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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Intercomparison and validation of building damage assessments based on post-Haiti 2010 earthquake imagery using multi-source reference data" *by* G. Lemoine et al.

Anonymous Referee #2

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The authors give a valuable synopsis about different damage assessment efforts conducted after the Haiti earthquake. There is undoubtedly a problem of very inhomogeneous data sets, different assessment methods, different data sets and different time scales. But nevertheless, the detailed comparisons of the different results are an important contribution for similar efforts in the future.

Similar to the other reviewer I am missing the comparisons with other data sets. Not only based on other data (SAR, Lidar) but also based on other methods than manual/visual interpretation. As mentioned by the authors: "Validation also provides an unbiased way to assess how new technological solutions contribute to methodologi-

cal improvements in Earth Observation based assessments. Such technological improvements may include the access to higher spatial or spectral resolution imagery, enhanced viewing capabilities or advances in automatic and interactive processing of large image data sets." In this respect the paper is limited to new field survey methods and some new data acquisitions (pictometry), but it would be even more interesting how automated methods did perform (considering the different time frames).

Conclusions are focusing too much on the special situation in Haiti (concerning especially the availability and new acquisition of a lot of very good data set, possibility of extensive field surveys etc.). I would like to see also some recommendations for areas where – due to political reasons, lower public interest etc. - satellite imagery is maybe the only available data source.

Specific comments: Introduction, especially page 1447: A lot of statements are missing any references, e.g. the descriptions of rapid mapping workflows compared to post disaster assessment etc. Is this all the authors own contribution or do you build on experiences which can be cited?

Page 1448, line 4: Is validation really providing an unbiased was or should it be unbiased? I doubt that validation per se is unbiased. As mentioned later, the PDNA had also severe time constraints....

Page 1451, line 2: Second link to the CAS data set is missing.

Chapter 2.2: what was the resolution of the satellite imagery? Was a NIR band available (for both, satellite and aerial imagery?)? To my knowledge the data sets distributed by Google were missing the fourth band as well as a proper pre-processing.

Chapter 3.0.2: ". . .class intervals: 0–1 %, 1–10 %, 10–30 %, 30–60 %, 60–100% and 100% (Miyamoto et al., 2011)" Please change the intervals to scientific correct values or did you use overlapping classes?

Page 1457, line 25: Remove "16"

Page 1463, line 25: " Overall on a total of 30 992 50×50m cells that were analyzed, almost 53% show a perfect agreement. . ." Is this really a perfect agreement (i.e. exactly the same amount of damaged buildings per 50x50 m grid cell)? Could you maybe specify how many grid cells were classified per land use unit? I hope that not most of the perfect agreements are in the agricultural area...

Chapter 5.2.2 is a bit out of the scope of the paper title: Here a comparison of estimated floor areas and replacement costs is conducted. Main problem is here, that the floor estimations come from field surveys and we get no information about the quality of this data. One can argue that the cost estimations are much more biased through not very accurate floor estimations than through the differences in damages estimations between the UWJ and the field survey. If possible I would get more information about the floor estimations (are the estimations validated?) or I would skip this chapter.

Figures and Tables:

Table 2/3/4: Combining damage grades (0-3) is biasing the overall accuracy. Especially if this class holds the highest amounts of points.

Table 5, Caption: Replace "then" by "them" in the last sentence

Figure 4: a perspective view in such a diagram is not very helpful to identify the real values (distorted view, hard to extract the exact values). I would prefer a non-perspective view, like in figure 9

Figure 5: Hardly readable. Maybe you should provide three maps with the individual patterns of the different damage assessments

Figure 6: To me the graphical representation of the correlation results providing no added value, I have problems to interpret the map. I am not sure if a larger map would be better or if a different representation is be necessary

Figure 8: see comment figure 6

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 1445, 2013.