

PREDICTION USING A WAVELET-BASED LOCALLY STATIONARY PROCESS MODEL

Dr. Arthur Johnson, III
Advanced Power Systems
Bechtel Bettis, Inc.
West Mifflin, PA

Abstract

This talk presents a modeling approach for a class of nonstationary data which can be analyzed to predict irregular operation within a time series. The model structure can be applied to a class of slowly varying nonstationary processes which may be described by locally stationary wavelet processes utilizing wavelet packets. A method is presented to select subprocesses that characterize key aspects of a nonstationary process for analysis. The estimated parameters of the selected subprocesses are used to infer the time varying behavior of the process. The parameters can be used as features to distinguish changing states within a process or to differentiate different locally stationary processes.

Speaker's Biographical Sketch

Dr. Arthur Johnson III graduated with a B.E.E. degree from the University of Delaware and received the M.S. and Ph.D degrees in Electrical Engineering from the University of Pittsburgh. He has worked for several companies including Delmarva Power and Alcoa. Dr. Johnson currently works for Bechtel as a Senior Engineer.

Date: Wednesday, April 1, 2009

Time: 12:00 noon – 1:00 pm

Location: 424 Benedum Hall