



Met Office European Windstorm Event response services

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European windstorms are capable of producing devastating socioeconomic impacts. Specifically, they are capable of causing power outages to millions of people, closing transport networks, uprooting trees, causing walls, buildings and other structures to collapse, which in the worst cases can result in dozens of fatalities. In Europe windstorm presents the greatest natural hazard risk for primary insurers. Although average claims are much smaller for wind peril than for flood, the high volume of claims results in the greatest aggregate loss. In the low loss winter of 2013/2014 alone storms Christian, Xaver, Dirk and Tini cost the insurance industry an estimated EUR 2500m. The Met Office provides leading meteorological hazard insight to reinsurers, insurers, traders and brokers. Services include Windstorm hazard maps for underwriting and portfolio management, historical windstorm footprints and an event set for risk modelling and capital reserving, alerts and impact analysis of incoming storm events for operations and loss forecasting and forecast scenarios with probabilities for trading weather sensitive stocks. Additionally the Met Office can undertake climate and weather impact investigations tailored to specific financial contexts, as well as detailed modelling and analysis following a major event. In this short presentation we will exemplify our product portfolio in the light of the events during the 2014/2015 winter season.

Some of the products that have resulted from windstorm research include a suite of forecasts around a storm event starting with an alert derived from the Met Office ensemble prediction system, MOGREPS. It describes the exceedance of a probability for wind gust thresholds that triggers the production of additional forecasts as early as seven days in advance of a potentially life threatening situation. Subsequent forecasts include a deterministic high resolution forecast of the maximum wind gust footprint over a 3 day period over the European domain at 3–5 day lead times. The rapid response real time analysis over the past 3 days provides a succinct description of the actual storm footprint.

Pattern matching of current or forecast storms against historical windstorms can enable a rapid prediction of likely loss and aid insurers to plan to allow timely deployment of staff and funds at the right level. Contextualizing the storm footprint with respect to hazard maps describing distinct return periods provides an immediate visual interpretation of the severity of the event.

A 4km resolution historical wind storm catalogue describing hourly data of over 6100 storms and a dynamically consistent low resolution event set with over 80000 storms provide comprehensive datasets to further study European wind storm risk in partnership.