# ENERGY & POWER GROUP SEMINAR

## A Learning-Based Strategy to Identify Underrepresented Extreme Weather Events to Improve the Reliability and Resiliency of Power Systems

## Abstract

This study investigates the integration of weather data, employing machine learning techniques, into power flow analyses to enhance grid resilience. Emphasizing the significance of wind and solar droughts, particularly in Texas, it underscores their impact on power grid planning amid energy transitions and climate change. A focus on classifier value for predicting severe weather conditions is highlighted, utilizing data spanning from 1940 to 2023. Methodologies for seamlessly integrating weather data into electric grid planning, with a spotlight on machine learning, are outlined. Case studies exemplify the identification and impact of weather resource droughts, offering valuable insights for improving grid resilience strategies.

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**Friday, March 8**
**11:30 am**
**241 ZACH**

## Biography

Kseniia received her BS and MS degrees in Electrical Engineering from Moscow Power Engineering Institute (MPEI) in 2015 and 2017 respectively. She has 8 years of industry experience in power system design, construction, and consulting. She is currently pursuing a PhD degree in electrical engineering with the Department of Electrical and Computer Engineering, at Texas A&M University, College Station, TX. Research interests are in Power Systems Dynamic Modeling, Machine Learning, and Optimization.