



ONLINE TRANSFER FUNCTION ESTIMATION AND CONTROL DESIGN USING AMBIENT SYNCHROPHASOR MEASUREMENTS

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Tuesday, January 23 • 2 PM – 3 PM • EME 26

OVERVIEW

Low frequency natural oscillations (NO) are a commonly occurring phenomenon in power systems. These are caused due to the presence of poorly damped mode(s) in the system and present problems such as reduced transmission capacity, equipment fatigue, islanding and blackout in extreme scenarios. NOs may be avoided/eliminated by maintaining sufficient damping against all system modes which can be done using a well-designed feedback controller. A reliable controller design requires a good estimate of frequency response of system between designated feedback and control locations. Offline models have been found unsuitable for this purpose pushing for the need for online frequency response estimation tool. This talk will focus on online transfer function estimation and adaptive damping controller design using ambient synchrophasor measurements in power systems.

BIO

Habib Wajid is a PhD student at School of Electrical Engineering and Computer Science in Washington State University, Pullman, WA. He did his Bachelors (EE) and Masters (EE) from University of Engineering and Technology, Lahore, Pakistan, where he also was a lecturer for five years. He has been working on small signal stability and control and localization of natural and forced oscillations in power systems for the past four years.

