

## Curriculum Vitae

Aleksandar Dimitrovski, PhD

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### Current position

Associate Professor, ECE Department, University of Central Florida – Orlando

### Experience

- '13-'16 Chief Technical Scientist, Power & Energy Systems, Oak Ridge National Laboratory and Joint Faculty at the University of Tennessee – Knoxville
- '11-'13 Research group leader, Power & Energy Systems, ORNL, Oak Ridge, TN
- '10-'11 Senior R&D staff, ORNL
- '06-'09 Researcher and instructor, Schweitzer Engineering Laboratories, Pullman, WA
- '03-'06 Visiting professor, Washington State University, Pullman, WA
- '01-'03 Postdoctoral researcher, WSU
- '00-'01 Docent (tenured assistant professor), University Ss. Cyril & Methodius, Skopje, Macedonia
- '89-'00 Research and teaching associate, University Ss. Cyril & Methodius
- '88-'89 Analyst, EMO Company – Institute of Energetics, Skopje, Macedonia
- '87-'88 Product engineer, Rade Končar Company, Skopje, Macedonia

### Education

- Ph.D. in Power Engineering, University Ss. Cyril & Methodius, Skopje, Macedonia, '97
- M.Sc. in Applied Computer Science, University of Zagreb, Croatia, '92
- B.Sc. in Electrical Engineering, University Ss. Cyril & Methodius, Skopje, Macedonia, '87

### Funded projects at UCF since '17

- 6 projects funded by DOE: total budget \$5,388,091; share as PI \$606,105; share as Co-PI \$700,357
- 1 project funded by private company: total budget \$50,000; share as Co-PI \$8,300

### Prior notable awards and grants

- Fulbright US Scholar, '16, 4 months at University of Pristina, Kosovo
- R&D 100 Award, '14, CVSR project
- DoE ARPA-e GENI, '12-'16, PI, total budget \$5.5M, at ORNL
- NSF Grant, '02-'04, Postdoc, total budget \$505k, at WSU
- NSF International Fellowship, '01-'02, 12 months at WSU
- IAEA Scholarships, '99, 2 months at ICTP, Italy; '96, 3 months at ANL and 2 weeks at LEI, Lithuania
- European Union Scholarship (Tempus Phare), '97, 3 months at INESC, Portugal

### Patents

- A. Dimitrovski, “*Power Flow Control Using Distributed Saturable Reactors*,” U.S. PTO Patent Application # PCT/US12/26111
- F. Wang, B. Ozpineci, S. Zheng, S. Campbell, M. Chinthavali, A. Dimitrovski, P. Irminger, O. Onar, L. Seiber, L. Tolbert, C. White, D. Costinett, Z. Li, J. Wang, F. Yang, “*DC Current Controller for Continuously Variable Series Reactor*,” U.S. PTO Patent Application #15/261,106
- S. Fernandez, M. Shankar, J. Nutaro, Y. Liu, A. Dimitrovski, O. Omitaomu, C. Groer, K. Spafford, R. Vatsavai, “*Real-Time Simulation of Power Grid Disruption*,” U.S. PTO Provisional Patent Application #61/589,419

### Research

Recently focused mostly on a novel hybrid magnetic-electronic power flow control technology, parallel power system dynamic simulation methods, and cyber-physical security in power systems. Previously focused on uncertainties in power systems: system reliability, probabilistic and fuzzy power flow, optimal power flow, engineering economics under uncertainty, network expansion planning.

**Funded Projects at UCF**

1. PI, "Networked Community-based and Community-operated Microgrid in Adjuntas PR," '21-'24, DOE EERE, \$336,105
2. Co-PI, "Secure and Resilient Operations Using Open-Source Distributed Systems Platform," '21-'24, DOE EERE, \$480,000
3. PI, "Continuously Variable Series Reactor," '19-'21, DOE OE, \$155,000
4. PI, "Parallel-in-time Co-simulation of Transmission and Distribution Systems," '19-'20, DOE OE, \$65,000
5. Co-PI, "Smart City P3 Proposal and Demonstration Center Support," '18-'19, private company, \$8,300
6. Co-PI, "Scalable/Secure Cooperative Algorithms and Framework for Extremely-high Penetration Solar Integration," '17-'20, DOE EERE, \$220,357
7. PI, "Dynamically Adaptive Parareal in Time Algorithm for Fast Power System Transient Simulations," '17-'18, DOE OE, \$50,000

**Publications** (authors listed in the order of contribution, \*) supervised student/researcher)Book chapters

1. A. Dimitrovski, K. Tomsovic, A. Vaccaro, "Reliable algorithms for power system analysis in the presence of data uncertainties", *Innovation in Power Systems Reliability*, eds. G. J. Anders and A. Vaccaro, Springer-Verlag, London 2011.
2. A. Dimitrovski, M. Matos, "Fuzzy Present Worth Analysis with Correlated and Uncorrelated Cash Flows", *Fuzzy Engineering Economics with Application*, ed. C. Kahraman, Springer Berlin/Heidelberg 2008.
3. M. Matos, A. Dimitrovski, "Case Studies Using Fuzzy Equivalent Annual Worth Analysis", *Fuzzy Engineering Economics with Application*, ed. C. Kahraman, Springer Berlin/Heidelberg 2008.

Journals

1. S. Mahdavi\*, H. Panamtaash\*, A. Dimitrovski, Q. Zhou, "*Predictive Coordinated and Cooperative Voltage Control for Systems with High Penetration of PV*," IEEE Transactions on Industry Applications, Vol. 57, No. 3, 2021, pp. 2212-2222
2. B. Park\*, K. Sun, A. Dimitrovski, Y. Liu, S. Simunovic, "*Examination of Semi-Analytical Solution Methods in the Coarse Operator of Parareal Algorithm for Power System Simulation*," IEEE Transactions on Power Systems, DOI: [10.1109/TPWRS.2021.3069136](https://doi.org/10.1109/TPWRS.2021.3069136)
3. S. Pokharel\*, A. Dimitrovski, "*Ferromagnetic Core Modeling and Design Optimization*," Advances in Science, Technology and Engineering Systems Journal, Vol. 6, No. 1, 2021, pp.810-818
4. S. Pokharel\*, A. Dimitrovski, "*Analytical Modeling of a Gapless Ferromagnetic Core Reactor*," IEEE Transactions on Magnetics, Vol. 56, No. 2, February 2020, paper 8400110
5. X Zhang\*, C Xu, D Shi, Z Wang, Q Zhang, G Liu, K Tomsovic, A Dimitrovski, "*The Allocation of A Variable Series Reactor Considering AC Constraints and Contingencies*", CSEE Journal of Power and Energy Systems, Vol. PP, No. 99, 2019, pp. 1-10
6. X. Zhang\*, K. Tomsovic, A. Dimitrovski, "*Optimal Allocation of Series FACTS Devices in Large Scale Systems*", IET Generation, Transmission & Distribution, Vol. 12, No. 8, 2018, pp. 1889-1896
7. X. Zhang\*, K. Tomsovic, A. Dimitrovski, "*Security Constrained Multi-Stage Transmission Expansion Planning Considering a Continuously Variable Series Reactor*", IEEE Transactions on Power Systems, Vol. 32, No. 6, 2017, pp. 4442-4450

8. G. Gurrala\*, D. Dinesha, A. Dimitrovski, S. Pannala, S. Simunovic, M. Starke, "Large Multi-Machine Power System Simulations Using Multi-Stage Adomian Decomposition", IEEE Transactions on Power Systems, Vol. 32, No. 5, 2017, pp. 3594-3606
9. A. Melhorn\*, K. McKenna, A. Keane, D. Flynn, A. Dimitrovski, "Autonomous plug and play electric vehicle charging scenarios including reactive power provision: a probabilistic load flow analysis", IET Generations, Transmission & Distribution, Vol. 11, No. 3, 2017, pp. 768-775
10. J. Qi\*, J. Wang, H. Liu, A. Dimitrovski, "Nonlinear Model Reduction in Power Systems by Balancing of Empirical Controllability and Observability Covariances", IEEE Transactions on Power Systems, Vol. 32, No. 1, 2017, pp. 114-126
11. M. Young\*, A. Dimitrovski, Z. Li, Y. Liu, "Gyrator-Capacitor Approach to Modeling a Continuously Variable Series Reactor", IEEE Transactions on Power Delivery, Vol. 31, No. 3, 2016, pp. 1223-1232
12. G. Gurrala\*, A. Dimitrovski, S. Pannala, S. Simunovic, M. Starke, "Parareal in Time for Fast Power System Dynamic Simulations", IEEE Transactions on Power Systems, Vol. 31, No. 3, 2016, pp. 1820-1830
13. A. Melhorn, A. Dimitrovski, "Three Phase Probabilistic Load Flow in Radial and Meshed Distribution Networks", IET Generations, Transmission & Distribution, Vol. 9, No. 16, 2015, pp. 2743-2750
14. Y. Fan, Z. Zhang, M. Trinkle, A. Dimitrovski, J. Bin Son, H. Li, "A Cross-Layer Defense Mechanism Against GPS Spoofing Attacks on PMUs in Smart Grids," IEEE Transactions on Smart Grid, Vol. 6, No. 6, 2015, pp. 2659-2668
15. J. Guo, Y. Zhang, M. Young, M. Till, A. Dimitrovski, P. Williging, Y. Liu, "Design and Implementation of a Real-Time Off-Grid Operation Detection Tool from a Wide-Area Measurements Perspective", IEEE Transactions on Smart Grid, Vol. 6, No. 4, 2015, pp. 2080-2087.
16. A. Dimitrovski, Z. Li, B. Ozpineci, "Magnetic Amplifier-based Power Flow Controller", IEEE Transactions on Power Delivery, Vol. 30, No. 4, 2015, pp. 1708-1714.
17. H. Li, A. Dimitrovski, J.B. Song, Z. Han, L. Qian, "Communication Infrastructure Design in Cyber Physical Systems with Applications in Smart Grids: A Hybrid System Framework," IEEE Communications Surveys and Tutorials: Special Issue on Energy and Smart Grid, Vol. 16, No. 3, 2014, pp. 1689-1708.
18. H. Li, Z. Han, A. Dimitrovski, Z. Zhang, "Data Traffic Scheduling for Cyber Physical Systems with Applications in Voltage Control of Distributed Generations: A Hybrid System Framework," IEEE Systems Journal, Vol. 8, No. 2, June 2014, pp. 542-552.
19. Z. Zhang, S. Gong, A. Dimitrovski, H. Li, "Time Synchronization Attack in Smart Grid: Impact and Analysis," IEEE Transactions on Smart Grid, Vol. 4, No. 1, Mar. 2013, pp. 87-98.
20. A. Dimitrovski, K. Tomsovic, A. Ford, "Comprehensive Long Term Modeling of the Dynamics of Investment and Network Planning in Electric Power Systems", International Journal of Critical Infrastructure, Vol. 3, No. 1/2, 2007, pp. 235-264.
21. A. Dimitrovski, K. Tomsovic, "Slack Bus Treatment in Load Flow Solutions with Uncertain Nodal Powers", Electric Power and Energy Systems, Vol. 27, No. 9-10, Nov.-Dec. 2005, pp. 614-619.
22. A. Dimitrovski, K. Tomsovic, "Uncertainty in Load Flow Modeling - Application of the Boundary Load Flow", invited paper, Automation of Electric Power Systems, Vol. 29, No. 16, Aug. 2005, pp. 6-15.

23. A. Dimitrovski, K. Tomsovic, "Risk Assessment Using Boundary Load Flow Solutions", International Journal of Engineering Intelligent Systems, Vol. 13, No. 2, June 2005, pp. 155-161.
24. A. Dimitrovski, K. Tomsovic, "Boundary Load Flow Solutions", IEEE Transactions on Power Systems, Vol. 19, No. 1, Feb. 2004, pp. 348-355.
25. A. Dimitrovski, M. Matos, "Fuzzy Engineering Economic Analysis", IEEE Transactions on Power Systems, Vol. 15, No. 1, Feb. 2000, pp. 283-289.

#### Conferences

1. M. Hayerikhiyavi\*, A. Dimitrovski, "Comprehensive Analysis of Continuously Variable Series Reactor Using G-C Framework," presented at 2021 IEEE/PES General Meeting
2. M. Hayerikhiyavi\*, A. Dimitrovski, "A Practical Assessment of the Power Grid Inertia Constant Using PMUs," presented at NAPS 2020 Conference
3. S. Mahdavi\*, H. Panamtaash\*, A. Dimitrovski, Q. Zhou, "Comparison of Probabilistic Forecasts for Predictive Voltage Control," presented at NAPS 2020 Conference
4. B. Park\*, K. Sun, A. Dimitrovski, Y. Liu, M.A. Arif, S. Allu, S. Simunovic, "Performance and Feature Improvements in Parareal-based Power System Dynamic Simulation," IEEE 2020 POWERCON Conference
5. S. Pokharel\*, A. Dimitrovski, "Modeling of An Enhanced Three-phase Continuously Variable Reactor," 2020 IEEE/PES General Meeting
6. S. Mahdavi\*, H. Panamtaash, A. Dimitrovski, Q. Zhou, "Predictive and Cooperative Voltage Control with Probabilistic Load and Solar Generation Forecasting," PMAPS 2020 Conference
7. S. Pokharel\*, A. Dimitrovski, "Modeling of An Enhanced Three-phase Continuously Variable Reactor," 2020 IEEE/PES General Meeting
8. S. Pokharel\*, A. Dimitrovski, "Analytical Modeling of a Three-phase Magnetic Amplifier-based Continuously Variable Reactor," 2020 IEEE/PES T&D Conference
9. S. Mahdavi\*, A. Dimitrovski, "Integrated Coordination of Voltage Regulators with Distributed Cooperative Inverter Control in Systems with High Penetration of DGs," accepted for 2020 Texas Power and Energy Conference – TPEC, College Station TX, Feb. 6-7
10. S. Pokharel\*, A. Dimitrovski, "Analytical Modeling of a Ferromagnetic Core Reactor," 2019 North American Power Symposium – NAPS, Wichita KS, Oct. 13-15
11. S. Mahdavi\*, A. Dimitrovski, "Coordinated Voltage Regulator Control in Systems with High-level Penetration of Distributed Energy Resources," 2019 North American Power Symposium – NAPS, Wichita KS, Oct. 13-15
12. S. Pokharel\*, A. Dimitrovski, "A Gapless Ferromagnetic Core Reactor – Magnetic Equivalent Circuit and Inductance," IEEE/PES General Meeting 2019, Atlanta GA, Aug. 4-8
13. D. Osipov\*, N. Duan\*, S. Allu, S. Simunovic, A. Dimitrovski, K. Sun, "Distributed Parareal in Time with Adaptive Coarse Solver for Large Scale Power System Simulations", IEEE/PES General Meeting 2019, Atlanta GA, Aug. 4-8
14. N. Duan\*, S. Simunovic, A. Dimitrovski, K. Sun, "Improving the Convergence Rate of Parareal-in-Time Power System Simulation using Krylov Subspace," 2018 IEEE/PES General Meeting, Portland OR, Aug. 5-9
15. O. Ceylan\*, A. Dimitrovski, M. Starke, and K. Tomsovic, "A Novel Approach for Voltage Control in Electrical Power Distribution Systems," 2018 IEEE/PES General Meeting, Portland OR, Aug. 5-9

16. D. Osipov\*, N. Duan\*, A. Dimitrovski, S. Allu, S. Simunovic, K. Sun, “*Adaptive Model Reduction for Parareal in Time Method for Transient Stability Simulations*”, 2018 IEEE/PES General Meeting, Portland OR, Aug. 5-9
17. A. Melhorn\*, A. Dimitrovski, “*Correlation Between EVs and Other Loads in Probabilistic Load Flow for Distribution Systems*”, to be presented at 2018 PMAPS Conference, Boise ID, June 24-28
18. N. Duan\*, A. Dimitrovski, S. Simunovic, K. Sun, J. Qi, J. Wang, “*Embedding Spatial Decomposition in Parareal in Time Power System Simulation*,” 2018 IEEE ISGT, Washington DC, Feb. 19-22
19. A.C. Melhorn\*, A. Dimitrovski, A. Keane, “*Probabilistic Load Flow: a Business Park Analysis, Utilizing Real World Meter Data*,” 14<sup>th</sup> International Conference on Probabilistic Methods Applied to Power Systems – PMAPS 2016, Beijing, China, October 16-20
20. N. Duan\*, A. Dimitrovski, S. Simunovic, K. Sun, “*Applying Reduced Order Generator Models in the Coarse Solver of Parareal in Time Parallel Power System Simulation*”, 2016 IEEE ISGT Europe, Ljubljana, Slovenia, Oct. 9-12
21. G. Gurrala\*, A. Dimitrovski, S. Simunovic, S. Pannala, “*Numeric Modified Adomian Decomposition Method for Power System Simulation*”, 2016 IEEE POWRCON, Wollongong, Australia, Sep. 28 - Oct. 1
22. X. Zhang\*, K. Tomsovic, A. Dimitrovski, “*Optimal Investment on Series FACTS Device Considering Contingencies*”, 2016 North American Power Symposium – NAPS, Denver CO, Sep. 18-20
23. M. Young, A. Dimitrovski, Z. Li, “*Modeling and Simulation of Continuously Variable Series Reactor for Power System Transient Analysis*”, 2016 IEEE PES General Meeting, Boston MA, July 17-21
24. O. Ceylan, A. Dimitrovski, M. Starke, K. Tomsovic, “*Optimal Reactive Power Allocation for Photovoltaic Inverters to Limit Transformer Tap Changes*”, 2016 IEEE PES General Meeting, Boston MA, July 17-21
25. B. Xiao, K. Prabakar, M. Starke, G. Liu, K. Dowling, B. Ollis, P. Irminger, Y. Xu, A. Dimitrovski, “*Development of Hardware-in-the-loop Microgrid Testbed*”, 2015 IEEE Energy Conversion Congress and Exposition, Montreal, Canada, Sep. 20-24
26. M. Young, A. Dimitrovski, Z. Li, Y. Liu, R. Patterson, “*Continuously Variable Series Reactor: Impacts on Distance Protection using CCVTs*”, 2015 IEEE PES General Meeting, Denver CO, July 26-30
27. B. Johnson, M. Starke, A. Dimitrovski, “*Examining the Potential Impact of Plug-In Electric Vehicles on Residential Sector Power Demand*”, 2015 IEEE PES General Meeting, Denver CO, July 26-30
28. G. Gurrala, A. Dimitrovski, S. Pannala, S. Simunovic, M. Starke, K. Sun, “*Application of Adomian Decomposition for Multi-Machine Power System Simulation*”, 2015 IEEE PES General Meeting, Denver CO, July 26-30
29. G. Gurrala, A. Dimitrovski, S. Pannala, S. Simunovic, M. Starke, “*Parareal in Time for Dynamic Simulations of Power System*”, 2015 International Conference on Power Systems Transients, Cavtat, Croatia, June 15-18
30. M. Young, A. Dimitrovski, Z. Li, Y. Liu, G. Gurrala, R. Patterson, “*Magnetic Amplifier: Impacts on Power System Distance Protection*”, 2014 Western Protective Relay Conference, Spokane WA, Oct. 14-16

31. J. Guo, Y. Zhang, Y. Liu, M. Young, P. Irminger, A. Dimitrovski, P. Willging, “*Design and Implementation of Real-Time Off-Grid Detection Tool Based on FNET/GridEye*”, 2014 IEEE PES General Meeting, National Harbor MD, July 27-31
32. P. Irminger, M. Starke, A. Dimitrovski, M. Young, D.T. Rizy, J. Stovall, P. Overholt, “*A Testing Platform for Validation of Overhead Conductor Aging Models and Understanding Thermal Limits*”, 2014 IEEE PES General Meeting, National Harbor MD, July 27-31
33. A.C. Melhorn, A. Dimitrovski, “*A Method for Modeling Voltage Regulators in Probabilistic Load Flow for Radial Systems*,” 13<sup>th</sup> International Conference on Probabilistic Methods Applied to Power Systems – PMAFS 2014, Durham, UK, July 7-10
34. A. Dimitrovski, Z. Li, B. Ozpineci, “*Applications of Saturable-core Reactors (SCR) in Power Systems*”, 2014 IEEE PES Transmission & Distribution Conference & Exposition, Chicago IL, Apr. 14-17, paper 14TD0481
35. Z. Zhang, M. Trinkle, A. Dimitrovski, H. Li, “*Combating Time Synchronization Attack: A Cross Layer Defense Mechanism*,” 4<sup>th</sup> ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS 2013), Philadelphia PA, Apr. 8-11
36. H. Li, A. Dimitrovski, “*Reliability Engineering for Wireless Communications in Special Protection Schemes of Smart Grid*,” IEEE SmartGridComm 2012 Symposium – Smart Grid Communication Networks, Tainan, Taiwan, Nov. 5-8
37. S. Gong, Z. Zhang, M. Trinkle, A. Dimitrovski, H. Li, “*GPS Spoofing Based Time Stamp Attack on Real Time Wide Area Monitoring in Smart Grid*,” IEEE SmartGridComm 2012 Symposium – Smart Grid Communication Networks, Tainan, Taiwan, Nov. 5-8
38. A.C. Melhorn, A. Dimitrovski, K. Tomsovic, “*Three Phase Probabilistic Load Flow in Radial Distribution Networks*,” 12<sup>th</sup> International Conference on Probabilistic Methods Applied to Power Systems – PMAFS 2012, Istanbul, Turkey, June 10-14
39. M. Trinkle, Z. Zhang, H. Li, A. Dimitrovski, “*GPS Anti-Spoofing Techniques for Smart Grid Applications*,” ION GNSS 2012 Conference, Nashville TN, Sep. 17-21
40. A. Dimitrovski, K. Tomsovic, “*Impact of Wind Generation Uncertainty on Generating Capacity Adequacy*”, 2006 International Conference on Probabilistic Methods Applied to Power Systems – PMAFS, Stockholm, Sweden, June 11-15
41. A. Dimitrovski, K. Tomsovic, “*Market Feedback for Bounding Future Uncertainties in Power System Planning*”, invited paper for the ISAP 2005 Conference, Washington DC, Nov. 6-10
42. A. Dimitrovski, K. Tomsovic, “*Boundary Load Flow Solutions*”, 2004 IEEE PES General Meeting, Denver CO, June 6-10.
43. A. Dimitrovski, M. Gebremicael, K. Tomsovic, A. Ford, K. Vogstad, “*Comprehensive Long Term Modeling of the Dynamics of Investment and Growth in Electric Power Systems*”, 2004 EPNES Workshop, Mayaguez, Puerto Rico, July 12-14
44. A. Dimitrovski, K. Tomsovic, “*Slack bus treatment in load flow solutions with uncertain nodal powers*”, 2004 International Conference on Probabilistic Methods Applied to Power Systems – PMAFS, Ames IA, Sep 12-16
45. A. Bose, K. Casavant, A. Dimitrovski, A. Ford, K. Tomsovic, L. A. Lutzenhiser, “*Modeling the Interaction Between the Technical, Social, Economic and Environmental Components of Large Scale Electric Power Systems*”, 2003 EPNES Workshop, Orlando FL, Oct. 23-24
46. D. Arsov, A. Dimitrovski, “*Sensitivities of Optimal Power Flow Problems in Power Systems*”, 3<sup>rd</sup> Balkan Power Conference, Bucharest, Romania, June 11-13, 2003
47. D. Arsov, A. Dimitrovski, “*Control of Electrical Power Systems in the Steady State with Regulating Transformers*”, 1<sup>st</sup> Balkan Power Conference - Power system control and deregulation of electricity market, Bled, Slovenia, Sep. 24-26, 2001, pp.287-291

48. D. Rajičić, A. Dimitrovski, "A New Method for Handling PV Nodes in Backward/Forward Power Flow for Radial and Weakly Meshed Networks", 2001 IEEE Porto Power Tech Conference, Porto, Portugal, Sep. 10-13, paper PSO3-286
49. A. Dimitrovski, "Iterative Fuzzy Load Flow in Radial Distribution Networks", PMAPS 2000 Conference, Funchal, Madeira - Portugal, Sep. 25-28
50. A. Dimitrovski, "Probabilistic Load Flow in Weakly Meshed Distribution Networks", PMAPS '97 Conference, Vancouver, Canada, Sep. 21-25, 1997, pp. 521-527
51. A. Dimitrovski, R. Ačkovski, "Probabilistic Load Flow in Distribution Networks", paper PE-525-PWRD-0-12-1997, IEEE PES Winter Meeting, New York NY, 1997
52. A. Dimitrovski, R. Ačkovski, "Interruption Costs and Influence From the Customer Damage Function", V-th International Conference Tesla III Millenium, Belgrade, Yugoslavia, Oct. 15-18, 1996, pp. III201-III208
53. A. Dimitrovski, R. Ačkovski, "Probabilistic Load Flow in Power Distribution Planning", V-th International Conference Tesla III Millenium, Belgrade, Yugoslavia, Oct. 15-18, 1996, pp. III193-III200
54. A. Dimitrovski, R. Ačkovski, "Probabilistic Load Flow in Radial Distribution Networks", 1996 IEEE/PES T&D Conference, Los Angeles CA, Sep. 15-20, pp. 102-107
55. A. Dimitrovski, R. Ačkovski, "Monte Carlo Simulation in Distribution Network Analysis", IEEE/KTH Stockholm Power Tech Conference, Stockholm, Sweden, June 18-22, 1995, pp. 783-788
56. A. Dimitrovski, R. Ačkovski, "Distribution Network Reliability Evaluation Using Monte Carlo Technique", IV-th International Nikola Tesla Symposium, SANU, Belgrade, Yugoslavia, Sep. 23-25, 1991.

#### Journals and conferences - non English

1. D. Arsov, A. Dimitrovski, "Sensitivity Matrices of the Problem of Optimal Power Flows and Voltages in Power Systems", submitted to The Fourth Conference of the CIGRE Macedonian Committee. (in Macedonian)
2. G. Čogelja, A. Dimitrovski, "Transient Stability Analysis of the Macedonian Power System for Some Characteristic Cases", The Third Conference of the CIGRE Macedonian Committee, Struga, October 3-5, 2001, paper R39-07. (in Macedonian)
3. R. Ačkovski, D. Rajičić, A. Dimitrovski, "Contribution of the New Interconnection Lines 400 kV with Greece and Bulgaria to Stability Improvement of the Macedonian Power System", The Third Conference of the CIGRE Macedonian Committee, Struga, October 3-5, 2001, paper R38-05. (in Macedonian)
4. R. Taleski, R. Ačkovski, A. Dimitrovski, "Some Aspects of the Development of the High Voltage Network of the Republic of Macedonia", The Third Conference of the CIGRE Macedonian Committee, Struga, October 3-5, 2001, paper R38-04. (in Macedonian)
5. D. Arsov, A. Dimitrovski, "Representation of Regulating Transformers as Control Devices in Power Systems Steady State Equivalent Circuits", The Third Conference of the CIGRE Macedonian Committee, Struga, October 3-5, 2001, paper R38-02. (in Macedonian)
6. D. Rajičić, R. Ačkovski, A. Dimitrovski, "A Coordinated High and Medium Voltage Network with Distributed Reserve", The Third Conference of the CIGRE Macedonian Committee, Struga, October 3-5, 2001, paper R31-07. (in Macedonian)
7. R. Taleski, A. Dimitrovski, D. Rajičić, R. Ačkovski, "Techno-Economic Analysis for the Feasibility of Possible Interconnections with the Neighbouring Power Systems", The First ESM's Conference, Bitola, December 16-18, 1999, pp. 425-428. (in Macedonian)

8. D. Rajičić, R. Ačkovski, R. Taleski, A. Dimitrovski, "Possible Directions of Transmission Network Development in the Next Decades", The First ESM's Conference, Bitola, December 16-18, 1999, pp. 301-304. (in Macedonian)
9. A. Dimitrovski, D. Dimitrovski, "Application of Fuzzy Mathematics to Present Worth Analysis", Proceedings of the Institute of Mathematics, PMF, Skopje, 1998, vol. 37 (1996), pp. 73-84.
10. D. Dimitrovski, A. Dimitrovski, "A Theorem for Differentiation of Improper Integral on Parameter and Technical Applications", Proceedings of the Institute of Mathematics, PMF, Skopje, 1998, vol. 37 (1996), pp. 41-57. (in Macedonian)
11. D. Dimitrovski, A. Dimitrovski, "Telephone Equation in Vecua Interpretation", Proceedings of the Institute of Mathematics, PMF, Skopje, 1998, vol. 37 (1996), pp. 29-40. (in Macedonian)
12. A. Dimitrovski, "Fuzzy Radial Load Flow", The Second Conference of the CIGRE Macedonian Committee, Struga, September 23-25, 1998, vol. IV, pp. 174-184. (in Macedonian)
13. A. Dimitrovski, "Economic Assessment of Alternative Solutions with Uncertain Data", The Second Conference of the CIGRE Macedonian Committee, Struga, September 23-25, 1998, vol. IV, pp. 42-52. (in Macedonian)
14. A. Dimitrovski, J. Dimitriev, "Medium Voltage Cables with Semiconducting Sheath", The Second Conference of the CIGRE Macedonian Committee, Struga, September 23-25, 1998, vol. II, pp. 11-17. (in Macedonian)
15. A. Dimitrovski, "Complex Techno-Economic Model for Distribution Systems Analysis", Ph.D. thesis, ETF, Skopje, December, 1996. (in Macedonian)
16. A. Dimitrovski, R. Ačkovski, "Worth Assessment of Automatic and Telematic Switching Equipment in Distribution Networks", The First Conference of the CIGRE Macedonian Committee, Struga, September 26-28, 1996, pp. 83-91 (in Macedonian)
17. A. Dimitrovski, R. Ačkovski, "Stochastic State Calculation in Radial Distribution Networks: Formulation and Model", The First Conference of the CIGRE Macedonian Committee, Struga, September 26-28, 1996, pp. 33-43. (in Macedonian)
18. A. Dimitrovski, R. Ačkovski, "Stochastic State Calculation in Radial Distribution Networks: Solution and Practical Application", The First Conference of the CIGRE Macedonian Committee, Struga, September 26-28, 1996, pp. 24-32. (in Macedonian)
19. R. Ačkovski, D. Rajičić, A. Dimitrovski, R. Taleski, "The Problem of Potential Export in the Medium Voltage Distribution Network Near the Mining Complex 'Suvodol' of the TEP 'REK-Bitola'", ZEMAK International Symposium - Energy Systems in Southeastern Europe, Ohrid, September 21-23, 1995, pp. 329-340. (in Macedonian)
20. A. Dimitrovski, "Distribution Network Reliability Simulation by the Monte Carlo Method", M.Sc. thesis, ETF, Zagreb, Croatia, October, 1992. (in Croatian)

### Professional activities

Senior Member of the IEEE (Institute of Electrical and Electronics Engineers) – Power Engineering Society and Member of the CIGRÉ (International Council on Large Electric Systems)

Reviewer: IEEE Transactions on Power Systems, IEEE Transactions on Power Delivery, IEEE Systems Journal, IEEE Transactions on Smart Grid, IEEE Transactions on Sustainable Energy, IEEE Power Engineering Letters, IET – Generation, Transmission, Distribution (formerly IEE), International Journal of Electric Power & Energy Systems



## Teaching

Courses taught at University of Central Florida

- Smart Power Grids Protection, Power System Reliability, Advanced Power System Analysis, Electric Machinery, Distribution System Analysis, Fundamentals of Electric Power Systems

Courses taught at University of Tennessee – Knoxville

- Electrical Power Systems, Special Topics in Power Systems – System Protection

Courses taught at Washington State University

- Electrical Power Systems, Electrical Power Systems and Machines Laboratory, Power System Protection Laboratory

Courses taught at University Sts. Cyril and Methodius

- Electrical Network Fundamentals, Power Transmission and Distribution, Power System Operation and Economics, Computer Analysis of Power Systems, Optimization of Power Systems, Electrical Lighting

Comprehensive industrial courses taught for Schweitzer Engineering Laboratories, Pullman, WA

- Protecting Power Systems (5 days), Distribution System Protection (3 days), Industrial Power System Protection (3 days), Transmission Line Protection (3 days), Generator System Protection (3 days), Substation Equipment Protection (3 days), Power System Fundamentals (4 days)

## Languages

English - spoken fluency, literacy; Macedonian - native speaker; Bulgarian, Croatian, Serbian - spoken fluency, literacy; Russian - functional literacy; Latin - minimal literacy

## Consulting

Technical studies, reports, tenders, and software authored, mostly on behalf of the former national power utility of Macedonia (ESM):

### Technical studies and development projects

- *Development of the High Voltage Network of the Republic of Macedonia until year 2020*, ETF, Skopje, June, 2000. (in Macedonian)
- *Development of the High Voltage Network of the City of Skopje until year 2020*, ETF, Skopje, October, 2000. (in Macedonian)
- *Energy Sector Development Strategy of the Republic of Macedonia until year 2020*, Macedonian Academy of Sciences and Arts, Skopje, 2000.
- *Application of IAEA Methodology for Planning of Energy Sources in the Electric Power System of Macedonia*, Macedonian Academy of Sciences and Arts, Skopje, 1999.
- *Techno-Economical Aspects for the Interconnection of the Power Systems of Albania, Bulgaria and Macedonia at 220 and 400 kV*, ETF, Skopje, July, 1999.
- *An Expert Study for the Development of Energetics and Energetics' Infrastructure in the Republic of Macedonia - Energy Demand Forecast*, ETF, Skopje, June, 1998. (in Macedonian)
- *Possibilities for Increasing the Reliability Level of the 400 kV Line "Bitola-Dubrovo"*, ETF, Skopje, July, 1994. (in Macedonian)
- *A Methodology for Calculation of Transient Overvoltages and Steady State Voltages and Currents in a Case of Single Phase to Ground Short Circuit*, ETF, Skopje, June, 1992. (in Macedonian)
- *Analysis of the Characteristics of Typical Grounding System Elements Near the Mining Complex "Suvodol" of the TEP "REK-Bitola"*, ETF, Skopje, June, 1991. (in Macedonian)

- *Modeling of Short Circuits, Grounding System and Potential Calculation of the Grounding System Elements Near the Mining Complex "Suvodol" in the Case of a Short Circuit on the 110 kV System Side*, ETF, Skopje, March, 1991. (in Macedonian)

#### Tenders

- *Supply and Installation of the Energy Management System* – Power System Improvement Project financed by the World Bank.
- *Rehabilitation of 6 Hydro Power Plants* – Power System Improvement Project financed by the World Bank.
- *Rehabilitation, Operation and Transfer Project (ROT) for 7 Small Hydro Power Plants*
- *Supply and installation of control system for the 400 kV substation "Skopje 5"*

#### Software

- Package for calculation of grounding systems – used at the mining complex 'Suvodol' and some other ESM units.
- Package for calculation of transient overvoltages and steady state voltages and currents in cases of single phase to ground faults in the medium voltage distribution network – used at ESM distribution systems for their analysis of the grounding of the system neutral.
- Package for calculation of illumination from arbitrary number of different light sources with arbitrary disposition – used at the oil and gas distribution company "Makpetrol" for analysis of exterior lighting of their gas stations.