

NAPS 2026 Detailed Paper and Poster Program

October 11–13, 2026 | Michigan Technological University | Prepared from the detailed schedule workbook

Contents: 192 oral papers in 24 slots, followed by 125 posters. Poster Session A includes posters 1–63; Poster Session B includes posters 64–125.

Oral Paper Sessions

Round A | Monday, October 12, 2026 | 9:30–11:30 a.m.

Slot A-1: Grid Integration of Large Loads I

Paper ID	Paper Title	Authors
74	Learning Uncertainty Margins for Robust MPC in Data-Center Energy Dispatch	Arash Khojaste, Neda Zarayeneh, Pegah Mavaie and Ravigopal Vennelakanti
162	Risk-Averse Power System Resilience Planning Under AI Data Center Demand Growth Using a Two-Stage DRO-CVaR MILP Optimization	Sharaf Magableh, Caisheng Wang, Oraib Dawaghreh and Xuesong Wang
171	Data-Center-Oriented Energy Management of Hybrid AC/DC Microgrids with Droop-Aware Dispatch and Interlinking Converter Loss Modeling	Maral Shadaei, Xiaofan Wu, Abhishek Banerjee, Karl Fetzer, Faegheh Moazeni and Javad Khazaei
189	A Pre-Dispatch Resonance Safety Criterion for AI Training Clusters	Chandan Chaudhary, Abanish Tiwari, Yansong Pei, Mohammed Ben-Idris and Joydeep Mitra
222	A Scenario-Based Energy Modeling Framework for Renewable-Powered Sustainable Data Centers with Battery Storage and Grid Integration	Gajendra Singh Chawda, Shivanshu Shekhar, Shivam Chaturvedi, Mengqi Wang and Wencong Su
303	Reinforcement Learning-Based Flexible Ramping Product from Data Center Cooling Load	Jatendar Kumar, Yared Brhane Tadese, Bibek Dhakal, Bharath Kumar Dasari, Eliza Delgado, Manohar Chamana, Miao He and Olatunji Adeyanju
327	Storage as a Transmission Asset (SATA) for Large-Load Congestion Relief	Abanish Tiwari, Chandan Chaudhary, Yansong Pei, Mohammed Ben-Idris and Joydeep Mitra
339	A Stochastic Frequency Stability Assessment Framework for SMR-Powered AI Data Centers	Makaela Vidal, Gordon North Piegan III and Liling Huang

Slot A-2: Electrification and Flexible Demand I

Paper ID	Paper Title	Authors
67	Voltage Control Strategies for Electric Vehicle Charging Under Micro-Reactor Operational Constraints in Distribution Grids	Jordan Ngamaleu-Kemta, Nicholas McLoughlin and Adedoyin Inaolaji
112	Affordable workplace charging: Optimizing charger investments and hidden costs	Christina Jin, Anastasia Shub and Maitreyee Marathe
128	Linear Program for EV Charging Station Siting with K-means ℓ_1 Activation Penalty	Abdoulaye Diop, Jonathan Snodgrass, Thomas Overbye and Wonhyeok Jang

Paper ID	Paper Title	Authors
130	Emission-Aware Electric Vehicle Charging for Carbon Offset Creation	Jackson Morgan, Abdullah Al Mehadi, Arifa Sultana, Hongjie Wang and Regan Zane
313	PowerPlace: An App-Coordinated EV Energy Services Framework for Resiliency	Jannatul Adan, Raj Awasthi and Anurag K Srivastava
329	Data-Driven Analysis and Prediction of EV Charging Behavior in Extreme Cold Climates	Nazmun Nahar Maria, Winston Ajakaye, Masoumeh Heidari Kapourchali, Michelle Wilber, Jennifer Schmidt and Mohammad Heidari Kapourchali
340	Coordinating Electric Vehicle Fleet Charging Against Distribution Transformer Thermal Limits	Spandana Balani
356	Trajectory-Assisted Electric Vehicle Billing for Electrified Roadways	Anjali Mandokhot, Vassilis Kekatos, Ashutossh Gupta, Dionysios Aliprantis and Steve Pekarek

Slot A-3: Distribution System Operations and Flexibility I

Paper ID	Paper Title	Authors
96	Evaluation of Coordinated Grid and Facility Controls With an Integrated Co-Simulation Platform	Harsha Padullaparti, Annabelle Pratt, Venkateswara Reddy Motakatla and Murali Baggu
157	A Comprehensive Framework for Active-Reactive Power Dispatch in Active Distribution Network for Regulation Services	Aditya Shankar Kar and Venkataramana Ajjrapu
190	Geospatial Dynamic Transformer Rating for Renewable Integration and Transformer Asset Utilization Planning	Muhammad Abul Hascham Barkhaya, Md Shakil Anwar and Yazhou Leo Jiang
211	A Method to Detect Wrong Capacitor Status in Distribution Power Flow Analysis Using Field Measurements	Aaditya Pandey, Mesut Baran, Valentina Cecchi, Badrul Chowdhury, Brynn Hosey, Mariann Thomas, Hadeel Alserafei, Jordan Tynan and Brian Pennington
243	Grid-Interactive Data Centers for Voltage Regulation in Unbalanced Distribution Networks	Shengyi Wang, Muhammad Rizwan, Liang Du and Xin Fang
291	Reverse Flow Constraint Design for Distribution System Operating Envelopes	Samin Alipour and Santiago Grijalva
322	Wildfire Smoke-Aware Operation of PV-Integrated Distribution Systems Using Gaussian Plume Dispersion Modeling	Mehdi Rostamzadeh, Justice Evans, Mohammad Heidari Kapourchali, Long Zhao, Payman Dehghanian and Visvakumar Aravinthan
358	Cost-Tiered Nested Flexibility Envelopes for Privacy-Preserving TSO-DSO Coordination	Anil Basnet and Zongjie Wang

Slot A-4: Power Electronics and HVDC

Paper ID	Paper Title	Authors
41	Adaptive B-Spline POD Scheme for Effective Oscillation Damping by VSC-HVDC Links	Johan R. Granados, Andrea Arroyo, Rubén Tapia-Olvera and Luis M. Castro
97	Stability Enhancement of Centralized UPS Data Center Systems Under Weak-Grid Conditions	Jesus David Vasquez Plaza, Yonghao Gui, Jin Dong and Jamie Lian

Paper ID	Paper Title	Authors
153	Generic PID Control for a Grid-Forming Inverter: Modeling and Performance Comparison with Conventional PID Control	Mohammed Alrasheedi, Zhiqiang Gao and Lili Dong
187	Modular Multi-Level Converter based E-STATCOM to Mitigate the effects of High Penetration of Variable Renewable Energy Sources and Large Dynamic Loads	Zakaria Khalil and Brian Johnson
246	Single Sourced Switched Capacitor Multi-Level Inverter with Boosting Capability for Microgrid	Hasan Iqbal and Arif Sarwat
270	Experimental Verification of a Droop Control Implementation on the Arduino-Based Atinverter	Benjamin Johnson, Ahsan Iqbal, Renuka Loka, Mason Horgen and Mahmoud Kabalan
305	Real-Time Validation of an MMC-HVDC Link for Asynchronous AC Grid Interconnection	Ahmed S. Elnozahy, Salaheldin Ahmed, Omar Barghash, Mohamed M. Zakaria Moustafa and Mahmoud Kabalan
361	Unlocking Load Flexibility of Data Centers Using Centralized UPS and Solid-State Transformer-Based 800-V DC Architecture for Speed to Power	Jay Sawant and Gab-Su Seo

Slot A-5: AI and Machine Learning for Power Systems Analytics I

Paper ID	Paper Title	Authors
11	Inferring Effective ZIP Load Coefficients from Short-Duration Disturbance Measurements	Morteza Nouri Harzevili, Ramtin Hadidi, Narges S Ghiasi and Abdul Shafae Mohammed
15	Short-Circuit Modeling of a IEEE-2800 Compliant Grid-Following Inverter using Machine Learning	Abhilash Gujar, Sukumar Brahma and Dot Raj Kunwar
139	PowerAgentBench-Dyn: A Benchmark for Agentic AI in Power System Dynamic Studies	Qian Zhang, Andrea Pomarico, Costas Mylonas, Magda Foti, Alberto Berizzi and Le Xie
192	Agentic AI: Adapting Large Models to Educate Residents on Time-Of-Day Pricing in Fort Collins, Colorado	Megan Kelly, Sierra Nordwald and Timothy Hansen
200	Machine Learning for Global Residential-Commercial-Industrial Load Decomposition	William Wade, Richard Asiamah, Jean-Paul Watson and Daniel Molzahn
230	Robust Bearing Fault Diagnosis Using Transfer Learning and SISA-Based Machine Unlearning	Emily Yin, Jingyi Yan, Nanhong Liu and Jie Zhang
293	A Benchmark on LLM-Based Power Flow Computation: Do More Structured Prompts Help?	Tingwei Chen, Kaiyang Huang and Kai Sun
351	Design and Real-Time Validation of Robust Fuzzy-Supervised MPC for Frequency Stability in Islanded MGs	Muhammad Ragab, Abdelwahab Bebars and Hanif Livani

Slot A-6: Forecasting and Uncertainty for Power Systems I

Paper ID	Paper Title	Authors
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Paper ID	Paper Title	Authors
32	A Robust Method for Applying Forecast States to AC Power Flow Cases	Thomas Nicol and Thomas Overbye
70	Machine Learning–Based Thermal Modeling and Dynamic Thermal Rating for Distribution Transformers	Gaurav Yadav and Yuan Liao
106	A Reserve Procurement Framework Using Probabilistic Forecasting	Clara Yoonsoo Park and Marijia Ilić
124	Machine Learning Based Analysis of Wind Power Curtailment in the Brazilian Interconnected System	Bruno Soria, Bruno Pinheiro, Daniel Dotta and Gabriel Lopes
177	Dual Adaptive Conformal Prediction for Streamflow Forecasting in Hydropower Operations	Sai Laasya Ankem, Yuwei Zong, Mucun Sun and Yanwen Xu
194	Adaptive Critic Design-Based Real-Time Wind Power Forecasting for Community Microgrid	Sohag Kumar Saha, Ali Arzani and Satish Mahajan
277	Preventive Load Frequency Control in Power Systems using Conformal Prediction	Danial Zendeheel, Seyyedmilad Ebrahimi, Shahid Nawaz Khan, Enrico De Santis and Antonello Rizzi
355	The Value of Perfect Endpoint Forecasts for Offshore-Wind Thermal Firming	Arash Khojaste, Geoffrey Pritchard and Golbon Zakeri

Round B | Monday, October 12, 2026 | 12:45–2:45 p.m.

Slot B-1: Power System Planning and Operations I

Paper ID	Paper Title	Authors
26	DC optimal power flow via quantum singular value transformation and variational quantum linear solver	Ninh Nguyen and Nga Nguyen
58	Power Flow Bifurcation and Grid Fragility Under Increasing Loads and Coordinated Attack Scenarios	Chee-Wooi Ten, Yi Hu and James Momoh
63	Visualizing and Quantifying Power Flow Jacobian Sensitivities	Josue Sanchez, Rehan Nawaz and Santiago Grijalva
89	An Open-source and Optimization-based AC/DC Power Flow Model for the Brazilian Interconnected Power System	Marck Llerena Velasquez, Marcos J. Rider, Daniel Dotta and Fernando W. Liederer
167	Geospatial Sensitivity of Transmission-Constrained ACOPF to Generator Retirement	Willa Gutowski, Ulyana Shyrokaya, Nicholson Koukpaizan, Joshua Hambrick, Slaven Peles and Eve Tsybina
223	Frequency-Secure ACOPF under N-1 Generator Contingencies via Benders Decomposition	Jewel Joy, Lin Gong and Min Xiong
244	Impact of Large Electric Loads on Locational Marginal Price of Energy	Mary Tran, Ashlee Villarreal and Visvakumar Aravinthan
296	Comparative assessment of linearized power--flow models for inverter--dominated systems	Orlando Gonzalez, Jose Delgado, Alejandro Angulo and Fernando Mancilla

Slot B-2: Reliability, Resilience, and Risk I

Paper ID	Paper Title	Authors
13	Sensitivity of Hurricane-Transmission System Modeling to Hurricane Forecast Track and Transmission Tower Age	Jenna Knudtson, Brent Austgen, Cody J. Newlun, Dalton A. Brucker-Hahn and Johanna L. Mathieu
35	An Extensible Approach for Modeling the Impact of Deterministic and Stochastic External Inputs in the Power Flow	Thomas Overbye, Rawand Badawi, Stephanie Paal, Jonathan Snodgrass and Jamie Weber
64	Cyber-Resilient Special Protection Scheme Design for Hypothesized Substation Contingencies	Lawrence Dilworth, Chee-Wooi Ten and Andrew Ginter
77	Cascading Contingency Analysis of Modern Power Systems Using a Stochastic Hybrid Systems Framework	Masoud Honarvar Nazari and Hamid Varmazyari
99	A Flexible Method for Identifying Electric Grid Extreme Temperature Events as Per NERC TPL-008	Seungjun Lee, Kseniia Zhgun, Rawand Badawi, Farnaz Safdarian, Thomas J. Overbye and Jamie D. Weber
168	Dynamic Operational Reserve Margin Assessment from Risk-Constrained Unit Commitment States	Pratishtha Shukla, Shaked Regev, Evan Brody, Charles Foltz and Teja Kuruganti

Paper ID	Paper Title	Authors
212	Contingency Detection Integrated Model Predictive Control for Resilient Load Frequency Control	Erfan Mehdipour Abadi, Hamid Varmazyari, Sharaf K. Magableh, Caisheng Wang, Le Yi Wang and Feng Lin
345	Electrical Power Grid Reliability Assessment Exposed to Straight Line Winds	Satish Adhikari and Md Abul Hasnat

Slot B-3: Grid Integration of Large Loads II

Paper ID	Paper Title	Authors
109	FACT-DC: Feasibility Analysis & Configuration Tool for Data Centers	Viswadeep Lebakula, Annetta Burger, Lee Sangkeun, Thomaz Carvalhaes, Junchuan Fan, Archana Ghodeswar, Jacob Morris, Vivek Singh, Sanjeeva Dodlapati, Joe Tuccillo, Matt Denman, Brandon Miller, Supriya Chinthavali and Giri Iyer
131	Voltage Stability Enhancement of Large Load Interconnections Using Synchronous Condensers	Muhammad Ibrahim Abbas and Qun Zhou Sun
138	Impact of Edge Data Centers Integration on Power Quality in Distribution Grids	Md Zahirul Khan and Farzad Ferdowsi
174	Multi-Period AC Optimal Power Flow with Grid-Interactive Data Center Workload Flexibility	Jiajin Huang, Jianyi Yang and Lei Fan
186	A Fast Approach to Assessing Hosting Capacity for Large Loads	Ulyana Shyroka, Willa Gutowski, Eve Tsybina, Joshua Hambrick and Slaven Peles
267	Trajectory Sensitivity-Based Dynamic Assessment of an AI Data Center Under Contingencies	Arnav Bagga, Saskia A. Putri, Abhishek Banerjee and Xiaofan Wu
331	Scheduling Reactive Power Support from Edge Data Centers in Distribution Grids	Chinwe Aghadinuno, Margarita Loupa, Miltos Alamaniotis, Sara Ahmed and Nikolaos Gatsis
350	Unbalanced Distribution Feeder for AMI Data Analytics, Protection Studies, and Coordinated Operation of Co-Located Data Center Microgrids	Kiran Kumar Challa

Slot B-4: Hardware-in-the-Loop and Real-Time Validation I

Paper ID	Paper Title	Authors
23	Power Hardware-in-the-Loop Validation of Grid-Forming Inverters for Hybrid PV-BESS Systems	Aaqib Manzoor, Rashmi Rajendra Keche, Zakir Hussain Rather, Suryanarayana Doolla and Hao Wang
117	DNP3 Arbitrary Packet Generation: Hardware in-the-loop DNP3 Simulator	Jakob Fick, Santiago Grijalva, Jackson Bush and Trevor Lewis
119	Control-Oriented Real-Time Model of Grid-Following Inverter Using Typhoon HIL	Omar Barghash, Md Mahedi Habib Chowdhury, Rakesh Shamrao Patekar, Mahmoud Kabalan and Thomas Bozada
191	Hardware-in-the-Loop Evaluation of Second-Harmonic Blocking in Feeder Protection Relays	Jayden Matt and Mahyar Zarghami

Paper ID	Paper Title	Authors
221	Design, Integration, and Open Loop Validation of a Typhoon HIL-Enabled Power Amplifier for PHIL Applications	Tate Bosman, Rakesh Shamrao Patekar, Mahmoud Kabalan and Thomas Bozada
238	Scalable Controller-Hardware-in-the-Loop Testbed for Multi-Protocol Grid-Edge Coordination	Nischal Guruwacharya, Andy Olson, Sanjeev Pannala, Shubhasmita Pati, Bala Kameshwar Poola, Bidur Poudel, Sam Seo and Keith Davidson
257	Assessment of a Commercial Grid-Forming Inverter Under Loss of the Last Synchronous Generator Scenario Using a Power Hardware-in-the-Loop Testbed	Javier Hernández-Alvídrez, Nicholas Gurule and Jack Flicker
309	Measurement-Guided Active-Power Transient Shaping of Grid-Following Inverters Using GA Optimization	Hanadi Haroun, Mohanad Elsayed, Mahmoud Kabalan and Thomas Bozada

Slot B-5: Protection, Monitoring, and Control I

Paper ID	Paper Title	Authors
37	Analysis of Environmental Effects on Arc Dynamics in Power Insulators Using a Circuit-Level Model and a Magnetohydrodynamic Approach	Jehad Hedel, Dongliang Duan, Thomas A Minckley, Jacqueline Shinker, Qihua Huang and Nga Nguyen
69	Accelerating EMT Studies by Merging Interconnected Transmission Lines with Applications in Protection and Stability Analysis	Nasib Khadka and Reza Jalilzadeh Hamidi
80	A Common-Mode Mitigation Study of a Reduced Scale AC Microgrid	Markus Wittreich, Samuel Doshna, Jackson Lunsford-Poe and Scott Sudhoff
147	Leveraging Grounding Transformer Magnetic Core Structure to Handle DC Faults	Drummond R. Fudge, Steven D. Pekarek, Scott D. Sudhoff and Norbert Doerry
172	Simulation of Rural Utility Pole Aerodynamics with Power Lines and Bio-Inspired Drag Mitigation	Lucas Degen and Jeffrey Doom
181	Experimental Assessment of Traveling-Wave Detectability in Transformer-Terminated Lines	Basharat Shah, Arshad Ismail, Shipra Tiwari, Adrian W. D. Sarmiento, Karcus M. C. Dantas, Flavio B. Costa and Wayne Weaver
197	Capacitance Modeling of an AC Common-Mode Inductor with Edge-Wound Coils	Prateek Chatterjee, Scott D Sudhoff, Drummond Fudge and Norbert Doerry
214	Assessing Traveling Wave Observability in Short Distribution Lines: An Experimental Approach	Arshad Ismail, Basharat Shah, Shipra Tiwari, Adrian W. Diaz Sarmiento, Karcus M. C. Dantas, Flavio B. Costa and Kurt LaFrance

Slot B-6: Power System Cybersecurity I

Paper ID	Paper Title	Authors
48	Threat Modeling and Security Validation of Distributed Energy Resource (DER) Gateways	Shree Ram Abayankar Balaji, Harish Kolla, Akshay Ram Ramchandra, Stefano Fenu, Sonam Kharade, Siby Jose Plathottam and Prakash Ranganathan
123	Graph-Based Distribution System Transformer-Customer Connectivity Identification Using Smart Meter Data and Community Detection	Dingwei Wang, Naihao Shi, Zhaoyu Wang, Matthew Reno and Joseph Azzolini

Paper ID	Paper Title	Authors
145	Joint Data-Driven Anomaly Detection and Identification in Smart Grid Communication Layer	Priya Mittal, Sharon A. Boamah, Michel Caraballo, Janise McNair and Arturo Bretas
150	Explainable AI-based Multiclass Cyberattack Detection for DERMS-integrated Distribution Grid Using a Generated Dataset	Nazmus Saqib, Francis C. Joseph and Manimaran Govindarasu
169	A Composite Reliability-Resilience Index (CRRI) for DER-Integrated Distribution Systems with Networked Microgrids	Mohammad Shamaul Alam, Hossein Salehfar and Prakash Ranganathan
300	Cyber-Physical Temporal-Fusion Detection of Multi-Attack Events in a Real-Time DER-Integrated Smart-Grid Testbed	Eliza Delgado, Yared Brhane Tadese, Bharath Kumar Dasari, Jatendar Kumar, Stephen Bayne, Manohar Chamana, Olatunji Adeyanju and Argenis Bilbao
323	Interpretable ML for Cyberattack Classification in Power System OT Networks Through Hyperparameter Optimization and SHAP Analysis	David Rodriguez-Borrueal, Luis Garza and Paras Mandal
344	Physics-Informed and Hardware-Address-Aware Dual-Layer Detection of FDIA and MiTM-Based DoS Attacks in a DER-Integrated Smart-Grid Testbed	Bibek Dhakal, Yared Brhane Tadese, Bharath Kumar Dasari, Jatendar Kumar, Md Shahin Munsif, Manohar Chamana, Olatunji Adeyanju and Stephen Bayne

Round C | Monday, October 12, 2026 | 3:15–5:15 p.m.

Slot C-1: Power System Planning and Operations II

Paper ID	Paper Title	Authors
56	Emission-Minimizing Ancillary Service Provision from Heavy-Duty Electric Vehicles	Muhammad Faisal Baig and Yuanrui Sang
78	Scenario-Aware Probabilistic Weak-Bus Screening Using Weighted Ensemble Consensus Clustering	Md Samsul Alam and Rui Fan
86	Transmission Planning with Coordinated Deployment of Grid-Enhancing Technologies	Md Thesun Alamin and Sumit Paudyal
103	Assessing the Spatial Impact of Generator Retirement on Power System Inertia	Ajay Yadav, Mohammed M. Olama, Ali Riza Ekti and Nils M. Stenvig
137	Stochastic Frequency-Constrained Unit Commitment: A Case Study on La Palma	Azeez O. Olasoji, Adeyinka Victor Adebayo and Juan Esteban Sierra-Aguilar
175	Efficiency-Aware Optimization of Wind-Powered Electrolyzer Operation with Multiple Operating States	Mohamed Amr, Jiajin Huang and Lei Fan
207	A Repository for Global Daily Load and Solar Profiles	Rowan Perz-Edwards, Nathaniel Andre Grange, Richard Asiamah, Jean-Paul Watson and Daniel Molzahn
265	A Security-Constrained Unit Commitment Framework with Novel Convex Second-Order Cone Voltage Stability Constraints	Abdelwahab Bebars, Hanif Livani and Mahdi Mehrtash

Slot C-2: Reliability, Resilience, and Risk II

Paper ID	Paper Title	Authors
24	Quantifying the Resilience Benefits of Undergrounding a Circuit with Utility Data	Arslan Ahmad, Ian Dobson and Anne Kimber
55	Substation Interdependency and Community Outage Exposure via Co-Outage Networks	Larico Andres and Wencong Su
193	Impact of Solar Panel Degradation on Adequacy Assessment of Solar Farms	Anh Nguyen, Thi Ha Nguyen and Niannian Cai
236	Failure-Mode-Driven Postprocessing for County-Level Power Outage Impact Forecasting	Narayan Bhusal, Sunil Subedi, Sangkeun Matthew Lee and Supriya Chinthavali
266	Drift-Aware False-Secure Mitigation in DNN-Assisted Virtual Inertia Scheduling (VIS) of PV-Dominated Microgrids	Md. Sajid Hasan and Buxin She
302	Hybrid Blackstart Strategy for Resilient Operation of a Real-World Microgrid	Md Jamal Ahmed Shohan, Mohanad Elsayed, Mohamed M. Zakaria Moustafa, Mahmoud Kabalan and Thomas Bozada
347	Nodal Reliability Aware Hyperscale Data Center Hosting Capacity Assessment under Wind Uncertainty	Praveesh Yoganathan, Demy Alexander, Arun-Kaarthick Manoharan, Visvakumar Aravinthan, Al Tamimi and Ryan Yokley
359	Wildfire Risk Mapping and Dataset Criticality Analysis for Distribution Line Outage Assessment	Aayusha Thapa and Zongjie Wang

Slot C-3: Distribution System Operations and Flexibility II

Paper ID	Paper Title	Authors
53	Techno-Economic Optimization of Converter and DC-Link Sizing to Support Unbalanced Distribution Networks	Morufdeen Atilola, Adedoyin Inaolaji, Rahmat Heidari and Frederick Geth
104	Real-Time Digital Twin for Energy Infrastructures Using Neural ODE and Feeder-Level P/Q Measurements	Mehdi Akbari, Maral Shadaei and Javad Khazaei
144	Supervised Phase Identification in Power Distribution Systems using Graph Kolmogorov Arnold Networks	Mihir Malladi, Daniel Lau and Yuan Liao
148	Adaptive State Estimation Under Topological Uncertainty in Unobservable Primary Distribution Systems Using Strategically Placed Sensors	Farah Elsherif, Behrouz Azimian and Anamitra Pal
154	Redefining Economic Performance Parameters to Reduce Resource Underutilization in Power System	Shahid Khan, Abdul Haseeb, Hafiz Nazir and Bo Liu
163	Assessing Energy-Agriculture Trade-Offs in Agrivoltaic Systems: A Case Study from Germany	Zeeshan Subhani
283	Control-Design-Oriented Modeling of Grid-Connected Photovoltaic Inverters	Sudheer Tirumala, Francesco Conte, Samuele Grillo and Fernando Mancilla-David
311	Integration and Validation of Optimization-Based Tertiary Control in Grid-Connected Microgrid	Akriti Acharya, Md Jamal Ahmed Shohan, Mohamed M. Zakaria Moustafa, Mahmoud Kabalan and Thomas Bozada

Slot C-4: Inverter-Based Resources and Microgrid Control I

Paper ID	Paper Title	Authors
52	Holistic Stability Region Evaluation of Low Inertia Power System Frequency Response	Yuxin Deng, Xin Fang, Shuan Dong and Jin Tan
178	Resilient Distributed Control for Microgrids via Shadow Banning Ratio Consensus	Eric Silk, T.G. Roberts and Alejandro Dominguez-Garcia
279	Evaluating the Correspondence Between Signal-Based Modes and Linearized Eigenmodes in a Large-Scale Power-System	Owen Cornmesser, Adam Birchfield and Thomas Overbye
282	Chance-Constrained Frequency Stability Analysis of Multi-Area Grids Under Stochastic Disturbances and Islanding Events	Yonghao Gui, Sunil Subedi and Hong Wang
304	A Framework for Evaluating Metering-Induced Operational Impacts in Remote Islanded Microgrids: A Case Study from Alaska	Okwuchukwu Chukwu, Richard Wies and Gwen Holdmann
325	Multi-Frequency Dynamic Phasor Modeling for Transient Simulation	Swadesh Sharma and Sumit Paudyal
335	A Reactance-Robust Newton-Taylor Power Flow for Islanded IBR Microgrids	James Momoh, Oshione Adams and Emmanuel Igban
348	Propagation Pattern of Disturbance due to Large Fluctuating Load Observed by Electrical Waveform of Bus Frequency using Graph Signal Parameters	Md Ashikujjaman and Md Abul Hasnat

Slot C-5: Protection, Monitoring, and Control II

Paper ID	Paper Title	Authors
61	SymbolicPhasor: Power System Phasor Estimation via Deep Symbolic Regression	Sina Mohammadi and Wencong Su
90	Comparative Analysis of Distance Relay Impedance Trajectories in Synchronous Generators and Inverter-Based Resources Integrated Power Systems	Adarsha Bohara, Mehrdad Moghanian and Pratik Pandey
113	GED: Geographic Edge Diffusion for Synthetic Transmission Grids	Jingong Chen, Kwanghee Won and Timothy Hansen
180	Adaptive Protection Coordination of Directional Overcurrent Relays in EV-Integrated Australian Distribution Networks	Mubashar Javed, Markus Wagner, Laiq Khan, Muhammad Numan Akhtar and Yasir Muhammad
188	CNN-Based Severity Classification of Stator Inter-Turn Faults in Simulated Wind Turbine Squirrel-Cage Induction Generators Using Three-Phase Current Signals	Antonia Samilly Nogueira Soares, Luiz Gonzaga de Queiroz Silveira Júnior, Luiz Felipe de Queiroz Silveira, Agostinho de Medeiros Brito Júnior, Flavio B. Costa and Luciano Sales Barros
250	Monitoring Communication and Timing Performance in PMU-Based WAMS	Aaron St. Leger, Austin Lee and Nicholas Barry
294	Power System EMT Modeling and Simulation Training: Design, Development, and Deployment	Md Shamim Hasan, Phuong H. Hoang, Francis C Joseph, Phani R. V. Marthi, Suman Debnath, Alex Shattuck, Aung Thant and Julia Matevosyan
354	One-Cycle Fault Classification and Faulted-Line Identification on the PROTECT-90 Dataset: An Initial Application Benchmark	Emad Abukhousa, Abdulaziz Qwbaiban, Saman Zonouz and A.P. Sakis Meliopoulos

Slot C-6: Forecasting and Uncertainty for Power Systems II

Paper ID	Paper Title	Authors
18	Very Short-Term Solar Power Prediction Using Forgetting Factor Adaptive Extended Kalman Filter	Solmaz Nazaralizadeh, Paramarshi Banerjee, Sepehr Karimi, Anurag K. Srivastava and Parviz Famouri
85	Comparative Performance Evaluation of ML-based Short-Term Photovoltaic Power Prediction with Changing Feature Windows and Forecast Horizons	Md Moshfique Rahman and Anurag K. Srivastava
140	Accuracy–Efficiency Trade-Off in Day-Ahead Solar PV Forecasting at One-Minute Resolution	Syed Mahboob Ul Hassan and Jianhua Zhang
156	Beyond Accuracy: Operational Value of Satellite Cloud Data for Microgrid Battery Planning	Md Rafiqul I Sarker, Erez Aghion, Md Zahirul Khan and Farzad Ferdowsi
184	Bayesian Solar-cGAN for Reliable Multi-Month Probabilistic Solar Photovoltaic Generation Forecasting	Syed Mahboob Ul Hassan, Le Minh Vu, Thomas Ortmeyer and Jianhua Zhang
288	Multi-Day Horizon Solar Power Forecasting	Md Rayhan Chowdhury, Tasmina Imam, M Al Mamun, Anwarul Islam Sifat and Farah Ferdous
297	Residential Net-Load Forecasting with Statistical and Learning-Based Models	Tasmina Imam, Anwarul Islam Sifat, Md Rayhan Chowdhury and Farah Ferdous
333	Quantum-Enhanced LSTM for Day-Ahead Electricity Price Forecasting	Harsh Desai, Sayed Mohsin Reza and Md Habib Ullah

Round D | Tuesday, October 13, 2026 | 9:45–11:45 a.m.

Slot D-1: Electrification and Flexible Demand II

Paper ID	Paper Title	Authors
29	Aggregate Modeling of System-Level Thermal Demand Flexibility	Catherine Wang, Constance Crozier, Priyadarshan Priyadarshan and Kevin Kircher
47	Weather-Aware EV Charging Demand Forecasting and Optimal Scheduling Using Hybrid Transformer-LSTM	Sajib Debnath, Md Abubakkar, Md. Uzzal Mia and Arindam Kishor Biswas
204	Power Quality Analysis of Nuclear-Renewable-Fed Electrolyzers	Benson Ezea
261	Assessing the Impact of Electricity Tariff Design on Water Distribution Network Flexibility	Aan Nazmus Sakib, Constance Crozier and Anna Stuhlmacher
326	Optimizing Ice Thermal Storage for Demand Response using Genetic Algorithm via EnergyPlus Python Co-Simulation	Charles Ofori, Robert Craven and Satish Mahajan
332	Optimal Sizing and Dispatch of Biogas Storage and CHP for Demand Response in Wastewater Treatment Plants	Hongyi Wu and Anna Stuhlmacher
341	Weather-Informed Stormwater Load Modeling for Resilient Distribution Systems	Lakshika Karunaratne, Adithya Melagoda and Visvakumar Aravinthan
353	Hourly Grid Impacts of Residential Heating Electrification: Effects of Heat Pump Sizing, Backup Operation, and Baseline Heating-Fuel Mix	Adnan Hilal, Ana Dyreson and Josh Quinnell

Slot D-2: Energy Storage

Paper ID	Paper Title	Authors
45	Thermal Characterization of an 18650 Lithium Iron Phosphate Cell Based on Open-Circuit Voltage Obtained From Slow Cycling	Dale Reid
54	Optimal Dispatch of Hydrogen Energy Storage Systems Under Varying Uncertainties and Operating Time Horizons	Jose Manuel Dolot and Meng Wu
71	Online Feedback Optimization of Energy Storage to Smooth Data Center Grid Impacts	Yanyong Mao, Johanna L. Mathieu and Vladimir Dvorkin
198	Model-Free Load Smoothing Control of Battery Energy Storage Systems for AI Data Centers	Milad Beikbabaei, Bao Nguyen, Nguyen Khoa Nguyen and Ali Mehrizi-Sani
263	Power Quality and Electrothermal Tradeoffs in Grid-Connected Battery Energy Storage Systems	Sepehr Karimi, Anurag K. Srivastava, Aboubakr Salem and Parviz Famouri
271	Distributed Coordination of Utility-Scale Battery Energy Storage Systems Using Multi-Agent Reinforcement Learning	Parthiv Debnath, Lin Gong, Xiangfang Li and Lijun Qian
286	Optimal BESS Dispatch for Demand Charge Reduction and TOU Energy Arbitrage	Rami Belhajali, Mohammed Olama and Marouane Salhi
289	Three-Phase Optimal Operation of Soft Open Points with Integrated Energy Storage	Genevieve Myers and Anna Stuhlmacher

Slot D-3: Hardware-in-the-Loop and Real-Time Validation II

Paper ID	Paper Title	Authors
42	Real-World Implementation of Adaptive Secondary Control for Voltage and Frequency Restoration of Islanded Diesel Generators: A Case Study	Rakesh Shamrao Patekar, Mohanad Elsayed, Mahmoud Kabalan, Mohamed M. Zakaria Moustafa, Renuka Loka and Thomas Bozada
84	Integration of Four Industrial Controllers in Typhoon HIL-Based CHIL Simulations for Microgrids: A Case Study	Kyle Mountin, Rakesh Shamrao Patekar, Mahmoud Kabalan and Thomas Bozada
170	Communication-Free Adaptive Secondary Control for Cyber-Resilient AC Shipboard Microgrids	Lydia Asare Bediako and Javad Khazaei
217	Performance Testing of a Genset Controller through the Publish-Subscribe Model bound by Quality of Service Policies	Zoe Thoma, Christi Watson and Mahmoud Kabalan
218	High-Fidelity Modeling and Real-Time Controller Hardware-in-the-Loop Validation of Industrial Diesel Generator Systems Using Woodward C-HIL	Mohanad Elsayed, Thomas Holiday, Rakesh Shamrao Patekar, Mahmoud Kabalan, Mohamed M. Zakaria Moustafa and Thomas Bozada
241	Parallel Operation of Three Industrial-Grade Woodward easYgen Generator Controllers with RTAC-Based Secondary Control for Microgrid Voltage and Frequency Restoration	Md Mahedi Habib Chowdhury, Omar Barghash, Rakesh Shamrao Patekar, Mahmoud Kabalan and Thomas Bozada
248	Induction Motor Starting in Islanded Diesel-Generator Microgrids: A Controller-Hardware-in-the-Loop Study With Virtual Secondary Frequency and Voltage Restoration	Md Mahedi Habib Chowdhury, Rakesh Shamrao Patekar and Mahmoud Kabalan
310	Experimental Validation of Real-Time Models of Grid-Forming Sources Parallel Operation in an Islanded Microgrid: A Case Study	Ahsan Iqbal, Salaheldin Ahmed, Mahmoud Kabalan, Renuka Loka, Thomas Holliday and Thomas Bozada

Slot D-4: Inverter-Based Resources and Microgrid Control II

Paper ID	Paper Title	Authors
81	Three-Phase Discrete-Time Model Identification of Distribution Feeders with Multiple Inverter-Based Resources	Victor Viscarra-Gallardo and Ali Abur
111	Comparing Direct and Indirect Overcurrent Limiting Methods for GFM Inverters	Salaheldin Ahmed, Ahsan Iqbal and Mahmoud Kabalan
159	Investigating the Performance of Composite Synchronization Control in Grid-Forming Converters Under Weak Grids and Large Disturbances	Shahid Khan, Bo Liu and Seyyedmilad Ebrahimi
173	Robust Grid Synchronization for Inverter-Based Resources and Synchronous Generators	Olaoluwapo Ajala, Grant McKechnie and Alejandro Domínguez-García
220	Full-Order Eigenvalue-Based Tuning and Validation of a Real-World ESS Grid-Forming Inverter	Ahmed S. Elnozahy, Madhukar Rao Airineni, Mohamed M. Zakaria Moustafa, Mahmoud Kabalan and Thomas Bozada
284	Steady-State Lagging Reactive Power Compliance Planning for IBR Plants: A Case Study on Inverter Capability, Shunt Placement, and MPT Sizing	Dileep Cheerla, Amirthagunaraj Yogarathnam, Divya Jain and Satish Natti

Paper ID	Paper Title	Authors
316	Evaluation of a QSG-SOGI-Based Decoupled Positive- and Negative-Sequence Current Control Strategy for GFL IBRs Under Asymmetrical Faults	Pedro Martins, Karcus Dantas, Felipe Lopes, Basharat Shah and Flavio Costa
317	PMU-Based Wide-Area Coordination of Grid-Following and Grid-Forming BESS in Low-Inertia Grids	Gabriel E. Mejia-Ruiz, Andres Intriago and Mario Roberto Arrieta Paternina

Slot D-5: AI and Machine Learning for Power Systems Analytics II

Paper ID	Paper Title	Authors
14	Unsupervised PMU Event Detection Using a VAE-GAN With Sliding Window Aggregation	Yi Hu and Zheyuan Cheng
46	SFF-GAN Based Data Augmentation for Enhanced Fault Diagnosis in Inverter-Dominated Microgrids	Swetha Rani Kasimalla, Kuchan Park, Junho Hong, Young-Jin Kim and Hyojong Lee
108	Stability-Aware and Cyber-Resilient Digital Twins for Modern Power Grids: A State-of-the-Art Review	Raj Krishna Nepal, Majid Mehrasa and Parviz Rastgoufard
166	Ensemble Learning for Emergency Call Classification in Electric Power Distribution Systems	Arthur Cristovão, Kézia Dantas, Rafael Costa, Karcus Dantas, Carlos Gomes and Flavio Costa
205	Increasing Line Outage Localization Performance with Ensemble Classifiers	Daniel Flores, Yuanrui Sang and Michael McGarry
240	A Combined MUSIC-EEMD Framework for Detection of Subsynchronous Oscillations Using PQ Data Analytics	Md Maidul Islam and Gaurav Singh
299	Heterogeneous Feature-Based Ensemble Learning Optimization Framework Using IEC 104 Datasets	Bharath Kumar Dasari, Manohar Chamana, Olatunji Adeyanju and Stephen Bayne
349	Online Adaptation of a Neural Network Power Flow Surrogate under Covariate Shift	Sayeb Mohammad Tadvin and Md Abul Hasnat

Slot D-6: Power System Cybersecurity II

Paper ID	Paper Title	Authors
152	Unobservable Tensor-Completion Enabled False Data Injection Attacks against PMU State Estimation	Akash Debnath, Bo Liu and Hongyu Wu
225	A Transformer-Based Mixture-of-Experts Framework for False Data Injection Attack Detection and Localization	Ruslan Abdulin and Mohammad Rasoul Narimani
227	Federated ARMA-GNN Localization of False Data Injection Attacks in Smart Grids with Temporal Signal-Processing Features	Benjamin Myers, Ruslan Abdulin and Mohammad Rasoul Narimani
231	Data-Driven Resilient AC State Estimation Under Stealthy False Data Injection Attacks Using Robust Measurement Recovery	Parsa Valizadeh Asl, Jennifer Marroquin, Ruslan Abdulin, Rohollah Moghadam and Mohammad Rasoul Narimani

Paper ID	Paper Title	Authors
255	Region-Based Convolutional Neural Network for False Data Injection Attack Detection in Cyber-Physical Power Systems	Anita Jalili-Kalhari, Samar Kimiagar, Ruslan Abdulin, Tohid Sardarmehni and Mohammad Rasoul Narimani
276	FedGuard-DC: Privacy-Preserving Federated Load Forecasting and Cyber-Attack Detection for Data-Center Loads in Transmission Systems	Md Kibria Saroare and Md Rubel Ahmed
290	Impact of Communication-Network Uncertainty on the Economic Consequences of Power System FDIA	Ruocheng Yin, Yuxuan Du and Qiwei Zhang
312	Severity-Aware Personalized Federated Learning for False Data Injection Attack Detection in Distribution Systems	Mahmuda Akter and Zhifang Wang

Poster Sessions

The poster sequence from the source workbook is divided evenly across the two scheduled sessions.

Poster Session A | Monday, October 12, 2026 | 7:15–8:00 p.m.

Poster #	Paper ID	Paper Title	Authors
1	8	Time-scale separation for an Integrated Power system: A Geometric perspective	Parthsarathi Goyanka, Azaroddin Sayyed, Sunny Kumar, Madhavi Parimi and Sushama Wagh
2	9	Short-Term Load Forecasting and Anomaly Detection in Smart Buildings	Rayyan Petkar, Uday Suryawanshi, Adil Sheikh, Deepak Tiwari, Sudhir Bhil, Sunny Kumar and Sushma Wagh
3	10	Transmission Line Ratings in the United States: Regulatory Evolution and Implementation under FERC Order No. 881 - A Review	Sandra Canas, Roy McCann, Mojtaba Ahanch and Mustafa Mhawesh
4	12	Online Reactive Power Control Strategy for IBR-dominated Power Grids using Synchrophasors	Marshal Ruzvidzo, Saugat Ghimire and Vaithianathan'Mani' Venkatasubramanian
5	20	Evaluation of Cyberattack Impacts on DLMP Driven Energy Arbitrage in Distributed Mini-BESS	Anurag Nagpure and Chee-Wooi Ten
6	22	Phasor-Domain Power Hardware-in-the-Loop Framework for Analyzing IBR Dominated Power Systems	Pratosh Patankar, Dhiraj Khadka, Aaqib Manzoor, Zakir Rather and Suryanarayana Doolla
7	25	Edge Deployable Measurement Recovery and Dynamic State Estimation Framework for Robust Power Grid Protection	Shibo Zhou, Tianqi Hong, Zheng Yan, He Yang, Qiong Wu and Ming Yi
8	27	Improving Microgrid Reliability Using a Hybrid N-BEATS-XGBoost Model for Short-Term Load Forecasting	Thanh Bui, Hieu Le, Vinh Nguyen, Ninh Nguyen and Huong Pham
9	28	A Survey of FPGA-in-the-Loop Validation Methodologies for Power System Applications	Ojasvi Sonone, Atharva Dhande, Aryan Padalkar, Prajwal Joshi, Amey Chavekar and Sunny Kumar
10	30	Efficiency of Residential Standalone Solar-Powered Systems	Dean Aquino and Henry Louie
11	31	Near Real-Time FPGA in the Loop Modelling of Three Stage Inverter	Ojasvi Sonone, Aryan Padalkar, Atharva Dhande, Amey Chavekar, Sunny Kumar, Sudhir Bhil and Sushama Wagh
12	33	Power Loss Reduction in AC Networks by BESS Operating with Renewable Energy Time-Shift	Andrea Arroyo, Johan R. Granados, Luis M. Castro and Rubén Tapia-Olvera
13	34	Traveling Wave Differential Protection in Underground Cables: Challenges Posed by Crossbonding and Sheath Grounding	Adrian W. Diaz Sarmiento, Jaimis Leon Colqui, Romulo Goncalves Bainy, Jose Pissolato Filho, Flavio Bezerra Costa and Brian Johnson
14	36	Grid-Forming Inverter using Dual Virtual Loop Based Current and Voltage Reference Limiting Strategy	Shipra Tiwari, Flavio Costa and Vinicius Lacerda
15	40	A Data-Driven Framework for Season-Specific Load Uncertainty Characterization for UCED-Oriented Applications	Syed Mahboob Ul Hassan and Jianhua Zhang

Poster #	Paper ID	Paper Title	Authors
16	44	Extreme-Aware Probabilistic Short-Term Electricity Load Forecasting Using Quantile Transformer Networks	Sajib Debnath, Md. Uzzal Mia, Md Abubakkar and Arindam Kishor Biswas
17	49	Bias-Corrected MPC for Real-Time Volt/VAR Control in Active Distribution Networks	Naihao Shi, Hongyi Li, Zhaoyu Wang, Sheroze Liaquat, Arun Nair, Aravind Ingalalli and Dmitry Ishchenko
18	50	Optimal Distribution-Level Dispatch Under Supply Shortages with Service-Time and Unmet Demand Penalties	Akinwale Akintaro, Peter Idowu, Md Habib Ullah, Joseph Jegede and Mohammadreza Mirjafari
19	51	Inertia Estimation and Frequency Stability Analysis of a Multi-Area Power System	Mustafa Mhawesh, Abbas Jammali, Muthanna Al-Sarray, Sandra Canas, Mojtaba Ahanch and Roy McCann
20	57	System-Level Impacts of Flexible Data Center Load Scheduling on Cost, Emissions, and Transmission Congestion	Akibul Hasan Mazumder and Yuanrui Sang
21	59	A Blockchain Architecture for High Impedance Fault Detection in Cyber-Physical Power System	Hany Abdelsalam, Abdelrahman Eldosouky, Anurag Srivastava and Solmaz Nazaralizadeh
22	60	GCN-Based Fault Classification in Distribution Networks with Limited PMU Measurements	Mohammadreza Mirjafari, Peter Idowu, Md Habib Ullah and Akinwale Stephen Akintaro
23	62	Online Deep Neural Network for Adaptive AC Optimal Power Flow in Interconnected Microgrids	Abinash Giri and Javad Khazaei
24	65	Data-Centric Optimal Control of Submarine Microgrids using Willems' Fundamental Lemma	Stan Serbanica and Javad Khazaei
25	66	A Two-Stage Supply-Constrained Optimization for Distribution Transformer Replacement Planning	Bishal Rijal and Xin Fang
26	68	Lost Opportunity Costs Under Ramp Stress: A Comparison of Ramp-Product Dispatch and Look-Ahead Economic Dispatch	Aidan Looney, Qian Zhang and Le Xie
27	72	Diffusion-Manifold Hankel DMD for Data-Driven System Identification in Power Grids	Alma Guadalupe Ortega Gonzalez and Arturo Román Messina
28	75	Inertia-Aware Planning of Grid-Forming Energy Storage and Firm Capacity under Thermal Retirement	Buxin She, Honglin Li, Guangxu Feng and Qiwei Zhang
29	76	Approximate Nonlinear Model Predictive Control via Imitation Learning for Inverter-Based Marine Energy Microgrids	Daniela Villacres, Javad Khazaei, Arindam Banerjee and Farrah Moazeni
30	83	A Robust and Intelligent Event Detection Tool for the Brazilian Interconnected Power System	Gabriel V. de S. Lopes, Daniel Dotta, Diego Issicaba and Mario R. Arrieta Paternina
31	87	Reinforcement Learning-Based Pricing and Operation for Hybrid Electric and Hydrogen Vehicle Stations	Lowell Welburn, Yang Chen, Xudong Wang and Abhilasha Saroj
32	88	Census Tract-Level Power Outage Prediction and Sensitivity Analysis During Extreme Events	Antar Kumar Biswas and Masoud Honarvar Nazari
33	92	Assessment of Topology-Specific DNN-Based Contingency Analysis for Power-Security Evaluation in Large-Scale Electrical Grids	Adam King, Santiago Grijalva and Rehan Nawaz

Poster #	Paper ID	Paper Title	Authors
34	93	Quantifying the Cost of Delayed Grid Energization (CoDE) for AI Data Centers	Honglin Li and Buxin She
35	95	Energy Storage Sizing Optimization for Island Power Systems considering Flexible Operation	Adarsha Chalise, Yuxin Deng, Xin Fang and Jin Tan
36	98	Resilient Virtual Power Plant Aggregation via Deep Learning	Jason Buranich
37	102	Statistical Analysis of Inter-Area Oscillation Events in the United States Western Interconnection	Hao Fu, Wenpeng Yu, Mohammed M. Olama, Ajay Pratap Yadav, Ali Riza Ekti, Nils M. Stenvig and Yilu Liu
38	105	Design and Performance Evaluation of a Tubular Linear Synchronous Generator for Tidal Energy Conversion	Muhammad Faraz Imam, Dwaipayan Barman, Vikram Roy Chowdhury and Anouar Belahcen
39	107	Onboard-Charger-Based Vehicle-to-Vehicle Emergency Charging System	Tuna Bilben and Jae-Do Park
40	110	Comparison of Flyback Microinverter Topologies for Residential PV Systems	S M Imrat Rahman, Ali Arzani and Satish M. Mahajan
41	114	Fragility-Based Analysis for Joint Transmission and Generation Outages Under Hurricane Hazards	Maedeh Mahzarnia, Farnaz Safdarian, Jonathan Snodgrass and Thomas Overbye
42	115	Supervised Fine-Tuned Transformers for Symbolic Discovery of Power System Dynamics	Lu Sun and Nanpeng Yu
43	116	Modeling and Analysis of an Inverter-Based Microgrid at the University of Illinois	Samyuktaa Rajnarayanan, Rina Manxhuka, T.G. Roberts, Alejandro Dominguez-Garcia and Megan O'Connell
44	118	Toward Uncovering the Effects of Fast-formation Protocols on Lithium-ion Battery Fast-charging Capabilities	Duncan Tyree, Md Rahman and Xuan Zhou
45	122	Quantum-Inspired Adaptive-PSO for Optimal Dispatch in Active Distribution Network	Srijan Khadka, Ali Arzani and Satish Mahajan
46	126	A Locally-Hosted Agentic LLM Framework for Resilience-Focused Power System Planning	Eric Keller, Jonathan Snodgrass and Thomas Overbye
47	133	Operational Surrogates Embedded into Capacity Expansion Planning Problems	Zachary Kilwein, Warren L. Davis IV, J. Kyle Skolfield and Thushara Gunda
48	135	Minimum-Loss Current Scheduling and Component-Wise Loss Allocation for Unbalanced Converter-Dominated Feeders: A General Power Theory Approach	Adeyinka Victor Adebayo, Azeez O. Olasoji and K. Hussein Adebayo
49	141	PowerAgentBench-SS: A Benchmark for Agentic AI in Power System Steady-State Studies	Costas Mylonas, Magda Foti, Andrea Pomarico, Matheus Duarte, Qian Zhang and Emmanouel Varvarigos
50	142	Entropy-Enhanced Fault Classification in Space-Based Power Systems	Md Khairul Islam, Md Zahirul Khan, Farzad Ferdowsi and Erez Aghion
51	146	Virtual Overcurrent Protection Scheme for Distribution Systems Using GridAPPS-D	Gracie Ann Dilworth, Shadi Alshagarin and Bruce Mork
52	155	Analysis and Sequence Propagation of Faults-Induced Power Quality Phenomenon in Multilevel Distribution System	Shahid Khan, Hafiz Nazir, Abdul Haseeb and Bo Liu
53	160	Dynamic Active and Reactive Power Control of Modular Multi-Level Converter based E-STATCOM to Support High Penetration of Variable Renewable Energy Sources	Zakaria Khalil and Brian Johnson
54	161	Topology-Aware Propagation-Based Assessment of Extreme-Weather Impacts on Distribution System Resilience	Junjie Yin, Xinyu Feng, Jian Han and Fangxing Li

Poster #	Paper ID	Paper Title	Authors
55	164	Forecasting-Based Residual Detection and Corrective Pitch-Control Mitigation of Rotor-Speed FDIA in Wind Turbine Systems	Yared Brhane Tadesse, Bibek Dhakal, Eliza Delgado, Md Shahin Munsi, Jatendar Kumar, Manohar Chamana, Olatunji Adeyanju and Stephen Bayne
56	176	Comparative Analysis of Grid-Forming and Grid-Following Inverters for Data Center Microgrid Resilience Under Weak-Grid Conditions	Felipe de Souza E Silva, Pedro Eisenkraemer, Olatunji Adeyanju, Manohar Chamana, David Graves, Stephen Bayne and Argenis Bilbao
57	179	Physics-Informed LSTM for Snowmelt-Driven Streamflow Forecasting to Support Hydropower Grid Integration	Lakshmi Siri Appalaneni, Yuwei Zong, Mucun Sun and Yanwen Xu
58	182	A Stochastic Security-Constrained Multi-Interval Generation Expansion Planning Model with Novel Convex Voltage Stability Constraints	Abdelwahab Bebars, Hanif Livani and Mahdi Mehrtash
59	183	Evaluating the Impact of Vehicle-to-Grid Participation on Heavy-Duty Electric Vehicle Battery Degradation	Jad El Aouji, Muhammad Faisal Baig and Yuanrui Sang
60	185	Asynchronous Utility Interfacing and Peak Shaving of Microgrids Using Back-to-Back Converters and Energy Storage Systems	Inhwi Hwang and Marija Ilic
61	195	Hybrid Deep Neural Networks for Short-Term Solar Irradiance Forecasting	Khanh Giap, Hieu Nguyen and Nga Nguyen
62	196	Clustering-Decomposed Directional Overcurrent Relay Coordination: An Optimal Method and IEEE Benchmark Validation	Mubashar Javed, Markus Wagner, Laiq Akhtar and Muhammad Numan Akhtar
63	199	Scalable Multi-Model Power Outage Risk Index for Short-Term Forecasting and Decision Support	Sunil Subedi, Narayan Bhusal, Sangkeun Matthew Lee and Supriya Chinthavali

Poster Session B | Tuesday, October 13, 2026 | 9:00–9:45 a.m. (with Coffee Break)

Poster #	Paper ID	Paper Title	Authors
64	201	Quantum Machine Learning for Localizing Stealthy False Data Injection Attacks in Power Grids	Muhammad Mahad Khaliq, Srikar Alla, Varshith Kumar P. Pulluri, Ali Shiri Sichani, Mert Korkali, Hadi Akbarpour and Chi-Ren Shyu
65	202	Data Driven Parareal Simulation of Power Systems	Yashaswini Inala and Amarsagar Reddy Ramapuram Matavalam
66	203	Fuzzy Substation Name Matching using LLMs: A Comparison with Classical String Metrics	Siming Guo
67	208	Design of an Optimal Controller for an Automatic Voltage Regulator	Anusree Mandali and Lili Dong
68	209	Cyber Physical Impact of Load Manipulation on DERMS Driven Distribution System Operations	Sakshi Sharma, Nazmus Saqib, Souradeep Bhattacharya and Manimaran Govindarasu
69	210	Measurement-Based Modeling of AI Data-Center GPU Power Fluctuations for Power System Dynamic Studies	Akash Makhija, Nagham Mousa, Alaa Zewila, Azeem Affan and Meng Wu
70	215	Models of Electric Vehicle Charging Demands in Distribution Grid Operation: A Review	Dipayan Sarkar and Qifeng Li
71	216	Distribution Feeder reduction for real-time high fidelity modeling	Mohammad Khalid and Maximiliano Ferrari
72	219	Transient-Aware Dynamic Modeling and Response Shaping of Grid-Following Inverters With Experimental Validation	Hanadi Haroun, Mohanad Elsayed, Mahmoud Kabalan and Thomas Bozada
73	224	Inter-Area Oscillation Damping in Data-Center-Integrated Power Systems	Ahmed Alfatlawi and Masoud Honarvar Nazari
74	226	Attention-enhanced Mixture-of-Experts with adaptive temporal and graph-filtering operators for joint FDIA detection and localization	Ruslan Abdulin and Mohammad Rasoul Narimani
75	228	The Price of a Cycle: A Phasor -vs- Sampled-Value Comparison for Streaming Fault Classification on the IEEE 9-Bus System	Emad Abukhousa, Khaled Muhmmmed Nor Muhmmmed, Abdulaziz Qwbaiban, Saman Zonouz and A.P. Sakis Meliopoulos
76	229	Automated Conversion of Electrical One-Line Diagrams into Power System Simulation Models Using Vision-Language Models	Abram Tafoya, Kendall Klestinski, Ryan Stanicic and Josue Campos Do Prado
77	232	Benchmarking Classical Machine Learning Models for Short-Circuit Fault Detection and Classification in Three-Phase Power Grids	Olamide Oshinuga, Lin Gong and Lijun Qian
78	233	Online SCF-Based Event Start Time Detection Algorithm for Power Grid Signals	Umarbek Guvercin, Ozgur Alaca, Ali Riza Ekti and Seddik Djouadi
79	234	Benchmarking Quantum Optimization for Microgrid Energy Dispatch	Jannatul Ferdous Shorna, Zhen Ni, Zebo Yang, Yufei Tang and Avijit Das
80	235	Resilient Power System State Estimation using a Temporal GCN with Graph Denoising (TGCN-GD)	Seyed Hamed Haghshenas, Sayedreza Hosseini and Mia Naeini
81	237	A Field-Validated RTDS CHIL Framework for Secondary Control of Grid-Forming ESS Inverters	Ahmed S. Elnozahy, Mohanad Elsayed, Madhukar Rao Airineni, Mohamed M. Zakaria Moustafa, Mahmoud Kabalan and Thomas Bozada
82	239	Implementation and Validation of a Concurrent Real-Time C-HIL Digital Twin for a Real-World Grid-Connected Microgrid	Mohanad Elsayed, Md Jamal Ahmed Shohan, Renuka Loka, Mahmoud Kabalan, Mohamed M. Zakaria Moustafa and Thomas Bozada

Poster #	Paper ID	Paper Title	Authors
83	242	Frequency-Security-Aware Real-Time Economic Dispatch with Data Center UPS Flexibility for Inertia and Primary Frequency Response Services	Shengyi Wang and Liang Du
84	245	Entropy-Production Spectra as Aggregate Early-Warning Indicators of Oscillatory Instability in Power Systems	Kiamran Radjabli
85	249	Tertiary Control Framework for Microgrid Energy Management with Forecasting and Peak Shaving Integration	Akriti Acharya, Erkan Dursun, Md Jamal Ahmed Shohan, Mohamed M. Zakaria Moustafa, Mahmoud Kabalan and Thomas Bozada
86	251	MIL-STD-3071 Ready Microgrid Controller: A Study on the Impact and Effect of DDS-Native Closed Loop Control	Colin Nilsen, Christi Watson, Mohanad Elsayed and Mahmoud Kabalan
87	254	Semantic Analysis of Prompt-Directed Bidding in Electricity Markets	Samuel Chung, Shen Wang and Le Xie
88	256	Topology-Driven Electrical Zone Decomposition of Large-Scale Power Networks	Mohamed Amine Garrach, Mouna Jebali, Mohammed Olama and Marouane Salhi
89	258	Temporal Fusion Transformer for Interpretable Multi-Region Electricity Load Forecasting with Uncertainty Calibration	Yassine Chaouachi, Mohammed Olama and Marouane Salhi
90	259	Real-time Controller Testbed for the Utility Scale Microgrids	Deepika Chhetija, Mohammad Khalid and Maximiliano Ferrari
91	260	Robust H^∞ Controller Design for Replay Attack Mitigation in DER-Based Cyber-Physical Systems	Md Shahin Munsif, Leandro De Jesus Bastias Onate, Agboola B. Alao, Yared Brhane Tadese, Manohar Chamana, Olatunji Adeyanju, Stephen Bayne and Bharath Kumar Dasari
92	262	CHIL Implementation and Real-World Validation of an Adaptive PI PCC Power Control for a Grid-Connected Microgrid	Md Mahedi Habib Chowdhury, Rakesh Shamrao Patekar, Mohanad Elsayed, Mahmoud Kabalan and Thomas Bozada
93	264	Experimental Validation of Real-Time Models of GFM-GFL Sources in Islanded Microgrid	Salaheldin Ahmed, Ahsan Iqbal, Mahmoud Kabalan and Thomas Bozada
94	269	GLO-tuned 3DOF-PI λ DD2 Controller for Enhanced Frequency Regulation in Airport Microgrids	Muhammad Ragab, Poria Fajri and Hanif Livani
95	272	Sensitivity-Exchange Dual Decomposition for Distributionally Robust Multi-Area AC Optimal Power Flow	Jewel Joy and Lin Gong
96	273	Reduced-Rare-Earth IPMSM Design With Performance Validation by Surrogate Screening and Phase-Advance Retuning	Mohammad Islam and Junjian Qi
97	274	Large Language Model-Generated MIP Warm Starts for Security-Constrained Unit Commitment	Ehsanul Karim, Lin Gong, Xiangfang Li and Lijun Qian
98	275	BESS Placement for Congestion Reduction in a Network-Constrained Power System	David Okpo, Jose Betancourt and Cunzhi Zhao
99	280	Robustness of Seismic Grid Retrofit Planning to Spatial Correlation and Tail-Risk Modeling	Veronica Diaz Pacheco, Cody Newlun, Samuel Ojetola, Alejandro Owen Aquino and Kenneth Brown
100	281	Graph-based Controlled Islanding Schemes for Power Grid Emergency Control	Yaosuo Xue, Yonghao Gui and Hong Wang
101	285	Examining Patterns in Data Center Power Usage	Rohan Susarla, Matthew D. Sinclair, Shivaram Venkataraman, Line Roald and Bernard Lesieutre

Poster #	Paper ID	Paper Title	Authors
102	287	Economic Impact Assessment of Denial-of-Service and Time-Delay Attacks on Advanced Metering Infrastructure	Lais Krohl, Saurav Basnet and Ioannis Zografopoulos
103	292	Optimal Power Flow with Linearized AC Constraints Considering Active and Reactive Power Generation	Nestor Gonzalez Cabrera
104	295	Efficient Python Implementation of a Differential Transformation Method for Large-Scale Power System Simulation	Tingwei Chen, Kaiyang Huang, Kai Sun, Dan Moldovan and Bo Yang
105	298	A Cyber-Physical Influence Matrix for Identifying Critical Measurements in Graph-Based Distribution State Estimation under False Data Injection Attacks	Sayemul Islam, Mucun Sun, Fazlur Rahman Bin Karim, Jie Zhang and Mohammad Ashiqur Rahman
106	301	Scalability Analysis of TMS-Ready Communication Converters for Legacy Relay Devices with DNP3	William Schoon, Christi Watson and Mahmoud Kabalan
107	306	Real-World Validation of RTDS-Based Islanded Average-Value Grid-Forming Inverter	Madhukar Rao Airineni, Ahmed S. Elnozahy, Mahmoud Kabalan, Mohamed M. Zakaria Moustafa, Tate Bosman, Rakesh Shamrao Patekar and Thomas Bozada
108	307	Alpha-Weighted Fusion Based Approach for Event-Centered Power Outage Severity Prediction	Daniel Mendoza, Travis Newbolt and Paras Mandal
109	308	Reinforcement Learning versus Optimization for Optimal Transmission Switching: A Comparative Study	Israel Abiala, Yuanrui Sang and Rachel Gerdes
110	314	Fragility Assessment of Power Grids under Variable Hyperscale AI Data Center Penetration and Localized Demand Stress	Saksham Tiwari, Arman Moradpour and Sung-Yeul Park
111	315	NLMS-Based PMU Filtering for Electromechanical Mode Estimation	Andres Intriago, Gabriel Intriago, Gabriel Mejia-Ruiz and Mohammed Benidris
112	318	Large Language Model Assisted Operational Monitoring for Battery Energy Storage System Integrated Power Distribution Networks	Azmeer Akhtar, Md Fazley Rafy and Anurag K. Srivastava
113	319	TwinGridShield: Consequence-Aware Runtime Authorization for LLM Grid-Agent Actions	Md Fazley Rafy
114	320	Structured Communications for DERs Using Enhanced DNP3 Models and Priority Polling	James Momoh, Oshione Adams, Kumaraguru Prabakar and Benjamin Kroposki
115	321	Severity Classification of Stator Faults in Wind Turbine SCIGs Using Cyclic Cepstral Coefficients of Current	Miguel Ferreira, Luiz Felipe Silveira, Luiz Gonzaga Silveira, Flávio Costa and Agostinho Brito
116	328	Probabilistic ML for Fault Diagnosis and Remaining Useful Life Estimation of Power Transformers	Luciano Paniagua and Paras Mandal
117	330	Dynamic Event-Triggered Secondary Control for Voltage Restoration and Current Sharing in Islanded DC Microgrids	Sai Teja Jarabala, Shivam Chaturvedi, Gajendra Singh Chawda, Guilherme Vieira Holtweg, Mengqi Wang and Wencong Su
118	336	A Stackelberg-Bayesian Capacity-Market Game of Carbon Regulation and Second-Life Battery Investment under AI Data-Center Load Growth	Rouzbeh Haghighi, Ali Hassan, Sina Mohammadi, Marcus Chen I Wada and Wencong Su

Poster #	Paper ID	Paper Title	Authors
119	337	Federated Learning for EV Charging Prediction: Accuracy, Bandwidth, and Correlated Quantization	Ruth Hammond
120	338	Multi-Phase Resilience-Constrained Stochastic Scheduling of Renewable-Based Microgrids Under High-Impact Low-Probability Events	Ram Pandey and Nga Nguyen
121	342	Power Quality Analysis of AI Data Centers Under Dynamic Workloads	Ridvan Dogan, Gordon Elgin North Piegan and Liling Huang
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