

# **2010 North American Power Symposium**

**(NAPS 2010)**

**Arlington, Texas, USA  
26-28 September 2010**



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# NAPS 2010 Technical Program

**Sunday September 26<sup>th</sup>, 2010**  
**Welcome and Registration**

**12:30 pm – 8:30 pm**

Venue: Nedderman Hall

**Registration**

**04:30 pm - 05:30 pm**

Venue: Planetarium

**Planetarium Visit**

**05:30 pm – 08:30 pm**

Venue: Nedderman Hall

**Job Fair**

**05:30 pm – 06:30 pm**

Venue: Nedderman Hall

Room 108

**PEEC Committee meeting**

**06:30 pm – 07:30 pm**

Venue: Nedderman Hall

Room 108

**NAPS Committee meeting**

**06:30 pm – 07:30 pm**

Venue: Nedderman Hall

**Welcome Dinner**

Monday September 27th, 2010  
Plenary & Opening

**Opening Ceremony**

Chair: *Dr. Wei-Jen Lee, Dr. R. Shoultz*

8:30 am – 9:45 am

Venue: Nedderman Hall, Room 100

**Opening Speech**

8:30 am – 8:35 am

**Dr. Wei-Jen Lee/Dr. Raymond Shoultz**

*Symposium Chair, The University of Texas at Arlington*

**Welcome remark**

8:35 am – 8:45 am

**Dr. Jon Bredow**

*Department Chair of Electrical Engineering, The University of Texas at Arlington*

**Keynote Speech**

8:45 am – 9:15 am

**Mr. John Dumas**

*Manager of Supply Integration and Grid Applications, ERCOT*

**Welcoming Speech**

9:15 am – 9:45 am

**Dr. Noel Schulz**

*IEEE, PES, President Elect*

**Mr. T. David Mills**

*IEEE-IAS, ICPS, Incoming Chair*

**Monday September 27th, 2010**  
**Morning Session**

### **Technical Session 1.1**

#### **Transmission System Operation and Control**

**Chair: *Dr. Peter Sauer***

10:30 am - 11:45 am

Venue: Bluebonnet Area 1

#### **Linear Programming Optimal Power Flow Utilizing a Trust Region Method"<sup>3</sup>**

*Anthony Giacomoni, Bruce Wollenberg*

#### **Market-Based Transmission Expansion Planning under Uncertainty"<sup>9</sup>**

*Yang Gu, James McCalley*

#### **On-Line Dynamic State Estimation of Power Systems"<sup>35</sup>**

*Wenzhong Gao, Shaobu Wang*

#### **Use of Phasor Measurements and Tuned Weights for Unbalanced System State Estimation"<sup>3</sup>**

*Bruno Van Tuykom, Jean Claude Maun, Ali Abur*

#### **PMU-Based Multi-Input SVC Supplementary Controller for Damping Inter-area Oscillation"<sup>46</sup>**

*Mehriar Aghazadeh Tabrizi, Ghadir Radman*

### **Technical Session 1.2**

#### **Distribution System Operation and Control**

**Chair: *Dr. Mariesa Crow***

10:30 am - 11:45 am

Venue: Bluebonnet Area 2

#### **A Decentralized Control Architecture for a Microgrid with Power Electronic Interfaces"<sup>52</sup>**

*Niannian Cai, Joydeep Mitra*

#### **Performance Evaluation of Electric Distribution Centers Using Data Envelopment Analysis"<sup>5</sup>**

*Shiva Pokharel, Rabin Shrestha*

**Identifying Techniques, Topologies and Features for Maximizing the Efficiency of a Distribution Grid with Solid State Power Devices''67**

*Karl Stefanski, Hengsi Qin, Badrul Chowdhury, Jonathan Kimball, Subhashish Bhattacharya*

**Distributed Grid Intelligence for Future Microgrid with Renewable Sources and Storage''74**

*Fanjun Meng, Ravi Akella, Mariesa Crow, Bruce McMillin*

**Evaluation of Low Frequency Communication Techniques for Load Phase Identification''7:**

*Daniel L. Geiger II, Mark Halpin, Donald Parker*

**Technical Session 1.3**

**Transients and EMC**

**Chair: *Dr. Osama Mohammed***

10:30 am - 11:45 am

Venue: Bluebonnet Area 3

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*Juan Carlos Escamilla, Pablo Moreno, Efraín Cruz*

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*Octavio Ramos-Leaños, Reynaldo Iracheta*

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*Jinghe Zhang, Greg Welch, Gary Bishop*

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*Anuradha Kumar, Satish Mahajan*

**Power Flow Control in DC Distribution Systems''! ;**

*Ahmed Mohamed, Osama Mohammed*

**Technical Session 1.4**

**Modeling and Simulation of Power Systems I**

**Chair: *Dr. Alejandro Dominguez-Garcia***

10:30 am - 11:45 am

Venue: Bluebonnet Area 4

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*Roozbeh Emami, Ali Abur,*

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*Liuxi Zhang, Ali Abur,*

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*Om Dahal, Sukumar Brahma, Satish Ranade, Robert Malahowski*

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*Fatou Thiam, Christopher L. DeMarco*

**An Extended DC-Model for Estimation of Transfer Capacity of Power Systems with Phase Shifting Transformers''343**

*Amit Lonare, Ghadir Radman, Arun Sekar*

**11:45 am - 1:30 pm**

Venue: Cafeteria, University Center

**Lunch**

**Monday September 27th, 2010**  
**Afternoon Session**

### **Technical Session 2.1**

#### **Modeling and Simulation of Power Systems II**

**Chair: Dr. Mehdi Etzadi-Amoli**

1:30 pm - 2:45 pm

Venue: Bluebonnet Area 1

#### **Review of Static Induction Motor Models"348**

*Jesús Carmona-Sánchez, Daniel Ruiz-Vega*

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*Blanca V Hernandez, Juan M. Ramírez*

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*Ram Mohan Reddi , Anurag Srivastava*

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*Christopher Colson, Hashem Nehrir*

#### **Fault Location in Meshed Power Networks Using Synchronized Measurements"377**

*Mert Korkali , Ali Abur*

### **Technical Session 2.2**

#### **Power System Stability, Reliability and Security I**

**Chair: Dr. Cansin Yaman Evrenosoglu**

1:30 pm - 2:45 pm

Venue: Bluebonnet Area 2

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*David Villarreal-Martínez, Daniel Ruiz-Vega*

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*Ce Zheng, Mladen Kezunovic*

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*Shravana Musunuri, Gholamreza Dehnavi*

**Technical Session 2.3**

**Power System Stability, Reliability and Security II**

**Chair: *Dr. Chris Edrington***

1:30 pm - 2:45 pm

Venue: Bluebonnet Area 3

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*Haiping Yin, Lingling Fan*

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*Samantha Castillo, Robert Balog, Prasad Enjeti*

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*Bijaya Pokharel, Wenzhong Gao*

**Technical Session 2.4**

**Shipboard Power Systems & Power System Protection**

**Chair: *Dr. Babak Fahimi***

1:30 pm - 2:45 pm

Venue: Bluebonnet Area 4



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*Siddharth Pal, Sayak Bose, Sanjoy Das, Caterina Scoglio, Bala Natarajan , Noel Schulz*

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*Salman Mashayekh, Karen Butler-Purry*

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*Hassan Abniki, Hassan Monsef, Pouria Shamsi*

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**Chair: *Dr. Babak Fahimi***

3:15 pm - 4:30 pm

Venue: Bluebonnet Area 1

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*Lisheng Shi, Mariesa Crow*

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*Ranjan Behera, Sanjoy Parida, Wenzhong Gao*

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**Instrumentation in Power Systems**  
Chair: *Dr. G. T. Heydt*

3:15 pm - 4:30 pm  
Venue: Bluebonnet Area 2

**Versatile Platforms for Wide Area Synchronous Measurements in Power Distribution Systems"4; 3**

*Mihaela Albu, Gerald Heydt, Sergiu-Cristian Cosmescu*

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*Jicheng Yu, Yingying Tang , George Karady*

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Chair: *Dr. Robert Balog*

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Venue: Bluebonnet Area 3

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*Sudipta Dutta, Thomas Overbye*

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**Renewable and Sustainable Energy Systems II**

**Chair: *Dr. Hashem Nehrir***

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Venue: Bluebonnet Area 4

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*Henry Louie, Kevin Peng, Eric Hoffstetter, Steve Szablya*

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*Murali Bottu, Mariesa Crow , Curt Elmore*

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*Tarek Masaud, Keun Lee, Pankaj Sen*

**On-Line Air Supply Control of PEM Fuel Cell by an Adaptive Neural Network"5: 9**

*Victor Sánchez, Juan M. Ramírez, Gerardo Arriaga*

6:00pm - 9:00 pm

Venue: Asian Ori e Buffet

Address: 2208 New Yoke  
Ave, Arlington,  
TX 76010

Dinner Party

**Tuesday September 28th, 2010**  
**Morning Session**

### **Technical Session 4.1**

#### **Renewable and Sustainable Energy Systems III**

**Chair: Dr. Badrul Chowdhury**

08:30 am - 09:45 am

Venue: Bluebonnet Area 1

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*Mohammad Akbari, Seyed Mohammad Madani*

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*Dexinghui Kong, Keith Holbert*

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**Chair: Dr. Hashem Nehrir**

08:30 am - 09:45 am

Venue: Bluebonnet Area2

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*Nasser Keshmiri, Wenzhong Gao*

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**Chair: *Dr. Noel Schulz***

08:30 am - 09:45 am

Venue: Bluebonnet Area 3

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*Yingzhong Gu, Le Xie*

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*Salman Kahrobaee, Sohrab Asgarpoor*

**Economic Evaluation of Small Wind Generation Ownership Under Different Electricity Pricing Scenario''6: 2**

*Anita Ann Jose, Anil Pahwa*

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Chair: *Dr. Anurag Sirvastava*

08:30 am - 09:45 am  
Venue: Bluebonnet Area 4

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*Michael Sattler, Yusi Lui, Chris Edrington*

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Chair: *Dr. L. Xie*

10:15 am - 11:30 am  
Venue: Bluebonnet Area 1

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*Himanshu Hirlekar, Badrul Chowdhury, Stephen Ruffing*

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**Power System Economics**

**Chair: *Dr. Ali Abur***

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Venue: Bluebonnet Area 2

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*Yixing Xu, Le Xie, Chanan Singh*

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**Chair: *Mr. Mert Korkali***

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Venue: Bluebonnet Area 3

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*Mohammad Hassanzadeh, Mehdi Etezadi-Amoli, M. Sami Fadali*

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*Xinyi Chen, Wei-Jen Lee*

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*Sandeep Yeleti, Yong Fu*

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*Dale Dolan, Joseph Durago, Joe Crowfoot, Taufik Taufik*

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**Topics of Special Interest in Power Systems**  
**Chair: *Dr. Sarika Khushalani***

10:15 am - 11:30 am  
Venue: Bluebonnet Area 4

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*Soma Sreenadh Reddy Depuru, Lingfeng Wang, Vijay Devabhaktuni, Nikhil Gudi*

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*Thomas Nicol ,Thomas Overbye*

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*Fredy Sanz, Juan M. Ramírez, Rosa Correa*

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*Héctor Manuel Sánchez-García, Tomás Ignacio Asiaín-Olivares, Daniel Ruiz-Vega*

12:00 pm - 2:00 pm  
Venue: Nedderman Hall

Lunch & Closing