



Hail hazard derived from historic hail footprints; a probabilistic hail storm catalogue for central Europe.

Maximilian Strasser (1), Alessandro Bonassi (1), Delioma Oramas-Dorta (1), Jose De Aguinaga (1), Rebecca Cheetham (1), Matthias Moehrlein (2), Silvia Riso (2), and Hans-Dieter Betz (2)

(1) Guy Carpenter and Company GmbH, Munich, Germany, (2) nowcast GmbH, Munich, Germany

Catastrophe models are widely used in reinsurance risk assessment from natural perils. In this context Guy Carpenter, a reinsurance intermediary, has developed a probabilistic hail model for Central Europe. As part of the hazard development, Guy Carpenter has tasked meteorologists at nowcast GmbH to identify historic hail patterns and individual hail storm tracks over an 8-year period from a continuous lightning dataset, issuing from their lightning detection system, "LINET". Based on historic hail footprints provided by nowcast GmbH, Guy Carpenter has developed a stochastic event generator in order to compute a catalogue consisting of synthetic, but meteorologically reasonable events, representing an 800-year history. The goal of stochastic event generation is to extend the observed hail history to extreme hail scenarios that could cause catastrophic losses to insurance portfolios and to quantify corresponding storm probabilities. Reflecting geographical dependencies, the method uses key attributes of the historic hail tracks and footprints, such as the storm track, length and bearing direction, footprint centre point and storm genesis date. A bootstrapping technique was used to associate simulated hail footprints with a likely storm track, based on historic distributions. The poster shows work in progress on the event set generation results, the computed geographic hazard maps and validation of the frequency and intensity assumptions, using data from nowcast GmbH, the European Severe Storms Laboratory (ESSL) and spatial statistics on insurance claims information.