Interactive comment on: "Assessing population exposure for landslide risk analysis using dasymetric cartography" by Garcia R.A.C. et al.

General comments

The authors present a methodology used for dasymetric exposure mapping of population applied in Portugal that can be used from emergency managers to guide evacuation and rescue operations. The disaggregation of population data in order to get a more realistic picture of the population density (especially during different times of the day and the year) and eventually the exposure is very important for the design of emergency operations. However, the specific does not present the methodology used in a comprehensive way due to poor structure and poor English. The article needs restructuring, rewriting of the discussion session giving emphasis in the assumptions and uncertainties and a final editing from a native speaker who can significantly improve the language. For this reason I do not think that it should be accepted for publication in its present form.

Specific comments

-Abstract: Abbreviations such as BCU (line 12) have to be explained at the beginning
-Abstract: it needs rewriting to improve the language. Grammatical mistakes and total lack of punctuation (commas) make the article difficult to read and understand. This is relevant also for the rest of the text.
-Introduction: The introduction is disproportionally long in comparison with the other chapters. The authors provide a literature review (which is good) but although they explain thoroughly what risk is they do not do the same for other terms that are often used in the manuscript such as "exposure" or "dasymetric mapping". A good idea would be to divided in sub-chapters (objectives, state of the art etc.)
-Study area: Here a new piece of information appears regarding the landslide susceptibility map. Is this done by the authors? (Apparently, yes)
-Study area: Why are you working in this area? Past events? Consequences?
-Methodology: The methodology is not thoroughly explained (not at least in this chapter). The two approaches that you refer to in the following chapters should be explained here (ii). More information on obtained data could also be included here.
-Landslide susceptibility: (line 19). Why did you choose this classification method? What implications does this decisions have for the reliability of the results. This and other points should be discussed in the discussion chapter.
-Population exposure: (line 27-line 31) The authors explain here what a dasymetric method is. I think this belongs to the methodology chapter.
- In the previous two chapters (landslide susceptibility and population exposure) a number of points show up that increase uncertainty and need to be discussed in the discussion chapter. For example:

1. classification od landslide susceptibility
2. Section 3.1, line 22: "The landslide susceptibility classification attributed to each BCU was defined according to the majority landslide susceptibility class represented in the BCU"-What implications does such an assumption have to the uncertainties related to this study?
3. Criteria for the binary analysis. (residential/non-residential buildings)
4. Weighting: this also belongs in my opinion to the methodology. Who decides on the weighting and using which criteria? This is not clear…
5. Page 6, line 26. "..target zones from vector to raster…". How can this information be used by emergency planners? Wouldn't it be more practical for them to have exposure information per building?

-Page 7, lines 23-24, Revise the sentence. It makes no sense.
-Discussion: The discussion needs rewriting and strengthening. The authors do refer to limitations and advantages but just superficially. The specific study includes a large number of assumptions and uncertainties and each one of them has to be outlined. The advantages have to be illustrated by "examples" on how the results may be used by the emergency planners. Moreover, many issues are completely ignored (e.g. presence of vulnerable groups: the division between residential/non residential is not thoroughly explained.
- The authors need a conclusion chapter, outlining their achievements and describing the future perspectives in the specific field.

Technical corrections

Native speaker editing is in my opinion necessary. There are plenty of grammatical mistakes, inconsistent language (approach 1, approach 2?), mistakes in wording e.g. "study case" (instead of case study), "building limits" instead of building footprint, "people inhabitants etc. and parts that are difficult to understand (e.g. "turn off Lisbon metropolitan area"). The lack of commas makes also the understanding of the text very difficult.