



TEXAS A&M UNIVERSITY

Department of Electrical
& Computer Engineering

TRANSFORMING ENGINEERING EDUCATION

ENERGY & POWER GROUP SEMINAR

Cyber-Physical Awareness and Mitigation Strategies During Geomagnetic Disturbances

Abstract

Electric grids are extreme critical infrastructure. The reliable operation of these complex systems can be interrupted by geomagnetic disturbances (GMDs) in multiple ways, one being via the disruption of cyber base equipment and communications. Modern electric grids rely on communications of synchrophasor measurements, global positioning systems data and computer data. If these ancillary system are compromised by a GMD, this may lead to failures and possibly outages in the electric grids they support. This work details some possible issues that may arise when the communications of the cyber systems of electric grids are affected by a GMD. Additionally, mitigation strategies are proposed to handle the effects resulting from GMDs on the cyber-physical system.



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Friday, February 16
11:30 am
241 ZACH

Biography

Rhett received his BS degree in Electrical Engineering double major with Applied Mathematics from Texas A&M University, College Station, Tx in Spring 2021. He is currently pursuing a PhD degree in electrical engineering with the Department of Electrical and Computer Engineering, Texas A&M University, College Station, Tx. Research interests are on modeling of GMD storms, GMD effects on the Power grid, Power Grid Reliability and Resilience in regards to GMD events, Prime number research, Mathematical Number theory on Power System Data, Transmission Line Consequence analysis, and Oscillations in the Power Grid.

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