



Fall 2018 Distinguished Seminar Series

Locating Short Circuit Faults With Sparse Synchronized Measurements

TUESDAY, NOVEMBER 13, 2018

10:00AM – HEC 101A

This talk will describe the use of synchronized measurements to locate faults in power systems. These measurements will be assumed to be recorded at a few substations in a large power grid. Two alternative formulations will be discussed. One of them uses synchronized “point on wave” samples of voltage transients and the other one is based on pre-fault and post-fault synchronized phasor measurements. We will first present the approach where the time-of-arrival of fault-initiated traveling waves at a few substations will be used in order to estimate the location of the fault. Choice of measurement locations and robustness of the estimation against sensor failures will also be discussed. The second approach uses a limited number of synchronized voltage phasor measurements. In this case, the fault location problem is formulated and solved as a sparse regression problem. Performance of both approaches will be illustrated by using simulated fault scenarios on typical power grids.

Dr. Ali Abur **Northeastern University**



Ali Abur obtained his Ph.D. degree from the Ohio State University in 1985 and joined the faculty of EE Department at Texas A&M University. In 2005 he moved to Northeastern University and served as the Chair of the Electrical and Computer Engineering Department until 2013. His research and educational activities have been in the area of power systems. He is an IEEE PES Distinguished Lecturer and served on the Editorial Board of IEEE Transactions on Power Systems during 1999-2011. He is a Fellow of the IEEE.

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