

<b>(AMPS) Big Data Analytics</b>
Frontiers of Big Data Analytics in the Operations and Maintenance of Power Distribution Systems
Big Data Analytics for Power System Economy, Reliability and Security
Data Analytic Tools for Dynamic Security Assessment of Bulk Power Systems
<b>(AMPS) Computer Analytical Methods</b>
Thinking Outside the “Black Box” — Analytical Foundations of Power System Research
Current Practices and Future Challenges to Power Grid Resilience
High-Performance Simulation of Power System in Heterogeneous Parallel Computing Environments
Cybersecurity and Resiliency for the Power Grid Leveraging Data-driven Models and Analytics
Cyber-Physical Situational Awareness for the Power Grid – Opportunities and Challenges
<b>(AMPS) Distribution System Analysis</b>
Power Systems Load Modeling: Opportunities, Challenges and Methodologies
Optimization Methods for Unbalanced Power Distribution Systems
Distribution System State Estimation Applications and Implementation Strategy
Transient Modeling and Analysis of Distribution Systems
<b>(AMPS) Intelligent Systems</b>
Market-based and Transactive Algorithms for Distribution Network Management in Interaction with Transmission-level Operations
Intelligent Approaches for IoT Applications in Smartgrids
Emerging heuristic optimization algorithms for expansion planning and flexibility optimization in sustainable electrical power systems
Robust Optimization with Modern Heuristics for Power System Operation and Planning
Decentralised and Intelligent Approaches to Power System Operation and Economics
<b>(AMPS) Reliability and Risk Analysis</b>
Resilience Metrics and Evaluation Methods for Power Systems
Asset Management Strategies Using Condition Monitoring for Maintenance Planning in Operation State
Industrial Applications of Composite System Reliability Assessment Challenges and Prospects
New Challenges and Opportunities for Addressing the Impacts of Uncertainty of Deepening Renewable Penetration Power Systems
Reliability of Cyber-Physical Power System Test Systems and Standard Enhancement
Emerging Heuristic Optimization Algorithms for Expansion Planning and Flexibility Optimization in Sustainable Electrical Power Systems
(AMPS) Transient Analysis and Simulation
Modeling and Control of Power Electronic Based Power Systems
Wind Generation SSO: Events, Modeling and Studies
Advances in Power System Studies for Geomagnetic Disturbance Vulnerability Assessment
Advances in the Modelling of Geomagnetic Disturbances
<b>Administrative Panel Sessions</b>
Leveraging data to build models for future planning and resiliency sponsored by PES Women in Power
Fault Current Contribution from Inverter Based Resources
Impacts of Inverter Based Resources Connected to the Bulk Power System
Women In Power Panel Session
2019 IEEE Blockchain in Energy Workshop.
<b>Electric Machinery</b>
Hydro and Ocean energy – Marine Hydrokinetic
Synchronous Condenser Application and Renewables
High Renewable Penetration: Grid Stability Challenges and Grid-Forming Advances
Advanced Topics on Machines and Drives in the Memorial of Professor M. Azizur Rahman
Condition Monitoring and Application of Big Data and IoT for Electrical Machines and Motor Drives
Super Conducting Machines and Advanced Topics on Machine and Drives II
<b>Energy Development and Power Generation</b>
High Renewable Energy Penetrations within Isolated and Remote Area Power Systems
Microgrid Tools: Design, Optimization, Business Case and Resiliency
The Impact of Climatic Events on the Operation and Planning Policies of Distribution Systems with High Solar Penetration
Green the Algorithm, Green the Grid
Modernizing renewable generation support and market policies: from niche to normal
Ultra-High Penetration of Renewable Energy Integration

International Practices in Global Internet
International Practices Used in Smart Grid for Smart City Application
The new HVDC Grid and related activities in Europe
Providing Flexibility in Power Systems with high share Variable RES – a European Perspective
Planning and operation of future active distribution grids
Flexible Energy Supply beyond Conventional Borders
European electricity projects
The challenges of distribution network regulation in the transition towards a low-carbon future in Latin America
International Practices and Models in Network Planning Under Uncertainty: Flexibility, Reliability and Resilience
Smart Grid Technology
Asian and Australasian Experience
Ultra-High Penetration of Renewable Energy Integration
<b>Energy Storage &amp; Stationary Battery</b>
Distributed energy storage system: from design to integration
Distributed energy storage system – safety and fire protection methods and standards
<b>Local Organizing Committee</b>
Allies in Energy – Secrets of highly successful people in energy
Impact of inverter-based Photovoltaic Generation on Power Quality on T&D network in the Southeastern Region of the US
Concept of “Smart Cities” in the Southeastern Region of the US
Microgrids & Smart Neighborhoods in the Southeastern Region of the US
Protection challenges with increased penetration of inverter-based generation in the Southeastern Region of the US
Power Restoration after Hurricanes in the Southeastern Region of the US
<b>PES Super Session</b>
Impact of High Penetration of Renewable Resources
Risk-Based System Planning and Operation
Late Breaking News
Resiliency
Storage
<b>Power &amp; Energy Education</b>
Integrating Resiliency into Operational Practice
Research Challenges for Protection of Power Systems with Massive Amounts of Renewable Energy
Research and Educational Experiences of NSF CAREER Awardees in Power Systems
Enhancing Cyber-Physical Resilience of Smart Grid: Design, Operation, and Control
New Generation Laboratories to Enable Smart Grid Education
Paths to Success in Academic Careers in Power & Energy
New Advances in Interdisciplinary Research: Bridging Operations Research and PES
<b>Power System Dynamic Performance</b>
PSDP Experiences and insights on the use of the generic Distributed Energy Resource model (DER) in transient stability simulations
PSDP Local Frequency Measurements for System Control
PSDP Microgrid Stability Definitions, Analysis, and Modeling
PSDP Handling Uncertainties and Use of Equivalents in DSA
PSDP System-wide Dynamic Model Validation
<b>Power System Instrumentation and Measurements</b>
Medium Voltage Sensor and Intelligent Electronic Device Systems in the Era of Smart Grid
Taking the Mysteries out of High-Voltage Testing: A Practical Implementation Guide for Users of IEEE Standard 4
<b>Power Systems Relaying &amp; Control</b>
Modeling of converter-interfaced renewable sources for short circuit studies
<b>PSOPE – Bulk Power System Operations Subcommittee</b>
Variable and Distributed Energy Resources Integration and Provision of Flexibility through Energy Systems Integration
Harnessing Grid Services from DERs using DERMS solutions
Dynamic State Estimation for Power System Monitoring, Protection and Control--Paving the Way for A More Resilient Grid
Challenges and solutions for Synchrophasor Data Quality in Power System Operation
Deep Learning for Power System Applications
The role of long-duration storage for supporting the grid

Next-Generation EMS – A Global Perspective
Implementation of Remedial Action Schemes in Real-Time Contingency Analysis in Control Centers
Integrated Resource Planning in California
Transmission Planning for Storage: Size and Location
Addressing Challenges of Uncertainty Quantification and Data Analysis for Probabilistic Grid Planning
Energy Internet and Energy System Integration: Applications and Experiences
International Practices in Power System Planning: Processes, Methods and Techniques
Probabilistic Energy Forecasting
<b>PSOPE – Distribution System Operation and Planning Subcommittee</b>
Enabling Advanced Grid Operations with DER coordination
Aggregated Distributed Energy Resources: Impacts on Transmission and Distribution Planning and Operations
Incorporating Non-Wires Alternatives into the Planning Process
Reliability, resilience & risk: the new 3 R's of the industry
Information System Developments to Enable Enhanced TSO-DSO Interaction
<b>PSOPE – Power System Economics Subcommittee</b>
Business Cases for Grid-Connected Energy Storage Systems
The Economics of Battery Storage under Different Market Structures
Price Formation in Wholesale Electricity Markets
Distributed Demand Response Dilemma: Defect or Engage
Harnessing the Flexibility of Behind-the-Meter Energy Resources
Ensuring Grid Resilience through Policy, Standards and Market Constructs
Utility of the Future Platform and Functions
Coupling of Electric Power and Natural Gas Systems
<b>PSOPE – Technologies &amp; Innovation Subcommittee</b>
Benefits of Supergrid with HVDC Overlay
Applications of Optimization Algorithms and Computational Techniques in Large-Scale Electricity Markets: Success and Challenges
Real-Time Computing Technologies and Potentials
Challenges and Enabling Technologies for Wide Area Protection of Future Power Systems
Data-Driven Approaches for Mitigation of Natural Disasters Impacts on Power Grids
Grid Operation and Planning with High Penetration of Distributed Energy Resources
Practices on Natural Disaster Mitigation
<b>Smart Buildings, Loads &amp; Customer Systems</b>
DER Interoperability Roadmap – Industry Experiences
Multi-Energy Systems Architecture
Advanced Grid Architectures to support scalable DER integration
Emerging applications and benefits for blockchains and smart contracts for the smart grid
Popularizing Smart Building Technology toward Future Smart Grid
Smart Meter Data Analytics in Retail Market
Load modeling and simulation in smart grids
<b>Transmission and Distribution</b>
Quality of Performance Parameters: Definitions, Measurements, Standards and Analytics
Stray and Contact Voltage Case Studies
Harmonic modeling and power quality assessment issues for isolatable systems
Aggregate modelling techniques for harmonic studies in distribution networks
Automation of a distribution line device: What, Why, How, When, and Where
Enhanced IEEE 1782 Outage Subcategories for Reliability Benchmarking and Reporting
Improving Grid Resilience Using HVDC
Recent HVDC and FACTS refurbishments, installations, and special controls and economic choices
HVDC Transmission and FACTS Fundamentals
Experience in Utility Microgrids - Research, Integration and Testing
Vision for Next Generation Distribution Automation
Integration of Electric Transportation in Modern Distribution Systems: Challenges and Solutions
Interactions between transmission system connected converters
<b>Wind Power Coordinating</b>

Variable and Distributed Energy Resources Integration and Provision of Flexibility through Energy Systems Integration: Part 2 - Bulk Power System Planning

Transmission Infrastructure Development for High Levels of Renewable Penetration

100% Renewables