Environment," *The Electricity Journal, Special Issue on Restructuring of the Utility Industry*, 9 61-69, April 1996.
41. Allen, E.H., J.W. Chapman and M.D. Ilic, "Effects of Torsional Dynamics on Nonlinear Generator Control," *IEEE Transactions on Control Systems Technology*, 4, 125-140, March 1996. Notable paper: This paper for the first time provides a control design for stabilizing a long standing problem of sub-synchronous resonance in operating electric power grid interconnected via long transmission lines. The paper is an important application of feedback linearizing control.
40. Ilic, M.D., Editorial in *International Journal on Electrical Power Energy Systems*, 17, 1995. (Special Issue), 1-2.

39. Ilic, M.D., "Fundamental Engineering Problems and Opportunities in Operating Power Transmission Grids of the Future," *International Journal on Electrical Power Energy Systems*, 17, 207-214, 1995. (Special Issue)
38. Ilic, M.D., S.X. Liu, G. Leung, C. Vialas and M. Athans, "Improved Secondary and New Tertiary Voltage Control," *IEEE Transactions on Power Systems*, 10, 1851-1862, November 1995. Notable paper: This paper illustrates the relevance of structure-based modeling for large power networks. The results are demonstrated on the French power system and considered as a possible concept for the next stage National Control Center in Paris, France.
37. Yehia, M., R. Chedid, Z. Jaber, M.D. Ilic and A. Zobian, "An Improved Dynamically Allocated Data Structure for Power System Problems," *The International Journal of Modeling and Simulation*, 61-65, 1997.
36. Ilic, M.D. and X.S. Liu, "A Modeling and Control Framework for Operating Large-Scale Electric Power Systems Under Present and Newly Evolving Competitive Industry Structures," *Journal on Mathematical Problems in Engineering*, 1, 317-340, October 1995. (invited)
35. Yehia, M., R. Chedid, M. Ilic, A. Zobian, R. Tabors and J. Lacalle-Mellero, "Global Planning Methodology for Uncertain Environments: Application to the Lebanese Power System," *IEEE Transactions on Power Systems*, PWRS-10, 332-338, February 1995.
34. King, C.A., J.W. Chapman, and M.D. Ilic, "Feedback Linearizing Excitation Control on a Full-Scale Power System Model," *IEEE Transactions on Power Systems*, 9, 1102-1111, 1994.
33. Chedid, R., N. LaWhite and M.D. Ilic, "Simulating Dynamic Interactions of Grid-Linked Wind Turbines," *IEEE Computer Applications in Power*, 1994.
32. Chedid, R., N. LaWhite and M.D. Ilic, "A Comparative Analysis of Dynamic Models for Performance Calculation of Grid-Connected Wind Turbine Generators," *Wind Engineering*, 17, 168-182, 1993.
31. Nishimura, F., R.D. Tabors, M.D. Ilic, and J.R. Lacalle-Melero, "Benefit Optimization of Centralized and Decentralized Power Systems in a Multi-Utility Environment," *IEEE Transactions on Power Systems* PWRS-8, 830-839, August 1993.
30. Chapman, J.W., M.D. Ilic, C.A. King, et al., "Stabilizing a Multimachine Power System via Decentralized Feedback Linearizing Excitation Control," *IEEE Transactions on Power Systems*, PWRS-8, 830-839, August 1993. Notable paper: This paper introduces for the first time feedback linearizing control design for primary controllers of generators in a complex power system. An entirely decentralized implementation of this approach is developed; it is based on combining the idea of so-called Observation Decoupled State Space (ODSS) for regulating the set point value of the controller with the feedback linearizing design for primary control logic.
29. Mak, F.K. and M.D. Ilic, "Classification of Voltage Problems in Electric Power Systems," *International Journal on Electrical Power and Energy Systems*, 15, 377-385, April 1993.
28. Ilic, M.D., J.R. Lacalle-Melero, F. Nishimura, W. Schenler, D. Shirmohammadi, A. Crough, and A. Catelli, "Short-Term Economic Energy Management in a Competitive Utility Environment," *IEEE Transactions on Power Systems*, 8, 198-206, February 1993.
27. Tylavsky, D.J. and A. Bose, "Parallel Processing in Power Systems," (M.D. Ilic, co-contributor), *IEEE Transactions on Power Systems*, 7, 629-638, 1991.
26. Stankovic, A., M. Ilic and D. Maratukulam, "Recent Results in Secondary Voltage Control of Power Systems," *IEEE Transactions on Power Systems* 6, 94-101, February 1991.

25. Ilic, M. and A. Stankovic, "Voltage Problems on Transmission Networks Subject to Unusual Power Flow Patterns," IEEE Transactions on Power Apparatus and Systems 6, 339-348, February 1991.
24. Ilic, M. and W. Stobart, "Development of a Smart Algorithm for Voltage Monitoring and Control," IEEE Transactions on Power Systems PWRS-5, 1183-1193, November 1990.
23. Crow, M.L. and M. Ilic, "The Parallel Implementation of the Waveform Relaxation Method for Transient Stability Simulations," IEEE Transactions on Power Systems 5, 922-932, 1990.
22. Sira-Ramirez, H. and M. Ilic, "Exact Linearization in Switched-Mode DC to DC Power Converters," International Journal of Control 50, 511-524, August 1989.
21. Ilic, M., "New Approaches to Voltage Monitoring and Control," IEEE Control Systems Magazine, Special Issue on Energy Systems Control, 5-11, January 1989.
20. Ilic, M., "Energy Systems Control," IEEE Control Systems Magazine, Special Issue on Energy Systems Control, 3-4, January 1989.
19. Sira-Ramirez, H. and M. Ilic, "A Geometric Approach to the Feedback Control Design for DC-DC Power Converters," IEEE Transactions on Circuits and Systems 35, 1291-1298, October 1988.
18. Ilic-Spong, M., J. Christensen, and K.L. Eichorn, "Secondary Voltage Control Using Pilot Point Information," IEEE Transactions on Power Systems 3, 660-668, May 1988.
17. Ilic-Spong, M., M.L. Crow and M.A. Pai, "Transient Stability Simulation by Waveform Relaxation Methods," IEEE Transactions on Power Systems, PWRS-2, 943-952, November 1987.
16. Medanic, J., M. Ilic-Spong, and J. Christensen, "Discrete Models of Slow Voltage Dynamics for Under Load Tap Changing Transformer Coordination," IEEE Transactions on Power Apparatus and Systems PWRS-2 873-882, November 1987. Notable paper: Often cited in the area of voltage collapse literature. The first to introduce slow control-driven voltage dynamics.
15. Ilic, M. and J. Zaborszky, "Fundamentals of Voltage-Reactive Power Analysis and Control," IEEE Transactions on Power Systems, special publication 87EH0262-6-PWR, 61-114, July 1987.
14. Ilic-Spong, M., R. Marino, S.M. Peresada, and D.G. Taylor, "Feedback Linearizing Control of Switched Reluctance Motors," IEEE Transactions on Automatic Control AC-32, 371-379, May 1987.
13. Ilic-Spong, M., J.S. Thorp, T.J. Miller, and S. Mac Minn, "Instantaneous Torque Control of Electric Motor Drives," IEEE Transactions on Power Electronics PE-2, 55-61, January 1987.
12. Zaborszky, J., M. Ilic-Spong, G. Huang, and F. Dobraca, "Computer Control of the Large Power System During Faults for Inherently Adaptive Selective Protection," IEEE Transactions on Power Apparatus and Systems PWRS-2, 494-504, 1987.
11. Ilic-Spong, M. and A. Phadke, "Redistribution of Reactive Power Flow in Contingency Studies," IEEE Transactions on Power Apparatus and Systems PWRS-1, 266-275, August 1986.
10. Thorp, J., M. Ilic-Spong, and D. Schulz, "Reactive Power - Voltage Problem: Conditions for the Existence of Solution and Localized Disturbance Propagation," International Journal on Electrical Power and Energy Systems 8, 66-74, April 1986.
9. Ilic-Spong, M., J. Thorp and M. Spong, "Localized Response Performance of the Decoupled Q-V Network," IEEE Transactions on Circuits and Systems CAS-33, 316-322, March 1986. Notable paper: This paper for the first time formulates the reactive power voltage problem as a nonlinear DC network problem and establishes conditions under which this network

has monotonic response. The particular challenge comes from defining the regions where this property holds (the network has both positive and negative resistors, which requires tools beyond diagonal dominance conditions). As in other electric networks, this property is extremely useful when making the localized response argument.

8. Thorp, J.S., M. Ilic-Spong, and M. Varghese, "An Optimal Secondary Voltage-Var Control Technique," *IFAC Automatica* 22 217-221, 1986.
7. Ilic-Spong, M., M. Spong, and R. Fischl, "The No-gain Theorem and Localized Response for the Decoupled P--O Network with Active Power Losses Included," *IEEE Transactions on Circuits and Systems CAS-32*, 170-177, February 1985.
6. Ilic-Spong, M., N. Katz, and J. Zaborszky, "Block Diagonal Dominance for Systems of Nonlinear Equations with Application to Load Flow Calculations in Power Systems," *International Journal on Mathematical Modeling* 5, 275-297, December 1984.
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25. Ilic-Spong, M., M. Crow, and M.A. Pai, "Transient Stability Simulation by Waveform Relaxation Methods," IEEE Power Engineering Society Meeting, Mexico City, Mexico, July 1986.
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15. Ilic-Spong, M. and A. Phadke, "Redistribution of Reactive Power Flow in Contingency Studies," Proceedings of the 14th Power Industry Computer Applications Conference, San Francisco, CA, May 1985.

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12. Ilic-Spong, M., "An Electric Power Adjoint Network for Reactive Power Voltage Studies," Proceedings of the IEEE International Conference on Circuits and Systems, Montreal, Canada, May 1984, pp. 368-371.
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9. Ilic-Spong, M. and J. Thorp, "Conditions for Localized Response in Decoupled Voltage-Var Networks," Proceedings of the Power System Computer Control Conference, Helsinki, Finland, 1984, pp. 664-670.
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45. Fumagalli, E., Black, E., Ilic, M., Vogelsang, I., "A Reliability Insurance Scheme for the Electricity Distribution Grid," MIT E-lab MIT EL 01-001 WP, January 2001.
 44. Ilic, M., Skantze, P., Vusdhiphan, P., "California Electricity Troubles: Is Massachusetts Next?," MIT Tech Talk, January 2001.
 43. Ilic, M., Skantze, P., Visudhiphan, P., "Refrain (Pianissimo): California here we come?," Focus Section, Boston Globe , January 2001.
 42. Ilic, M., Yoon, Y., Comments to the FERC Docket No. RT01-01 regarding Formation of the RTO's, January 2001.
 41. Ilic, M., "Comments to the North American Electric Reliability Council " concerning the FERC Inquiry on Electric Reliability Issues for the Interstate Electric Transmission System, 2001.
 40. Yoon, Y.T., Colisson, K., Arce, J.R., Ilic, M.D., "Practical Implementation of a Congestion Cluster Pricing Method," MIT E-Lab WP EL 00-006, August 2000.
 39. Yoon, Y.T., Arce, J.R., Collison, K., Ilic, M.D., "Implementation of Cluster-based Congestion Management Systems," MIT E-Lab WP EL 00-001, May 2000.
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 35. Skantze, P., Gubina, A., Ilic, M., "Bid-based Stochastic Model for Electricity Prices: The Impact of Fundamental Drivers on Market Dynamics," MIT E-Lab report MIT-EL 00-004, November 2000.
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25. Lecinq, B. and M. Ilic, "Peak-load Pricing for Transmission in a Deregulated Industry," MIT Energy Laboratory, EL 96-005, June 1996.
24. Ilic, M., "Appendix B: Hierarchical Power Systems Control: Its Value in a Changing Industry," in Interconnected Operations Services: Defining System Requirements Under Open Access, Tampa Electric Company, March 1996.
23. Ilic, M.D. and A. Zobian, "Steady State Voltage Monitoring and Control," EPRI TR-105393, Project 2473-70, November 1995.
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21. Ilic, M., Graves, F.C., "Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities," Reply Comments to the Federal Energy Regulatory Commission, Docket No. RM95-7-001, October, 1995.
20. Ilic, M., F. Graves, L. Fink and A. DiCaprio, "A Framework for Operations in Competitive Open Access Environment," MIT Energy Laboratory EL 95-003, October 1995.
19. Ilic, M. and F. Graves, "Optimal Use of Ancillary Generation Under Open Access and Its Possible Implementation," MIT Laboratory for Electromagnetic and Electronic Systems, TR 95-006, August 1995.
18. Graves, F.C., Ilic, M., "Pricing of Electricity Network Services to Preserve Network Security and Quality of Frequency Under Transmission Access," Response to the Federal Energy Regulatory Commission, Docket No. RM93-19-000, November 1993.
17. Chapman, J.W and M. Ilic, "Large-Signal Generator Control and its Impact on Improved Power Transfer Flexibility," Final Report ESEERCO Project EP90-45, September 1993.
16. Ilic, M., "Fundamental Engineering Problems and Opportunities in Operating Power Transmission Grids of the Future," MIT Laboratory for Electromagnetic and Electronic Systems WP93-001, January 1993.
15. Ilic, M., J.R. Lacalle-Melero, and W.J. Stobart, "Steady State Voltage Monitoring and Control," MIT Laboratory for Electromagnetic and Electronic Systems TR92-001, March 1992.
14. Ilic, M. Lacalle-Melero, J., Nishimura, F., Schenler, W., "Short-Term Economic Energy Management in a Deregulated Environment: An Engineering Based Approach," MIT Laboratory for Electromagnetic and Electronic Systems WP91-003, June 1991.
13. N. D. Reppen and M. Ilic, "Incipient System Voltage Collapse Analysis," in Final Report by Power Technologies, Inc., Schenectady, NY, June 1991.
12. Ilic, M., J.R. Lacalle-Melero, and W.J. Stobart, "Final Report on the MIT Approach to Voltage Monitoring and Corrective Actions for the New England Power Pool," MIT Laboratory for Electromagnetic and Electronic Systems TR91-002, May 1991.
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10. Ilic, M., "Research Agenda for Power Systems Monitoring and Control: Voltage Related Problems," MIT Laboratory for Electromagnetic and Electronic Systems TR90-004, October 1990.

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6. "Development of a Decoupling Methodology for On-Line Detection of System Instabilities," Volumes I and II, US DOE Final Report, 1987.
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2. Ilic-Spong, M., "A New Approach to Load Flow Using Complex Power-Complex Voltage Graph," DSc Thesis, Washington University, St. Louis, MO, 1980.
1. Ilic, M., "Multicriteria Optimization of Energy Control in Complex Systems as Applied to Power Systems," MEE Thesis, University of Belgrade, Yugoslavia, January 1977.

INVITED CONFERENCE PRESENTATIONS

118. February 2002, Panel on Electricity Restructuring, AAAS Meeting, Boston, MA.
117. January 2002, "A Proposal for an Inter-Regional Transmission Organization (IRTO)", IEEE Panel, New York City, NY.
116. December 2001, Model-Based Protocols for the Changing Electric Power Industry, MIT LIDS Series Talk, Cambridge, MA.
115. November 2001, Model-Based Protocols for the Changing Electric Power Industry, EPP Department Talk, Carnegie Mellon University, Pittsburgh, PA.
113. November 2001, The Electricity Provision in the Changing Industry, WPI ECE Department Talk Series, Worcester, MA
112. October 2001, Protocols and Software for the Changing Electric Power Industry: Tradeoffs between T&D and DG, Alstom/MIT Meeting, Cambridge, MA.
111. September 2001, Valuing Transmission Service: Product Definition, Market Design and Software, Electricity Transmission Meeting, IIR, Arlington, VA.
110. September 2001, A Possible Transmission Market Design and Performance-Based Tariffs for Prudent Transmission Investments, Electric Power Market Performance Conference, Denver, CO.
109. June 2001, Decision Tools for Electric Transmission Service and Pricing: A Dynamic Programming Approach, EPRI/DOD Interactive Complex Networks Workshop, Washington, D.C.
108. June 2001, Change of Paradigms in Complexity and Interdependencies of Infrastructures, OSTP/NSF Meeting, White House, Washington, D.C.

107. April 2001, Electric Power Networks and Data Networks: How Common are the Underlying Problems? EPRI/DOD Meeting, George Washington University, Washington, D.C.
106. December 2000, "The Role of Information Technology in the Electric Power Industry", PowerCon2000, Perth, Australia (Plenary talk).
105. November 2000, A Strategic Systems for Electric Energy Technologies, NSF/DOE/EPRI Sponsored Workshop on Future Research Directions for Complex Interactive Electric Networks, Washington, D.C.
104. September 2000, "Incentives for Transmission Investments: A Proposal for a New England Regional Transmission Organization", Orlando, FL, IEEE Distinguished Lecture.
103. August 2000, "Integrating Electricity Markets for Wide Area Open Access", Workshop on Markets for Electricity, Economics and Technology (MEET): A Flow-based Paradigms for Systems Operation and Market Coordination", Stanford University, Palo Alto, CA.
101. March 2000, The Role of IT in Competitive Electric Power Systems, MIT, Mechanical Engineering Department Series
100. December 1999, "On Underlying Principles for Designing Standards in the New Electric Power Industry", NIST (National Institute of Standards Technology) Sponsored Workshop on "Challenges for Measurements and Standards in a Deregulated Electric Power Industry", Arlington, VA.
99. October 1999, "Strategic Directions in R&D to meet Future Demand; Setting R&D Priorities", Ontario Electricity Technology Forum: The New Reality, Toronto, Canada.
98. July 1999, "On-line Voltage Regulation in New England", IEEE Panel, Edmonton, Alberta, Canada.
97. June 1999, "Electric Power Restructuring in the United States", IEEE Distinguished Lecture, French Chapter, Paris, France.
96. April 1999, "Research Challenges in Electric Power Systems", NSF Workshop on Innovations in Power Engineering Education and Research, National Science Foundation, Washington, DC.
95. March 1999, "Some Obstacles to Moving Forward with Successful Deregulation of the Electric Power Industry", Federal Energy Regulatory Commission, Washington, D.C.
94. July 1999, "Measures for Comparing Performance of Regulated and Deregulated Electric Power Industries", Mini Symposium "Modeling and Computational Challenges in Deregulated Electricity Markets", 4th Conference on Industrial and Applied Mathematics, Edinburgh, Scotland.
93. February 1999, "On the objectives of transmission pricing", IEEE Panel, Winter Power Meeting, New York.
92. January 1999, "Power Markets: Lessons for Internet", Internet Telephony Consortium Workshop, MIT, Cambridge.
91. January 1999, "Critical Factors for Forming a Transmission Company", Alliance Transmission Owners, Washington DC, American Electric Power Headquarters.
90. November 1998, "Electric Power Industry Restructuring: Engineering and Economics", IEEE Distinguished Lecture, Orlando IEEE Chapter.
89. October 1998, "Measuring Power System Performance in the New Industry", PostISO Implementation Conference, Sacramento, California.
88. May 1998, "Transmission Constraints and Market Power," Stanford Energy Modeling Forum, Washington DC.
87. April 1998, "Control Markets for Deregulated Electric Power Industry," Federal Energy Regulatory Commission, Washington, DC.

86. October 1997, "Transmission Pricing in New England," Stanford Energy Modeling Forum, Stanford, CA.
85. July 1997, "Vital Issues Panel," Sandia National Laboratory, Washington, DC.
84. June 1997, "Public Comments to the Task Force on Electric System Reliability," Secretary of Energy Advisory Board, Washington, DC.
83. June 1997, "Long-Term Investment Issues," International Business Communications, Washington, DC.
82. April 1997, "Transmission Provision at Times of Scarcity: An ISO Cannot Do it All," Center for Energy and Environmental Policy Research, Cambridge, MA.
81. April 1997, "The Impact of Transmission Constraints on the Electricity Market," IEEE Mid-Hudson Section, Poughkeepsie, NY.
80. March 1997, "Power Systems Under Competition," University of Connecticut, Storrs, CT.
79. December 1996, "Hierarchical Control Structure and Voltage Control in FACTS Controlled Electric Power Systems," The Korean Electric Power Research Institute, Taejong, South Korea.
78. November 1996, "A Unified Approach to Real-Time Operations, Planning and Accounting Under Open Access," US Department of Energy, Washington, DC.
77. October 1996, "A Framework for Operations in Competitive Electric Power Industry," Cornell University, Ithaca, NY.
76. September 1996, "Getting it Right the First Time: Value of Transmission and High Technology," Transmission Pricing Conference, Denver, CO.
75. August 1996, "Peak Load Pricing for Transmission," Edison Electric Institute, Washington, DC.
74. August 1996, "Transmission Capacity in Electric Power Networks," 12th Power Systems Computation Conference, Dresden, Germany.
73. July 1996, "Flexible Planning for Power Transmission in a Competitive Industry," MIT, Cambridge, MA.
72. June 1996, "Deregulation in the Northeast of the United States," Energy Modeling Forum Stanford University Working Group 15, Washington, DC.
71. February 1996, "A Possible Framework for Operations Planning in a Changing Industry: Coordination vs. Competition," American Electric Power Co., Columbus, OH.
70. January 1996, "Engineering vs. Market-based Pricing for the Interconnected Operating Services," Electric Utility Planning meeting, Cambridge, MA.
69. January 1996, "Open Problems in Using Flexible AC Transmission System (FACTS) Technologies" Electricite de France, Paris, France.
68. January 1996, "A New Framework for Operations Planning under Open Access," Electricite de France, Paris, France.
67. October 1995, "New Models for Representing Technical and Economic Processes of Energy Management Under Competition," INFORMS'95, New Orleans, LA.
66. October 1995, "A Framework for Operations in Competitive Open Access Environment," MIT, Cambridge, MA.
65. October 1995, "A Unified Approach to Real-Time Controls and Accounting for Effective Energy Management under Competition," MIT, Cambridge, MA.
64. September 1995, "Role of an ISO in Supporting a Competitive Power Market Based on Bilateral Scheduling" (with Frank Graves), Workshop on Restructuring Electric Transmission, Beaver Creek, CO.
63. September 1995, "R&D Perspective on Pricing Methodologies," ABB Power T D Company, Inc., Transmission Technology Institute, Raleigh, NC.

62. September 1995, "Trends in Activity-Based Costing," MIT Workshop on Corporate Planning and Technology Management for a Competitive Electric Industry Environment, Cambridge, MA.
61. July 1995, "AGC in Competitive Environment," Workshop on Resource Scheduling and Generation Control, Hilton Head, NC.
60. July 1995, "A Unified Approach to Real-Time Controls, Accounting and Supporting Policies for Effective Energy Management under Competition," IEEE Task Force on Controls in the 21st Century," Portland, OR.
59. June 1995, "Power Pooling for Transmission and Ancillary Services: Balancing Efficiency and Comparability," Beaver Creek, CO.
58. February 1995, "A Unified Approach to Dynamic Pricing Under Open Access," University of California, Berkeley, CA.
57. December 1994, "Alternate Operational Strategies for Electric Utility Restructuring," Connecticut Energy Advisory Board, Hartford, CT.
56. December 1994, "Systems Engineering Design," University of Maryland, College Park, MD.
55. December 1994, "Fundamental Problems and Opportunities in Operating Transmission Grid of the Future," University of Maryland Institute for Systems Research, College Park, MD.
54. November 1994, "A Unified Approach to Real-Time Controls, Accounting and Supporting Policies for Effective Energy Management under Competition," New York Power Pool, Albany, NY.
53. October 1994, "A Brief Survey of Present System-Wide Functions and Their Role in the Distributed Energy Market-- Limits to Distribution," MIT/EUP Workshop on Transmission Distribution Operational Strategies for a Restructured Electric Industry, Cambridge, MA.
52. October 1994, "Optimal Strategies for Changing Power Industry," MIT/EUP Workshop on Transmission Distribution Operational Strategies for a Restructured Electric Industry, Cambridge, MA.
51. January 1993, "Planning and Operating Problems in the Newly Evolving Environment of the Electric Power Systems," MIT Planning Workshop, Cambridge, MA.
50. November 1992, "The Impact of Advanced Technologies on Real Time Control of Power Systems," US Department of Energy Workshop, Denver, CO.
49. October 1992, "The Future of Energy Transmission in the US Electric Power: Switching to Semiconductors," MIT EECS Colloquium, Cambridge, MA.
48. November 1991, "Power Systems Monitoring and Control Research at MIT," MIT Workshop III, Cambridge, MA.
47. June 1991, "Voltage Dynamics and Control," Seoul National University, Department of Electrical Engineering, Seoul, Korea.
46. June 1991, "MIT Method for Steady State Voltage Monitoring and Corrective Actions," Taiwan Power Co., Taiwan; also Korean Electric Power Co., Seoul, Korea, June 1991.
45. June 1991, "MIT Research in the Area of Power Systems Monitoring and Controls," Kansai Electric Power Co., Osaka, Japan.
44. June 1991, "Voltage Problems and Their Controls," Tokyo Electric Power Co., Tokyo, Japan.
43. December 1990, "Global Research Agenda for Electric Power Systems at MIT," MIT Planning Workshop, Cambridge, MA.
42. November 1990, "Voltage Monitoring and Control of Electric Power Systems," MIT Workshop II on Power Systems, Cambridge, MA.

41. April 1990, "Voltage Problem as a New Operating Mode in Electric Power Systems," North Carolina State University, Department of Electrical and Computer Engineering, Raleigh, NC.
40. March 1990, "Needs for Future Research in Voltage Dynamics," American Electric Power Co., Columbus, OH.
39. February 1990, "An Overview of the State-of-the-Art in Voltage Dynamics," North American Reliability Council, Atlanta, GA.
38. January 1990, "Potential Scenarios for Supercomputer Applications in Operating Electric Power Systems," Empire State Electric Energy Research Co., Albany, NY.
37. December 1989, "New Controls for Electric Power Systems," General Electric Industry and Utility Sales, Schenectady, NY.
36. December 1989, "Advanced Controls in Electric Power Systems," New York Power Pool, Albany, NY.
35. October 1989, "Voltage Problems: The New Operating Mode in Power Systems," MIT Workshop on Research Needs in Electric Power Systems, Cambridge, MA.
34. October 1989, "Research Needs in Power Systems Dynamics and Control: Academic Perspective," MIT Workshop on Research Needs in Electric Power Systems, Cambridge, MA.
33. September 1989, "New Approaches to Voltage/Reactive Power Control in Electric Power Systems," University of Tennessee, Knoxville, TN.
32. September 1989, "Operational Issues in Power Systems in 2000 and Beyond," NSF Workshop, Atlanta, GA.
31. April 1989, "Review of the Development on Voltage Monitoring and Control," New England Electric System, Westboro, MA.
30. April 1989, "Monitoring and Control in Electric Power Systems," Water and Electricity Department, Abu Dhabi, United Arab Emirates.
29. January 1989, "Were There Any Hidden Energy Reserves in Massachusetts Last Summer?" MIT, Cambridge, MA.
28. November 1988, "Review of the Available Monitoring and Control Tools for Voltage Problems," New England Electric System, Westboro, MA.
27. November 1988, "Electric Power Systems Control and Operation: Present Practice and Future Directions," MIT, Cambridge, MA.
26. September 1988, "New Algorithms for Voltage Monitoring and Control," Power Technologies, Inc., Schenectady, NY.
25. June 1988, "Pilot Point Based Voltage Control-Comparison of the Current Practice on the French System and the EPRI Supported Research in the U.S. for Automating Secondary Voltage Control," Electricite de France, Paris, France. %
24. June 1988, "Coordinated Voltage Control on Large Interconnected Systems," Vattenfall, Stockholm, Sweden.
23. May 1988, "Open Research Questions in Voltage Control Design," Grainger Lecture Series, Urbana, IL.
22. April 1988, "Numerical Algorithms for Simulating Very Large Dynamical Systems," Rensselaer Polytechnic Institute, Troy, NY.
21. February 1988, "Reactive Power: Basics, Problems and Solutions," IEEE Power Engineering Society, New York, NY.
20. January 1988, "Open Control Theoretical Issues in the Large Scale Electric Power Systems," Rensselaer Polytechnic Institute, Troy, NY.

19. Fall 1987, "Numerical Algorithms for Large Scale Electric Power Systems," MIT, Cambridge, MA.
18. July 1987, "Reactive Power: Basics, Problems and Solutions," IEEE Power Engineering Society, San Francisco, CA.
17. Summer 1987, "Reactive Power/Voltage Modeling and Control," University of California, Berkeley, CA.
16. May 1987, "Where Does the Power Industry Go From Here?" Power Industry Computation Conference, Montreal, Canada.
15. Spring 1987, "Reactive Power/Voltage Modeling and Control," MIT, Cambridge, MA.
14. Fall 1986, "Real Time Reactive Power Control," Pennsylvania-Jersey-Maryland Interconnection, Philadelphia, PA.
13. Fall 1986, "Automatic Voltage Control and Its Parallelism with the Automatic Generation Control," Leeds and Northrup Co., North Wales, PA.
12. Spring 1986, "Feedback Linearizing Control for Switched Reluctance Motors," General Electric, Corporate R&D, Schenectady, NY.
11. Summer 1984, "Data Management for Reactive Power/Voltage Control," Central Illinois Light Co., Peoria, IL.
10. Summer 1984, "Floquet Theory Based Control of Switched Reluctance Motors," General Electric, Corporate R&D, Schenectady, NY.
9. May 1984, "Existence and Uniqueness of a Solution to the Reactive Power Problem," McGill University, Montreal, Canada.
8. April 1984, "Conditions for the Localized Response in Decoupled Voltage-Var Networks," University of Illinois, Urbana, IL.
7. Spring 1983, "S-E Graph Based Adjoint Networks for Power Systems Studies," McMaster University, Hamilton, Canada.
6. October 1982, "Theoretical Foundations of the Se-E Graph and Its Relations to the I-E Graph," Washington University, St. Louis, MO.
5. April 1982, "Recursive Formulae for Load Flow Computations," Cornell University, Ithaca, NY.
4. March 1982, "Potential of Using the S-E Graph for Power Systems Monitoring," Pennsylvania Power and Light Co., Allentown, PA.
3. January 1982, "Theorems for Steady State Electric Power Networks," Cornell University, Ithaca, NY.
2. January 1982, "A New Approach to Load Flow Studies," Lehigh University, Bethlehem, PA.
1. May 1981, "Complex Power-Complex Voltage for Electric Power Networks," Drexel University, Philadelphia, PA.

STUDENT PROJECTS

Ph.D. Students

22. Chalermmon Lertpattarapong, "Long-term Transmission Provision in a Deregulated Power Industry", 2004 (ESD/TMP).
21. Wang, Hungjen, "Protocols for Dynamic Network Flow Control under Distributed Decision Making", 2004 (ESD/TMP).
20. Botterud, Audun, "Modeling and Analysis of Investment Dynamics in the Changing Electric Power Industry", NTNU Trodheim (co-advising), 2004.
19. Black, Jason, "Technical and Regulatory Methods for Inducing Price Responsiveness in Deregulated Electricity Markets", June 2003 (ESD/TMP).

18. Visudhiphan, Poonsaeng, "A Multi Agent-Based Approach to Modeling Electricity Markets", September 2002, EECS.
17. Arce, Rafael Jose, "Transmission Reliability Assessment in a Competitive Electric Energy Industry", Doctor en Ingenieria Electrica, Universidad Nacional de San Juan, Argentina, February 2001 (coadvisor with F.F. Garces)
16. Skantze, P., "A Fundamental Approach to Valuation, Hedging and Speculation in Deregulated Electricity Markets", June 2001, EECS.
15. Yoon, Y. T., "Electric Power Network Economics: Designing Principles for a For-Profit Independent Transmission Company and Underlying Architectures for Reliability", June 2001, EECS.
14. Millis, K., "Distributed Measures of Solution Existence and Its Optimality in Stationary Electric Power Systems: Scattering Approach" August 1999.
13. Yu, C.N., "Hierarchical Congestion Management for a Deregulated Power Industry," September 1999 (Mechanical Engineering Department).
12. Allen, E. H., "Stochastic Unit Commitment for a Deregulated Electric Power Industry," June 1998.
11. Cardell, J., "Integrating Small Scale Distributed Generation into a Deregulated Market: Control Strategies and Price Feedback," September 1997 (so-supervised with R. Tabors, best thesis award) (TMP).
10. Chapman, J., "Power System Control for Large-Signal Stability: Security, Robustness and Transient Energy," June 1996.
9. Zobian, A., "A Framework for Cost-based Pricing of Transmission and Ancillary Services in Competitive Electric Power Markets," June 1996.
8. Eidson, B.D., "Estimation and Hierarchical Control of Market-driven Electric Power Systems," September 1995.
7. Liu, X.S., "Structural Modeling And Hierarchical Control of Large-Scale Electric Power Systems," June 1994 (Mechanical Engineering Department).
6. Amy, J., "Composite System Stability Methods Applied to Advanced Shipboard Electric Power Systems," June 1992 (Ocean Engineering Department, co-supervised with J. Kirtley).
5. Doerry, N.H., "Advanced Numerical Methods for Simulating Nonlinear Multirate Lumped Parameter Models," June 1991 (Ocean Engineering Department, co-supervised with J. Kirtley).
4. Mak, F.K., "Analysis and Control of Voltage Dynamics in Electric Power Systems," September 1989 (University of Illinois).
3. Crow, M.L., "Waveform Relaxation Methods for the Simulations of Systems of Differential/Algebraic Equations with Applications to Electric Power Systems," September 1989 (University of Illinois).
2. Taylor, D., "Control of Nonlinear Systems with Application to Electrical Machines and Robotic Manipulators," December 1987 (University of Illinois).
1. Christensen, J., "Secondary Voltage Control Using Partial Information Structures," December 1987 (University of Illinois).

Doctoral Theses, Reader

6. Xie, Zhijun, "Design of China Electric Power Wholesale Market" (Boston University), December 1999.
5. Koncar, I., "Generation Dispatch with Independent Transmission Projects," (McGill University), 1998.

4. Chakravarthy, S., "Chaotic Oscillations in Electrical Power Systems," July 1995 (University of Technology Perth, Western Australia).
3. Sanders, S., "Nonlinear Control of Switching Power Converters," February 1989.
2. Behera, A., "New Techniques for Real Time Stability Studies in the Large Scale Power Systems," February 1988 (University of Illinois).
1. Brown, R., "Optimal Speed Control of Stepper Motors," December 1986 (University of Illinois).

Master's

43. Watz, Jill, "The Role of Government in Facilitating Customer Choice in the Electric Power Industry Under Restructuring", TPP (ESD), September 2002.
42. Gatterbauer, Wolfgang Karl, "Interdependences of Electricity Market Characteristics and Bidding Strategies of Power Producers," June, 2002, TPP (ESD) and EECS.
41. Sivakumar, Ashok, "Stochastic Optimization of Electricity Transmission: Dynamic Programming Algorithms Under Uncertainties", EECS, June 2002.
40. Wagner, Michael, "Hedging Optimization Algorithms for Deregulated Electricity Markets", EECS June 2001.
39. Gozum, Ozge Nadia, "Decision Tools for Transmission Service and Pricing: A Dynamic Programming Approach", EECS, June 2001 (Gullemin Prize Thesis Award for best EECS thesis).
38. Collison, Keneth, TPP (ESD), "A Practical Approach to Optimal Pricing and Implementation of Inter-regional Transactions in the Deregulated US Electricity Market", TPP (ESD), June 2001.
37. Tsuchuda, Bruce, "Design of an Information Entity-The InfoCo-for the Electric Power Industry Under Restructuring", TPP (ESD) and EECS, June 2001.
36. Raikar, Santosh, "Interruptible Physical Transmission Contracts for Deregulated Electricity Market" TPP (ESD) June 2001.
35. Chalermkraivuth, Charles, "Distributed Generation: The Strategies and Decision Criteria of Market Participants", TPP (ESD), February 2001.
34. Prada, J., "Valuation of Operating Reserve in Power Systems", TPP (EECS), June 1999.
33. Leotard, J.P., "Transmission Pricing and Incentives for Investments under Uncertainty in the Deregulated Industry", TPP (Civil Engineering), February 1999.
32. Visudhiphan, P., "A Dynamic Model of the Electricity Generation Market," September 1998.
31. Alumran, A., "Available Transfer Capability for Electric Power Markets: A Critical Appraisal," June 1998.
30. Skantze, P., "Closed-loop Market Dynamics in a Deregulated Electric Power Industry," February 1998.
29. Younes, Z. "Deregulation of the Electric Power Industry: The Impact of Transmission on Market Imperfections," February 1998 (Civil Engineering Department).
28. Macan, E., "Peak-Load Pricing for the IEEE Reliability Test System," June 1997.
27. Castillo, J., "How to Make Electric Power Markets Work: The Case of Central America," June 1997.
26. Lerner, P., "On the Value of Transmission Systems under Open Access: Incentives for Investment," June 1997.
25. Yoon, Y.T., "Enhancements of Electric Power Systems Operation Using FACTS Devices," February 1997.
24. Kuan, J., "Optimal Power Flow with Price-Elastic Demand," September 1996.

23. Bambenek, J., "Long term economically efficient transmission systems in a deregulated electric power industry," June 1996 (Nuclear Engineering Department, co-supervised with R. Lester).
22. Lecinq, B., "Peak-load Pricing for Transmission in a Deregulated Electric Utility Industry," June 1996 (Civil Engineering Department).
21. Cordero, R., "Estimation of Transmission Losses in a Changing Electric Power Industry," June 1996.
20. Yu, C.N., "Real Power and Frequency Control of Large Electric Power Systems under Open Access," June 1996 (Mechanical Engineering Department).
19. Zobian, A., "A Framework for Pricing Transmission and Ancillary Services in Competitive Electric Power Markets," August 1995.
18. LaWhite, N., "Vector Calculus of Periodic Non-Sinusoidal Signals for Decomposition of Power Components in Single and Multiphase Circuits," June 1995.
17. Allen, E.H., "Effects of Torsional Dynamics on Nonlinear Generator Control," February 1995.
16. Chapman, J.W., "Feedback Linearizing Generator Excitation Control for Enhanced Power System Stability," September 1993.
15. Lasota, C., "Reactivity Estimation and Validation for the Control of Reactor Neutronic Power," June 1993 (Nuclear Engineering Department, co-supervised with J. Bernard)
14. Lacalle-Melero, J. R., "Short Term Stability Analysis of Electrical Energy Markets Under the Real Time Pricing," February 1993.
13. Jaber, Z. C., "Computer Applications in Power Systems," September 1992 (American University of Beirut, Lebanon, co-supervised with M. Yehia).
12. Nishimura, F., "Benefit Optimization of Electric Energy Exchange in a Deregulated Multi-Utility Environment," June 1992.
11. Tolikas, M., "The Application of Homotopy Methods in the Analysis of Electric Power Systems," June 1992.
10. Lim, K.K., "Coordination and Control Logic Design for Slow Voltage Control Devices in Electric Power Systems," September 1991 (Mechanical Engineering Department).
9. Millis, K., "Modelling and Stability of Parallel Converters," January 1991.
8. Kiryaman, T., "Nonlinear Analysis and Control of Switched-Mode DC to DC Converters," February 1991 (Nuclear Engineering Department).
7. Stobart, W.J., "Using Reactive Power Reserves for Hierarchical Control of Electric Power Systems," June 1990 (Mechanical Engineering Department).
6. Rayes, A., "Numerical Issues in Studying a Linear Dynamical Model of a Realistic Power Electronic Circuit," May 1988 (University of Illinois).
5. Shanahan, P., "Approximate Methods for Voltage Monitoring and Control in Electric Power Systems," December 1987 (University of Illinois).
4. Crow, M.L., "The Application of Waveform Relaxation Methods for Large Electric Power System Dynamic Response Simulation," September 1986 (University of Illinois).
3. Mak, F.K. "Instantaneous Torque Control of Switched Reluctance Motors Using Floquet Theory," September 1986 (University of Illinois).
2. Dobraca, F., "A Novel Approach to the System-Wide Protection of Large Power Systems," September 1986 (University of Illinois).
1. Schulz, D., "Error in the Q-V Decoupled Load Flow," September 1984 (Cornell University).

Undergraduate

3. Edoh, H., "Frequency and Power Generation Control in a Decentralized Electric Utility System," February 1995.
2. Lee, J.H., "Transmission Line Modeling for Large-Scale Electric Power Systems," February 1994.
1. Manghtal, S., "An Investigation of Three Different Ways of Modeling Loads in Load Flow Analysis," June 1990.