

Effects of High Wind on Power Grid Stations Vulnerability

Wind speeds above 74mph takes the shape of a hurricane. These fierce and devastating hurricanes can cause incredible damage in a short period of time. The most common impact and the one that has greatest immediate effect on people is power outage. Hurricane-force winds can knock down distribution poles or slap transmission lines into each other. One such example was seen recently when Hurricane Ida's wind crippled a Louisiana power grid, leaving nearly 1 million customers without electricity after the storm. A majority of the power lines in the US are above the ground making them vulnerable to strong winds. In this study, we will explore the vulnerability of power grids in the south-east region of USA, by the help of data analysis tools and machine learning algorithms. The relevant data for the study is collected from "NASA's MERRA-2 wind component data" for wind speed and "Homeland Infrastructure Foundation-Level Data" for location of power grids.