Natural Hazards
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Discussions

Interactive comment on "UAV-based urban structural damage assessment using object-based image analysis and semantic reasoning" *by* J. Fernandez Galarreta et al.

Anonymous Referee #1

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General comments:

This study aimed at assessing structure damage based on oblique, multiperspective, highly overlapping and very high resolution imagery, where technique and examples of 3-D point-cloud assessment for the entire building and detailed object-based image analysis (OBIA) of façades and roofs are involved. The new method has good performance than traditional BDA, even though still some problems retained as prospected in this manuscript. How do authors pre-process oblique, multiperspective and highly overlapping imagery, in order to achieve a unique and consistent image for the later image-based analysis?

This paper is entirely well arranged, and only minor revision is needed before publish.

Specific comments:

———— In figure7, the legend could be misunderstood, as the color of intact roof in figure 7(a) is different from the one in figure 7(b)

In figure 8, please also explain some phenomena on connecting crack, crossing crack and inclined column in the right hand of figure 8(D).

Discussions are needed on the difference of damage detection results on brick and concrete facades.

Page 16, Lines 5-6, correct this sentence: "Nevertheless, our work focused on the 3-D point could processing, with the actual damage detection still requiring manual assessment."

As shown in Fig. 8(D), authors showed OBIA-based results, but in fig.12(B), and Page 18, Lines 6-10, authors said " yet to an expert analysing damage based on the OBIA damage features this type of misclassification posed no problem, according to the feed-back obtained after the expert-based per-façade/roof classification" . Please give some explanations on this semantic error, which still exists in the OBIA-based results.

Spelling error in reference of "Dell'Acqua, F. and Gamba, P.: Remote sensing and rarthquake damage assessment: experiences, limits, and perspectives, Proceedings of the IEEE, 100, 2876–2890,doi:10.1109/jproc.2012.2196404, 2012."

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 5603, 2014.

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