



THE NORTH AMERICAN SYNCHROPHASOR INITIATIVE WEBINAR SERIES

Wilsun Xu (Professor, University of Alberta)

Synchronized Waveforms – A Frontier of Data-Based Power System and Apparatus Monitoring, Protection, and Control



Dr. Wilsun Xu received Ph.D. from the University of British Columbia, Vancouver, BC, Canada, in 1989. He worked in BC Hydro, Vancouver, BC, Canada, for seven years before he joined the University of Alberta, Edmonton, Alberta, Canada, in 1996. He is currently a professor at the University of Alberta. Dr. Xu's main research area is power quality. He was awarded IEEE Fellow in 2005 for contributions to power quality research. In recent years, Dr. Xu has been researching the application of disturbance waveforms to support equipment and system condition monitoring. These activities have helped to form the Power Quality Data Analytics Working Group in 2014, under the Power Quality Subcommittee of the IEEE Power & Energy Society.

Voltage and current waveforms contain the most authentic and granular information on the behaviors of power systems. In recent years, it has become possible to synchronize waveform data measured from different locations of a power system. Thus, large-scale coordinated analyses of multiple waveforms over a wide area are within our reach. This development could unleash a set of new concepts, strategies, and tools for monitoring, protecting, and controlling power systems and apparatuses. This webinar presents an in-depth review and analysis of the advancements in synchronized waveform data, including measurement devices, data characteristics, use cases, and comparisons with synchrophasor data. Based on the findings, five strategies are proposed to discover and develop synchronized waveform-based applications over multiple application areas. The webinar also introduces three complementary application platforms and two data screening algorithms for application implementation. The presentation material is based on a paper accepted for the visionary paper series of the IEEE Transactions on Power Delivery.

To attend this free webinar, please register at <https://www.naspi.org/node/931>.

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10:00 a.m. Pacific / 1:00 p.m. Eastern (1 hr.)

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