vEGU21 Media Tip Sheet: Natural hazards meet economics at EGU21

In the insurance industry, catastrophe models consider natural hazards, vulnerability, and exposure. As the climate crisis causes more extreme events around the world, insurers and governments are looking to learn more about how they might affect our built environment. The following presentations offer some new insights.

Mining Flood Insurance Big Data to Reveal the Determinants of Humans' Flood Resilience

The effects of floods on flood insurance purchases are analysed for different socioeconomic backgrounds. The results may help address societal inequalities in disaster risk management and improve the U.S. National Flood Insurance Program.

Mon 26 Apr 13:45 CEST

Session NH9.3: Next generation technologies and applications for disaster risk modelling and management

Near real-time identification of extreme events for weather index insurance using machine learning algorithms

Weather index insurance is an innovative tool to speed up payouts after natural disasters, including floods and droughts, strike.

Mon 26 Apr 13:59 CEST

Session NH9.3: Next generation technologies and applications for disaster risk modelling and management

Skilful predictions of multi-year US hurricane insured losses by decadal prediction systems

Hurricanes are the costliest natural hazard affecting the U.S., but costs are hard to predict due to decadal variability. A new multi-model system predicts decadal North Atlantic hurricane activity and U.S. insured losses.

Tues 27 Apr 13:48 CEST

Session NH1.7: Extreme meteorological and hydrological events induced by severe weather and climate change

Economic ripple resonance from consecutive weather extremes amplifies consumption losses

Results of analyses of single extreme weather events versus multiple concurrent events show economic impacts are almost 20% higher with concurrent weather extremes, meaning the societal costs of climate change are likely underestimated.

Wed 28 Apr 11:12 CEST

Session ITS3.2/BG7: Climate extremes, biosphere and society: impacts, cascades, feedbacks, and resilience

Estimates of future flood risk in Western Europe and its potential impact on insured losses

A reinsurance company estimates impacts of climate change on future river flood risks in Europe.

Wed 28 Apr 15:39 CEST

Session NH9.5: Natural hazard event analyses for risk reduction and climate adaptation

Investigating the stochastic structure of the recently published Redacted Claims data set by the FEMA National Flood Insurance Program

Newly released data on more than 2 million claims dating back to 1978 from the U.S. National Flood Insurance Program are providing novel insights into flood impacts, including revealing underlying patterns of insurance claims.

Thurs 29 Apr 11:59 CEST

Session HS7.4: Hydroclimatic change and unchange: exploring the mysteries of variability, nature and human impact

Modelling extreme precipitation fields for large scale flood insurance

Simulations of extreme precipitation are used to create a method for widescale flood-risk assessments.

Thurs 29 Apr 14:31 CEST

Session HS7.8: Spatial extremes in the hydro- and atmosphere: understanding and modelling

New build homes, resilience and environmental justice – current and future trends in flood risk under climate change across England and Wales

An analysis of new homes built in England and Wales during the last decade shows that a disproportionately higher number built in socioeconomically depressed neighborhoods will end up in areas at high risk of flooding due to climate change. Will flood insurance be affordable?

Thurs 29 Apr 15:46 CEST

Session NH9.1: Natural hazards and vulnerable societies – perspectives on natural hazard risk methods, data, interactions, and practice from global to local scales

Lessons learned from working with windstorm-related impact data

Windstorms cause significant economic damage across Europe each year. New centralised databases that combine meteorological data with impact data — like electricity interruption records — help connect socioeconomic impacts with windstorms.

Fri 30 Apr 14:09 CEST

Session AS1.6: Mid-latitude Cyclones and Storms: Diagnostics of Observed and Future Trends, and related Impacts

Simulation of wind damages associated with the PRIMAVERA European windstorm event set

The PRIMAVERA European windstorm event dataset can be used to model windstorm risks for the insurance sector; preliminary results reveal that simulated losses are consistent with historical data.

Fri 30 Apr 14:11 CEST

Session AS1.6: Mid-latitude Cyclones and Storms: Diagnostics of Observed and Future Trends, and related Impacts