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A probabilistic catastrophe model for hail in central Europe

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After major loss causing events in recent years, hail is now recognised as a significant natural peril in many European countries. Impact Forecasting have responded to demand from the insurance market by producing a fully probabilistic catastrophe model for hail.
This poster primarily covers the hazard component of the model. The building of the stochastic event set is described as a five stage process; identification, extraction, sampling, swathe placement and swathe parameter assignment. Collaborators at the University of Cologne developed a novel method for identifying days of convective activity within the ERA-interim reanalysis. A set of days extracted from the reanalysis were then used as seed events from which a stochastic event set was built. Circulation weather types were used to ensure consecutive days of events are physically consistent. A series of thresholds developed using both literature and hail data were used to place hail swathes within days, with each swathe having parameters from distributions based on observations.
The vulnerability component of the model is based on extensive loss data and results are in good agreement with market experience.