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Poster
The May 2024 Gannon storm was one of the most severe geomagnetic storms in the past 20 years, making it an event that scientists and engineers will study for decades. Understanding how large geomagnetic disturbances (GMD) impact geomagnetically induced currents (GICs) within power grid networks is key to ensuring the resilience of such systems. However, empirical GIC estimates are sensitive to the network configuration at the time of the event, and this perishable network data is often lost after a GMD. In this work, we present results by combining permissible data from 18 GIC sites and 7 magnetometer sites from the Tennessee Valley Authority with many other data sources. These other data sources are (a) 396 GIC sites and 15 magnetometer sites from the NERC ERO portal, (b) computed virtual magnetometer data at all sites from the MAGE and SWMF simulation models, (c) ? scaling factors derived from transfer functions at locations from the NSF IRIS/SAGE/EarthScope Data Services portal, (d) predicted GIC from GMU's Power Grid Model, and (e) transmission line geographic and voltage information from HIFLD. The objective of this work is to collect the largest and most diverse set of data for a geomagnetic storm on record, search for heuristic and empirical relationships between GICs measured at different sites, and compare model predictions with measurements. Preliminary analysis includes a comparison of the correlation between all pairs of GIC sites and its dependence on the intersite distance, the ? factor difference between sites, and the voltage level of the line of the GIC monitors. In this poster, we present the initial results from analyzing this synthesized data.

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