

Interactive comment on “Estimating exposure of residential assets to natural hazards in Europe using open data” by Dominik Paprotny et al.

Anonymous Referee #2

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The manuscript describes a compilation of available datasets useable for deriving principal data for exposure analyses. The authors show exemplarily the development of a Bayesian Network-based model for predicting building heights. The manuscript provides a very useful overview of prospective dataset and methods for assessing the values at risk in exposure and risk analyses. Thus, I recommend the publication of the manuscript. However, the manuscript has to be improved first in terms of readability.

One of my main concerns is the rather unorganized structure of the manuscript. It deals with different scales, e.g. nationally aggregated data, data from 30 major cities, different validation samples, and a local case study. Moreover, the manuscript has also different time scales. It lists different states of the datasets and includes timeseries of the temporal development of the economic values. This is on the one side a benefit in

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terms of the broad scope but hampers the readability for the reader on the other side. I urge the authors to elaborate a more thorough structure of the manuscript to help reader's orientation.

Another concern is the transferability of the model from an urban context to a rural context. This needs to be validated. For instance, Roethlisberger et al (2018) in the same journal state that a difference in the values per square meter between Centre areas (urban areas) and Residential areas of 60%. An alternative is to restrict the title of the manuscript towards urban context of Europe. The conclusion in the abstract "The study shows that the resulting standardized residential exposure values provide much better coverage and consistency compared to previous studies" is not supported by the results.

In the Introduction section, the authors state that the developed procedure is "applicable in any location". This proof is not provided (discussion about urban-rural context). Another main criticism is that the identification of residential buildings is not described. There is an explicit subsection on this topic (section "2.1 Identification of residential buildings"). However, how this identification has been done is described within brackets in section "2.2 Building size estimation" in line 109 ("(identified either through the buildings or the land use layers of OSM)") while in section 2.1 is stated that the identification of buildings and their occupancy (i.e., residential use?) is outside the scope of this paper.

However, I am looking forward to the publication of an improved version of this manuscript.

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