



Power Systems Engineering Research Center

Phasor-Only State Estimation

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PSERC Public Webinar

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2:00-3:00 p.m. Eastern Time (11:00-12:00 p.m. Pacific)

Description:

Wide-spread deployment of synchronized phasor measurements at substations in the past decade facilitated their utilization for various network applications one of which is the state estimator. Early investigations looked at cases where synchronized measurements were used to augment the existing SCADA measurements, while more recent studies consider the scenario where sufficient number of strategically placed phasor measurements enable state estimation based solely on phasor measurements. In this talk, we will first review state estimation formulation that uses only phasor measurements and present a solution algorithm that remains robust against missing or erroneous phasor measurements. We will then present some of the benefits of having phasor measurements (as opposed to SCADA measurements) for parameter error identification. We will conclude the talk by addressing the issue of non-detectable and/or non-identifiable random or malicious errors in phasor measurements and illustrate some simple solutions to avoid manipulation of flow estimates on network branches via injection of such errors in phasor measurements.

Biography:

Ali Abur received his B.S. degree at Orta Dogu Teknik Universitesi, Ankara, Turkey and M.S. and Ph.D. degrees from The Ohio State University. He joined the Department of Electrical Engineering at Texas A&M University where he worked as a Professor between 1985 and 2005. In 2005, he moved to the Department of Electrical and Computer Engineering at Northeastern University in Boston where he is currently a professor. He co-authored the book "Power System State Estimation" and published technical papers and reports on the same topic. He served as an Editor for IEEE Transactions on Power Systems between 1999 and 2011. He is a Fellow of the IEEE.

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

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PSERC's Webinar Coordinator: Venkataramana Ajjarapu, Iowa State University, vajjarap@iastate.edu.

Professor Ajjarapu welcomes your feedback on PSERC webinars and suggestions for future ones.