



## **A new stochastic event catalogue for hail in Europe**

Angelika Werner (1), Heinz Juergen Punge (2), Kritopher Bedka (3), David B. Stephenson (4), Marc Puskeiler (2), and Michael Kunz (2)

(1) Willis Re, Muenchen, Germany, (2) Institute for Meteorology and Climate Research, Karlsruhe Institute of Technology, Karlsruhe, Germany, (3) NASA Langley Research Center, NASA, Hampton, USA, (4) College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, UK

Damage by hail events constitutes one of the major atmospheric risks to mobile, buildings and agricultural values. The quantification of this risk is of particular interest for insurance companies. However, there is little knowledge beyond local historical damage, due to the rarity of events and the lack of uniform detection methods. Here, we present the hazard component of a stochastic risk model for hail in Europe. The stochastic event catalogue is based on hail observations from the ESWD network and satellite observations of overshooting cloud tops (OT), indicating very strong convection and thereby favorable conditions for hail formation.

The presented catalogue is the first hail event catalogue based on a single homogeneous observation source over Europe. Historic hail events are defined based on OT occurrences detected from infrared brightness temperatures of the MSG SEVIRI satellite between 2004-2011. The stochastic catalogue uses this historic event properties compromised by hailstone observations from the ESWD network to derive more than 1 million individual events with an event footprint resolution of 1km.