



# Power Systems Engineering Research Center

## PMU-Enabled Distributed State Estimation with the SuperCalibrator

**Sakis Meliopoulos**

Georgia Power Distinguished Professor  
School of Electrical and Computer Engineering, Georgia Tech University

Public Tele-seminar  
Tuesday, June 17  
2:00-3:00 Eastern Daylight Time

**Description:** PSERC researchers at Georgia Tech have been searching for improved state estimation and power grid visibility approaches that use advanced data acquisition hardware. This research has led to the creation of the “SuperCalibrator,” a new technology that enables distributed state estimation by using existing relay/PMU devices in substations. Recently, these researchers teamed up with Concurrent Technologies Corporation (CTC) through the U.S. Department of Energy’s Center for Grid Modernization to accelerate development of fully distributed state estimator technologies and their use in modern energy management systems. The concept was proved on two two-substation systems of the NYPA and ENTERGY systems in a 2006-07 project. This effort has been focused on implementing and demonstrating this technology in a full system (the U.S. Virgin Island WAPA system). This work is being performed by Professors A. P. Meliopoulos and George Cokkinides. The fully distributed three-phase state estimator will be described in this tele-seminar.

**Biography:** Sakis Meliopoulos is Georgia Power Distinguished professor of electrical and computer engineering, Georgia Institute of Technology. He received the M.E. and E.E. diploma from the National Technical University of Athens, Greece, in 1972; the M.S.E.E. and Ph.D. degrees from the Georgia Institute of Technology in 1974 and 1976, respectively. In 1971, he worked for Western Electric in Atlanta, Georgia. In 1976, he joined the Faculty of Electrical Engineering, Georgia Institute of Technology, where he is presently a Georgia Power Distinguished Professor. He is active in teaching and research in the general areas of modeling, analysis, and control of power systems. He has made significant contributions to power system grounding, harmonics, and reliability assessment of power systems. He is the author of the books, *Power Systems Grounding and Transients*, Marcel Dekker, June 1988, *Lightning and Overvoltage Protection*, Section 27, Standard Handbook for Electrical Engineers, McGraw Hill, 1993. He holds three patents and he has published over 220 technical papers. In 2005 he received the IEEE Richard Kaufman Award. Dr. Meliopoulos is the Chairman of the Georgia Tech Protective Relaying Conference, a Fellow of the IEEE and a member of Sigma Xi.

### Speaker Contact Information

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**Registration for Webcast Participation:** None required. There is no charge for participating!

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#### **PSERC's Tele-Seminar Coordinator**

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Shmuel welcomes feedback on the tele-seminars and suggestions for future ones.