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Comment on nhess-2021-331

Anonymous Referee #1

Referee comment on "Invited perspectives: how does climate change affect the risk of natural hazards? Challenges and step changes from the reinsurance perspective" by Anja T. Rädler, Nat. Hazards Earth Syst. Sci. Discuss.,
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A review of the Invited Perspective:
How does climate change affect the risk of natural hazards? Challenges and step changes
from the reinsurance perspective
by Anja T. Rädler

The author contributes a perspective from the (re-) insurance industry. The manuscript has a focus on the assessment and forecast of natural hazards' variability and change in the past and future, as both are important for insurance business. In the first part, the manuscript describes in how far scientific research has foci which are allegedly not in line with the industry's needs. As a scientist, I find these statements surprising, as outlined in my specific remarks below. Later in the manuscript, the author spells out what foci of research are of particular interest to the industry. Towards the end of the manuscript, an example for a cooperative project between science and industry is provided, and the wish to have a closer cooperation between scientific research and industry is spelled out.

In summary, I think this manuscript is a very valuable contribution to the NHESS special issue, as it clearly provides statements on research areas of particular interest to insurance. Before publishing the paper, however, several statements in its first part should be re-considered (see below). Actually, there have been a number of joint research projects between science and industry before (some of them funded by the industry itself, by its service providers and by research institutions funded by business). Also, many scientific results (for example, decadal predictions) could be picked up by the insurance industry and its service providers.

Thus, I recommend requesting a revision of the manuscript. Some details are given below.

Specific comments

L10-11: It is stated that there is a low correlation of severe natural hazards in geographically distant regions. Is there already enough scientific evidence for this assumption? I know an un-reviewed report carried out by the British Met Office and available as a file download on www.loyds.com (pdf-risk-reports-1781G-Lloyds-Met-Report-2016.pdf) which came to this conclusion, but recent research on amplified Rossby waves or teleconnections modified by Arctic Amplification, for example, suggests that this may not be the whole truth.

L18-20: I assume that the intention of the author is not to criticize scientific work looking at events on an individual grid point basis, which could be understood from the wording. Thus, I suggest to change the wording, possibly pointing out the insurance industry's interest in additional aspects of extreme events, like their spatial extent or duration. The existence of scientific research considering the (potential) loss arising from events should be mentioned. The background of why a "regional catastrophe" is of particular interest to the insurance industry, should be explained, as it is probably not immediately clear to all readers.

L22-25: The focus of climate studies on changes towards the end of the century is mostly explained by the need to find unambiguous results with respect to the greenhouse gas effects. Signals are weaker when considering the near future with lower GHG concentrations, and decadal climate variation is more important on the short time scale of 1-5 years. Research available on decadal climate prediction (and on multi-seasonal predictions) could be mentioned/cited.

L29: I assume this refers to risk models of the insurance industry. I do not understand why these models must be updated regularly, if they are working ok. Is this an effect of climate change, for example? Should updating refer to progress in seasonal to decadal predictions?

L67-68: While I understand that an unambiguous assignment of an event to climate change is formally impossible, there are several scientific studies on the role of climate change in making individual events more likely.

L136-L150 I understand the benefits of the perspective establishing joint projects between the insurance industry and science. However, I do not understand why a detailed description of a particular project should be helpful. If the project is mentioned taken as an example in order to demonstrate the added value of insurance industry as a partner (mentioning it after the statement on joint projects), the particular benefits should be explained. Of course, the question may come up why the insurance industry is not (individually or through some research agency) financing science on the open questions

they regard particularly relevant. My guess is that this has a financial and research politics background, rather than a scientific reason.

Minor remarks

L 14 The relevance of mentioning the rainstorm Bernd and the Hurricane Ida (and some unnamed hailstorm in Australia) may not be obvious to all readers. You should provide a month/year of these events when clarifying your point.

L16 I think a wildfire is not really a slowly evolving event like a drought. Actually, my understanding is that wildfires are generally related to drought.

L32: I do not understand what is meant with "long-term effects from climate change that have already happened in the past decades. Please re-write.

L36-38: Write as bullet points

L40-48: Is this a description of the current procedures used by the insurance industry?

L45: Should trends really be taken into account by weighting of certain time periods? I would rather attempt an explicit inclusion of such trends into the approach.

L95: NAO

L129 Public