NSF WORKSHOP
Using Smart Grids Big Data
Memorial Student Center, Texas A&M University
April 18, 2017

Program

7:30  Registration, Breakfast, Coffee and Tea available (Room 2400)

8:00  Welcome: Glen A. Laine, Vice President for Research, Texas A&M University

8:05  Opening Remarks: Mladen Kezunovic, PI, NSF Smart Grids Big Data SPOKE Grant, Texas A&M University, “Workshop Goals and Objectives” Slides >


8:55  Panel 1: “Big Data Availability and Management”
Chair: John McDonald, GE Grid Solutions
Co-Chair: Miroslav Begovic, Texas A&M University
Panelists:
Gary Hayes, CenterPoint Energy, “Learning to Live with and Leverage Big Data: Challenges, Opportunities and Transformation” Slides >
Mark Rice, PNLL, “Open Ecosystem and Distribution of Power Grid Data Sets”
Keith Brewster, University of Oklahoma, “High Resolution Ensemble Weather Forecasts for Power Generation, Transmission & Load” Slides >
Ryan Said, Vaisala Inc., “Use of Lightning Data in Energy Applications”

9:50  Break (Room 2400) and Posters (Room 2401)

10:10 Panel 2: “International Experiences: Synchrophasors BD”
Chair: Glauco Taranto, Federal University of Rio de Janeiro, Brazil
Co-Chair: Mark Weichold, Texas A&M University
Panelists:
Luigi Vanfretti, KTH, Sweden, “Open Source Tools for Synchrophasor Applications” Slides >
Biplab Sikdar, National University of Singapore, Singapore, “Security for Synchrophasor data” Slides >
Diego Issicaba, Federal University of Technology – Paraná, Brazil, “The MedFasee Project: Current Applications and Future Plans” Slides >
Zhiwei Wang, President, GEIRI North America, “Smart Grid and Synchrophasor Applications in China” Slides >

11:05  Focus Group Sessions:
“Tools for BD Analytics” Slides >
“Smart Grid BD Types and Sources” Slides >
“Smart Grid BD Education” Slides >
Rm 2400  Chair: Ilkay Altintas, UC San Diego Supercomputer Center
Co-Chair: Nick Duffield, Texas A&M University
Rm 2500  Chair: Arcot Rajasekar, UNC-Chapel Hill
Co-Chair: Kate Davis, University of Illinois Urbana-Champaign
Rm 2501  Chair: Ram Rajagopal, Stanford University
Co-Chair: Le Xie, Texas A&M University
12:00  Lunch (Room 2300 A&B) and Posters (Room 2401)

Welcome: Narasimha Reddy, Texas A&M Engineering Experiment Station; Texas A&M University

Featured Speaker: Kevin Nowka, IBM, “Big Data Landscape: Challenges and Opportunities”

13:15  Focus Group Sessions

“Uses of Synchrophasor BD”  “Uses of Smart Meters BD”  “Uses of Renewables BD”

Rm 2400  Rm 2500  Rm 2501
Chair: Bill Blevins, ERCOT  Chair: Santiago Grijalva, GaTech  Chair: Bri-Mathias Hodge, NREL
Co-Chair: Mladen Kezunovic, Texas A&M University  Co-Chair: Yu Ding, Texas A&M University  Co-Chair: P.R. Kumar, Texas A&M University

14:10  Plenary Session: Report-out by Focus Groups (Room 2400)

14:45  Break (Room 2400) and Posters (Room 2401)

15:00  Panel 3: “Data Analytics and Tools”

Chair: Jim O'Rourke, OsiSoft, Slides >
Co-Chair: Dilma Da Silva, Texas A&M University
Panelists
Zoran Obradovic, Temple University, “Predictive Analytics Tools for Improving the Electricity Grid Resilience” Slides >
K. Selcuk Candan, Arizona State University, “Data-driven Decision Making for Energy Management in Smart Buildings” Slides >
Brad Williams, Oracle, “Big Data Analytics that drive utility operational performance” Slides >
Ankush Agarwal, Exelon, “Grid Analytics Journey: Developing a Solid Strategy and Game Plan” Slides >

15:55  Panel 4: “Future Efforts”

Chair: Igor Alvarado, National Instruments Slides >
Co-Chair: Karen Butler-Purry, Texas A&M University
Panelists
Philip L. Top, Lawrence Livermore National Laboratory, “Grid Modernization: A DOE Roadmap for Data Management and Analytics” Slide >
Tom Overbye, Texas A&M University, “Synthetic Power Grid Models: What are They, How They're Made, and Why They Matter” Slides >
Jane Greenberg, Drexel University, “A Licensing Model and Ecosystem for Data Sharing” Slides >
Auroop Ganguly, Northeastern University, “Resilience and the Smart Grid with Big Data” Slides >

16:50  Closing Remarks and Action Items: Mladen Kezunovic, PI, NSF Smart Grids Big Data SPOKE Grant

17:00  Post-Workshop Reception and Posters (Room 2401)

19:00  Adjourn
| 1.  | Becejac, Tamara; Payman Dehghanian, Mladen Kezunovic | Synchrophasor Technology: Powerful Tool That Increases Grid Reliability and Advances Electrical Safety |
| 2.  | Chen, Po-Chen; Tatjana Dokic, and Mladen Kezunovic | Risk Analysis of Weather Impacts on Outage Management in Distribution Systems |
| 3.  | Dokic, Tatjana; Po-Chen Chen, Mladen Kezunovic | Placement of Transmission Line Surge Arresters Based on Risk Analysis |
| 4.  | Esmaeilian, Ahad; Mladen Kezunovic | Prevention of Major Blackouts Using Controlled Islanding Scheme |
| 5.  | Ezzat, Aziz; Ahmed; Mikyoung Jun, Yu Ding | Spatial-Temporal Asymmetry in Local Wind Fields |
| 6.  | Grabus, Sam; Jane Greenberg, Sam Madden, Tim Kraska, and Danny Weitzner | ShareDB: A Licensing Model and Ecosystem for Data Sharing |
| 7.  | Hwangbo, Hoon; Yu Ding | Performance Evaluation of Wind Power Systems |
| 8.  | Idehen, Ikponmwosa; Tom Overbye | Windowing Technique for the Detection of PMU Data Errors |
| 9.  | Kezunovic, Mladen; Dilma Da Silva, P.R. Kumar, Le Xie, Santiago Grijalva, Zoran Obradovic | Smart Grids Big Data Spoke |
| 10. | Liu, Yihu; Ling Wu, Dao Zhou, Weikang Wang, Jiecheng Zhao, Yi Cui, Wenpeng Yu, Yong Liu, and Micah J. Till | FNET/GridEye Web Display |
| 11. | Ming, Hao; M. Sadegh Modarresi; Tong Huang; Le Xie | Robust Phase Detection in Distribution System |
| 12. | Nechifor, Alexandru; Vladimir Terzija | An enterprise platform for estimating dynamic load model parameters in real time using SMT |
| 13. | Qian, Cheng; Mladen Kezunovic | Synchrophasor reference algorithm for PMU calibration |
| 14. | Rahimnejad, Abolfazl; Payam Niknejad, Tanushree Agarwal, Reza Barzegaran | Open Source Synchrophasor Implementation on Microgrid Using Microprocessor in the Loop System |
| 15. | Rogers, Austin; Bryan Rasmussen | Developing and testing smarter load shifting strategies using 15 minute demand database: applications for both peak demand penalties and real-time retail pricing. |
| 16. | Tasdighi, Mohammad; Mladen Kezunovic | Distance Relay Settings Assessment for an Evolving Network Topology |
| 18. | Vanfretti, Luigi; Maxime Baudette, Francisco Jose Gomez | Open Source Software Tools for Smart Grid Modeling- Simulation and Model Validation |
| 20. | Wu, Chih-Peng; Dilma Da Silva | Data Placement in Edge Computing for Smart Grids |
| 21. | Yan, Qin; Tatjana Dokic, Mladen Kezunovic | Predicting Impact of Weather Caused Blackouts on Electricity Customers Based on Risk Assessment |
| 22. | Zhang, Bei; Payman Dehghanian, Mladen Kezunovic | Spatial-Temporal Solar Power Forecast through Use of Gaussian Conditional Random Fields |
| 23. | Zhang, Xiaochen; Santiago Grijalva | Customer Behavior Mining through Smart Meter Measurements |
Locations of Smart Grid Workshop

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