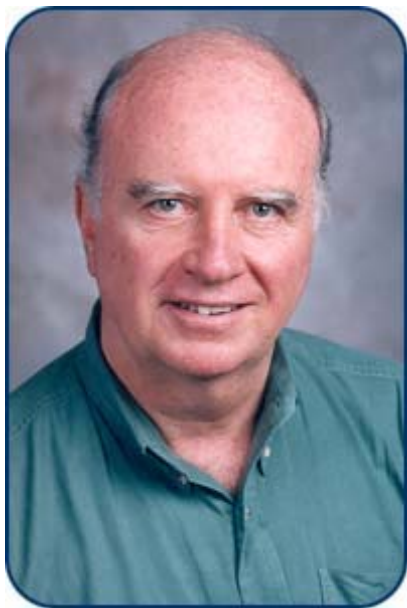


THURSDAY
OCTOBER 20, 2005

Scaife Hall Auditorium
Room 125

4:00 PM
Refreshments—3:30 PM



KEVIN A. CLEMENTS

WORCESTER POLYTECHNIC INSTITUTE

Kevin A. Clements is currently a Professor of Electrical Engineering at Worcester Polytechnic Institute (WPI).

He received his Ph.D. in Systems Science from the Polytechnic University. While at WPI he served as the head of the Electrical Engineering Department from 1983 through 1988 and as Dean of Graduate Studies and Research from 1991 through 1994. He also spent the 1990-91 academic year as the Program Director for Power Systems at the National Science Foundation.

His research is focused on application of optimization and estimation theory to problems in power systems. He has worked extensively in the areas of power system state estimation and optimal power flow.

Marija Ilic, ECE Seminar Host
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For more information:
<http://www.ece.cmu.edu/seminar>

MONITORING THE POWER GRID: A LARGE-SCALE NONLINEAR PROBLEM

The electric power grid in the US is an extremely large nonlinear system whose reliable operation is vital to the economy of the country. This reliability is achieved in part by continuous monitoring of the state of the system coupled with appropriate control action when an insecure state is observed.

This talk will focus on state estimation for the electric power grid. State estimation is done in real-time in control centers throughout the US. State estimation techniques exploiting the large sparse nature of the power system equations have been developed which are capable of solving very large problems. Power grid observability as well as bad data and topology error detection and identification will be discussed.