



A catastrophe model of severe convective storms in Europe built using a combination of ESWD, ERA-interim and satellite data sources

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Severe convective storms have the potential to cause massive damage and therefore lead to losses for insurance and reinsurance companies. Catastrophe models provide probabilistic views of these hazards and enable companies to better prepare for the impact for future events. Impact Forecasting is the catastrophe model development centre within Reinsurance broker Aon Benfield.

This talk describes the building of a natural catastrophe model for severe convective storms in Europe, primarily covering damage by hail but also aiming to incorporate associated wind gusts. The model uses a set of events extracted from the ERA-interim historic reanalysis using a novel method developed by the University of Cologne, details of which will be presented. Hail reports from the ESWD are used alongside atmospheric parameters from ERA-interim to identify conditions favouring the development of hail storms. A stochastic event set is built by sampling within these events. A combination of ESWD reports and radar data based on overshooting top detection is used to derive distributions of event parameters such as length and maximum hail size.