

# Electrical & Computer Engineering Seminar

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**Sara Eftekharnjad, Assistant Professor, Electrical Engineering and  
Computer Science at Syracuse University**

*Will present a talk entitled:*

**Modeling the Interdependent Power Grid Uncertainties**

**SC160**

**Friday November 4<sup>th</sup>, 2022**

**4pm**

**Abstract:** Enhanced real-time situational awareness and increased integration of renewable energy resources are two critical aspects of the smart grids that ensure sustainable and reliable sources of electricity. However, the unprecedented increase in intermittent wind and solar energy resources along with growing severe weather patterns may put these objectives at odds with each other if these uncertainties are not effectively modeled. For example, real-world wind power production scenarios are essential for an accurate assessment of the impact of wind power generation on power systems. Such a model should capture the spatial and temporal correlations between different wind turbines that are part of a wind farm. Accurate modeling of these correlations will ensure that the wind power uncertainty can be properly quantified. In this talk, data-driven generation uncertainty models and predictive failure models, as possible solutions for enhancing situational awareness and reliability, will be discussed.

**Bio:** Dr. Sara Eftekharnjad is an Assistant Professor in the Department of Electrical Engineering and Computer Science at Syracuse University. Prior to that, she held positions at the University of Idaho and Tucson Electric Power Company. She received her Ph.D. degree in Electrical Engineering from Arizona State University, Tempe, AZ in 2012. Her research interests include uncertainty quantification for power system operations and planning, real-time power system operations, and power system resiliency. Dr. Eftekharnjad's research has been funded by several federal and non-federal grants, and she is the recipient of the 2022 CAREER Award from the National Science Foundation. She is an associate editor of the IEEE PES Transactions on Sustainable Energy and IEEE PES Letters.

Also on zoom:

<https://clarkson.zoom.us/j/97876015217?pwd=WmtaTFFLbW54MXdDcWhrYXp4N2V4QT09>

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