TECH TUESDAY SEMINAR SERIES

COLLEGE OF ENGINEERING | School of Electrical Engineering and Computer Science

Power System Modeling for Cyber and Physical Security of Electrical Infrastructure

ABSTRACT

Due to the variety of mechanisms involved, it is challenging to protect and control power systems undergoing emergency operation, such as cascading failures, caused by natural or adversarial events. Remedial action schemes and power system restoration procedures remain non-standardized and are often not uniformly implemented across system operators. The first part of this talk will illustrate an open source power system dynamic simulator that integrates distributed and wide-area protective schemes. For example, load shedding and islanding have been successful protection measures in restraining propagation of contingencies and large cascading outages. The second part of this talk focuses on the modeling and simulation integration of initiating contingencies that capture a diverse set of hazards for electrical infrastructure, as well as discussing future strategies to improve energy access and resilience in modern topologies like microgrids.

SPEAKER BIO

Eduardo Cotilla-Sanchez is an Associate Professor in the School of Electrical Engineering and Computer Science in the Oregon State University College of Engineering. He received M.S. and Ph.D. degrees in Electrical Engineering from the University of Vermont. Dr. Cotilla-Sanchez has more than 10 years of experience in power system protection and reliability, with a focus on cascading outages in power systems. He has been lead PI on BPA Technology Innovation and other DOE and NSF awards, as well as co-PI of the DOE Cyber Resilient Energy Delivery Consortium (CREDC). His contributions are focused on power system protection, resilience, and energy access. These interests spire into several other research areas such as nonlinear dynamics, complex systems, cyber security, smart grids, microgrids, and wide-area power system data. Cotilla-Sanchez is the Vice-Chair of the IEEE Cascading Failures Working Group.

Accommodations for disabilities may be made by contacting 541-737-3617 or eecs@oregonstate.edu.

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March 9, 2021

Talk: 11:00-11:30 AM PDT
Q/A: 11:30-11:45

Zoom: https://beav.es/tech-talk

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