



# 2020 PSERC Summer Tutorials

## Operational Tools for Handling Wide Area Forced Oscillation Events

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On January 11, 2019, an input failure to a governor control at a steam power plant in Florida resulted in MW oscillations that were seen throughout the eastern interconnection. This was caused by the phenomenon of inter-area resonance when a forced oscillation resonates with inter-area system modes with close-by frequencies. The resonance effect can lead to long distance propagation of a forced oscillation, even when the associated system mode is well-damped, depending on the sensitivity of the source location of the forced oscillation. There have been several such recent widespread oscillation events in the eastern and western interconnections, and in Europe, which were caused by forced oscillations interacting with system modes. This talk will discuss available operational tools in the form of signal processing algorithms for recognizing and analyzing such events online using synchrophasor measurements. The methodology will be illustrated on recent system oscillation events in the North American interconnections.

**AUGUST 18, 2020**

[LINK TO TUTORIAL](#)

**3:00-4:30 P.M. EDT**

(12:00-1:30 P.M. PDT)

**Mani V. Venkatasubramanian** is the Boeing Distinguished Professor in Electrical Engineering at Washington State University (WSU), Pullman, WA. He also serves as the Director of Energy Systems Innovation Center (ESIC) at WSU. He received his M.S. and D.Sc. in Systems Science and Mathematics from Washington University, St. Louis, MO and B.E. (Hons). In Electrical and Electronics Engineering from Birla Institute of Technology and Science, Pilani, India. He has been a faculty at WSU since 1992. Oscillation monitoring algorithms developed by his research group have been integrated into commercial platforms and implemented in several utilities. He recently served as a contractor for North American Electric Reliability Corporation (NERC) for studying the interconnection oscillation modes and events in North America. He is a Fellow of IEEE.

