HELMUT SCHMIDT UNIVERSITÄT
Universität der Bundeswehr Hamburg

IEEE

NEIS 2018

Conference on Sustainable Energy Supply and Energy Storage Systems

Program

Hamburg, September 20th – 21st, 2018

Helmut-Schmidt-University
University of the Bundeswehr Hamburg

Holstenhofweg 85, 22043 Hamburg

Thursday, September 20th 2018	
08:00	**Registration**
09:00 - 10:15	**Welcome Greetings and Keynote Presentations**
	Opening Presentation (Prof. D. Schulz, Electrical Power Systems, Helmut Schmidt University)
	Corrective Control: Stability Analysis of Unified Controller Combining Frequency Control and Congestion Management (Prof. J. W. Bialek, Skolkovo Institute of Science and Technology, Moscow, Russia)
	Dynamic and Operational Challenges and Needs in future Power Systems (Dr. W. Winter, TenneT TSO GmbH, Germany)
Coffee break	
Oral Presentation Session 1: Grid Support and Grid Impedance (Session Chair: Dr.-Ing. M. Alpen)	
10:30 - 11:30	**Analysis of Voltage Support during Fault Ride Through of Converter-Interfaced Distributed Generation Considering the Grid Impedance** (M. Coumont, Technische Universität Darmstadt, Germany)
	Power Re-Dispatch Reduction with Nodal Voltage Angle Control in Storage Power Plants (H. Weber, University of Rostock, Germany)
	Determination of the Time- and Frequency-Dependent Grid Impedance on the 110 kV High-Voltage Level – Development and System Design of Novel Measurement Container (M. Jordan, Helmut Schmidt University, Germany)
11:30 Lunch	
Oral Presentation Session 2: High Voltage DC and Grid Failures in DC and AC Grids (Session Chair: Prof. J. Bialek, Ph.D.)	
12:40 - 14:00	**Optimization of the operation of an HVDC transmission system by an overlaid Master Control** (T. Stoetzel, Ruhr University Bochum, Germany)
	Active Power Planning for Embedded HVDC-Systems – Objectives and Solvers (F. Linke, Technische Universität Ilmenau, Germany)
	Identification of Relevant Fault Types for Grid Planning of DC Distribution Grids (R. Bleilevens, RWTH Aachen University, Germany)
	Analysis of Temporary Overvoltages in AC-grids (F. Schork, DEHN + SÖHNE GmbH, Germany)
Coffee Break & Poster-Session 1	
Oral Presentation Session 3: Microgrids (Session Chair: Prof. Dr.-Ing. C. Becker)	
14:50 - 15:50	**Renewable, Cellular Energy Clusters Providing Ancillary Services** (C. Pieper, Technische Universität Dresden, Germany)
	Experimental Short-Circuit Testing of Grid-Forming Inverters in Microgrid and Interconnected Mode (D. Duckwitz, Fraunhofer IEE, Germany)
	Investigation into Dynamic and Static Frequency and Voltage Stability of Embedded Island Grids using Battery-Hybrid-Systems (L. Wilkening, University of Technology Hamburg)
16:00	**Visit of modernized 110-kV-Station of Stromnetz Hamburg GmbH**
18:30	**Barbecue**
20:00	**Special Event**

Friday, September 21st 2018	
Oral Presentation Session 4: Black Start Units and Power Quality **(Session Chair: Prof. Dr.-Ing. T.T. Do)**	
09:00 - 10:00	**Methodology for the Evaluation of Existing Black Start Units and Optimization for Future Locations** (J. Birkelbach, TenneT TSO GmbH, Germany)
	Harmonic Current Measurements of Generation Units for Prediction of Harmonic Voltages based on Impedance Frequency Modelling (G. Kaatz, Helmut-Schmidt-University, Germany)
	Hybrid Transformers for Power Quality Enhancements in Distribution Grids – Comparison to Alternative Concepts (J. Burkard, ETH Zurich, Switzerland)
Coffee break & Poster-Session 2	
Oral Presentation Session 5: **Power Converter Control and Reactive Power Management** **(Session Chair: Prof. Dr.-Ing. V. Staudt)**	
11:00 - 12:00	**Impact of Power Converter Control on Transient Stability of Power Systems** (P. Winter, Hochschule Düsseldorf, Germany)
	Reactive Power Management of Distributed Generators for Selective Voltage Optimization in 110-kV-Subtransmission Grids (M. Kreutziger, Technische Universität Dresden, Germany)
	Technical and Economical Comparison of Reactive Power Provision with Variable Renewable Energy Power Plants and Compensation Systems (H. Köppe, Technische Universität Braunschweig, Germany)
Lunch	
Oral Presentation Session 6: Energy Storage and Battery Systems **(Session Chair: Prof. Dr.-Ing. H. Goebel)**	
13:15 - 14:15	**Autonomous versus coordinated control of residential energy storage systems – monitoring profit, battery aging, and system efficiency** (S. Englberger, Technical University of Munich, Germany)
	Lithium-Ion Battery Storage Design for Buffering Fast Charging Stations for Battery Electric Vehicles and Electric Buses (D. Kucevic, Technical University of Munich, Germany)
	A Simplified Methodology to Quickly Build a Degradation Prediction Model for Lithium-Ion Batteries (F. Alhaider, Vattenfall Europe Innovation GmbH, Germany)
14:15	**Farewell**

Poster-Session 1

14:00-14:50

Thursday, September 20th

Distributed State Estimation in Digitized Low-Voltage Networks
(T. Werner, Siemens AG, Germany)

Coil-Capacitor as a Basis for Creating Efficient Devices for Distribution Power Networks
(P. A. Butyrin, MPEI Moscow, Russia)

Performance Test of a Neural Network based State Estimation for Low Voltage Grids with Weak Input Data (M. Weisenstein, Technical University of Kaiserslautern, Germany)

Superordinate Control for Increasing Feed-in Capacity and Improving Power Quality in Low Voltage Distribution Grids (B. Maucher, Technical University of Munich, Germany)

Integration of smart grid control strategies in the green phase of the distribution grid traffic light concept (S. Pack, University of Wuppertal, Germany)

Influence of power system planning criteria on hosting capacity of distribution grids with high DER-penetration (C. Aigner, Technical University of Munich, Germany)

Optimized operation of energy storages for primary control reserve
(S. Balischewski, Otto-von-Guericke-University Magdeburg, Germany)

Simulating the impact of e-mobility charging infrastructure on urban low-voltage networks
(D. Echternacht, SPIE SAG GmbH, Germany)

Huntorf 2020 – Improvement of Flexibility and Efficiency of a Compressed Air Energy Storage Plant based on Synthetic Hydrogen (A.-K. Fries, TU Clausthal, Germany)

Mitigation of Voltage Sags and Swells by The Faraday Exchanger
(J. Gunda, Faraday Grid Ltd., UK)

Implementation of a High Efficiency SiC Inverter with Model-based Control
(E. Langnes, Fraunhofer ISIT, Hamburg, Germany)

Poster-Session 2

10:00-11:00

Friday, September 21st

Impact of different Charging Strategies on the Grid Expansion Needs of Distribution Grids
(L. Löhr, RWTH Aachen University, Germany)

Conception, Modelling Approach and Practical Implementation of a Hybrid Laboratory-Based Microgrid
(S. Resch, Friedrich-Alexander-University Erlangen-Nuremberg, Germany)

Specific Grid Charges for Controllable Loads in Smart Grids – A Proposal for a Reform of the Grid Charges in Germany (M. Zapf, University of Applied Science Coburg, Germany)

Load Profile Analysis on Public Charging Stations in the City of Hamburg
(D. Rusch, Stromnetz Hamburg GmbH, Germany)

Power System Benchmark Generation Methodology
(S. Meinecke, University of Kassel, Germany)

Grid Supported Charging Management with Uncertainty Analysis
(O. Pronobis, Technische Universität Braunschweig, Germany)

Investigation for a Secure and Cost-efficient Connection of Substations to the Public Network
(S. Hoffmann, Hochschule Ruhr West, Germany)

Impact of E-Mobility in different Low-Voltage Grids in 2030
(S. Čelan, Technische Universität Braunschweig, Germany)

Synthetic Load Profiles of Various Customer Types for Smart Grid Simulations
(P. Wiest, Universität Stuttgart, Germany)

Hybrids-Simulation using eMEGASIM and ePHASORSIM for Converter Dominated Distribution Grid
(T. Jiang, Technische Universität Ilmenau, Germany)

Investigation of technologies and parameters influencing the short-circuit behavior of low-voltage distribution networks (F. Grumm, Helmut Schmidt University, Germany)

Map for orientation:

This map is for your orientation during your stay at the NEIS Conference. The HSU Mensa will provide the lunch. The location of the barbecue and the special event is the Offizierheimgesellschaft (OHG). The OHG is not on the HSU campus. Therefore, you have to leave the HSU campus via the main entrance in order to get to the barbecue location on Thursday evening.