

Forecasting Tornado Trends: A Disaster Management Challenge



Scenario:

Imagine you're an analyst at FEMA tasked with preparing for the next decade of tornadoes. Disaster relief resources are stretched thin, and accurate predictions are critical to saving lives and minimizing property damage. Using historical data and time-series forecasting techniques, your mission is to analyze trends in tornado frequency, severity, and impact to help FEMA allocate resources effectively.

Your job is to build and evaluate ARIMA and SARIMA models to predict future tornado metrics. With your insights, FEMA will decide how to prioritize high-risk regions and develop strategies to mitigate future damage.

Mission:

Your task is to analyze a provided tornado dataset and create a time-series forecast for at least one of these metrics:

1. Tornado frequency.
2. Severe tornadoes (F3 and above).
3. Tornado-related fatalities or injuries.

And to deliver a concise report summarizing your data preprocessing steps, the model-building process and finally, your key findings and actionable recommendations.

Good luck, and may your predictions guide disaster management effectively!