

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
<https://doi.org/10.5194/nhess-2022-6-RC1>, 2022
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Comment on nhess-2022-6

Anonymous Referee #1

Referee comment on "Invited perspectives: An insurer's perspective on the knowns and unknowns in natural hazard risk modelling" by Madeleine-Sophie Déroche, Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-6-RC1>, 2022

Review of "Invited perspectives: Current challenges to face knowns and unknowns in natural hazard risk management - an insurer perspective" by Madeleine-Sophie Déroche

The manuscript provides a short review of the challenges in assessing natural hazard risk and loss in the insurance sector. The paper covers a range of topics, including improving current risk and loss assessment models and addressing future challenges such as climate change. Given this, the manuscript will be of wide interest to the natural hazards community, since it provides a perspective on risk assessment from a different industry-based perspective. Given this, I would recommend publishing the manuscript. However, there are a large number of minor errors in the text that reduce its readability. I've tried to revise these as much as possible in the corrections below, but the manuscript could benefit from a close proof-read before publication.

Minor Corrections

Comment 1: Often loss models in the insurance industry are often referred to Catastrophe models. Was there a reason not to use this terminology in the paper?

Line 6. I'm not sure what this means can you rephrase "of the development of a wide community around natural hazards as well as of the occurrence of natural hazards."

Line 10. It would be useful to be specific and say "financial protection"?

Line 11. Presumably you mean "insurance company" here?

Line 26. This sentence is very difficult to parse. I would suggest simplifying "keep refining what we know on one hand and, on the other hand, increasing insurers' preparedness to what we do not know" to "keep refining what we already know and to increase insurers preparedness for the unknown."

Line 37 Incorrect grammar. Perhaps rephrase "did not enable to seize the impact of growing exposure in particularly risk prone areas" to "were not able to assess the impact"

Line 41 "...work of characterization of the here before cited four components for various.." I'm not sure what this means can you rephrase.

Line 42 Spelling mistake? "Each peril x region"

Line 43-47 The text here on the data formats used seems rather irrelevant for a brief history of loss modelling. There could be removed to make the paper more concise and improve readability, without affecting the main message of the manuscript.

Line 48 "highlighted on one hand the non-modelled effects of the drivers of risk and on the other hand the insurance protection gap that was existing in Florida and the inefficiency of private and public mechanisms (McChristian, 2012)."

This sentence needs rephrasing – it's not clear what the "inefficiency of private and public mechanisms" is referring to.

Line 60. I'm not sure what is meant here, are there missing words? "...notably the location at (longitude, latitude) granularity and the physical properties of buildings."

Line 65 "observation data" should be "observational data"

Line 69. I'm not sure what is meant here, are there missing words? "...less structural damages on buildings and population is evacuated."

Line 93 "This enables to identify sensitive components which may..." should be "This enables sensitive components to be identified, which may..."

Line 95. "Such an analysis requires first to run the production of the hazard catalogue several times..." should be "Such an analysis first requires the production of the hazard catalogue to be run several times..."

Line 116. "identified evolutions" perhaps should be "identified improvements"?

Line 127 Delete second repetition of "in the world" for readability.

Line 128 Could you rephrase or expand on what is meant by "suppliers' default"?

Line 131 "while making a research progress" should be "while making research progress"

Line 137 "insurers do not only need to" should be "insurers need to not only"

Line 137 The recent Fiedler et al. (2021) does a good job of outlining the challenges for climate change analytics and could be cited here.

Line 147. "Over the years..." The sentence here is overlong and could be improved by splitting into two.

Line 153 Spelling mistake? "peril x region"

Fiedler, T., Pitman, A.J., Mackenzie, K. *et al.* Business risk and the emergence of climate analytics. *Nat. Clim. Chang.* **11**, 87–94 (2021).
<https://doi.org/10.1038/s41558-020-00984-6>