Please note that all line numbers in the responses relate to the original manuscript.

Comment: The authors took laudable efforts to quantify reliability of final outputs of simulations (e.g. hazard maps). The chief subject here is topographic ones lying within pre-existing 5 m HK-DTM and 2 m DEM created post-event. The time difference is referred clearly (5. Line 301) and does not seem to affect the results in significant ways because of the introduction and through use of unrepresentative RMSE and subjective d. The non-affectedness itself is crucial in that every hazard map is drawn before mishaps.

Response: We thank the reviewer for the overall positive feedback on our work. Regarding the reviewers first comment on the 'time difference', it is our impression that there had been a misunderstanding, possibly due to our narrative.

In our study, both the 5 m HK-DTM and 2 m DEM were created after the 2008 landslide event. The 2 m DEM was produced based on field mapping after the 2008 Yu Tung Road landslide event (line 295-296). The 5 m HK-DTM was generated later from a series of digital orthophotos, which were derived from aerial photographs taken in 2014 and 2015 (line 291-292). Between 2008 and 2014, hence during the time interval of data acquisition of the two DEMs, some infrastructures (debris-resisting barriers and a road, line 302) had been constructed. They are represented in the 5 m HK-DTM but not in the 2 m DEM, which leads to large inconsistency between the two DEMs in that particular area (line 303-304). Since we assumed the 2 m DEM to be more accurate than the 5 m HK-DTM and used the 2 m DEM to evaluate the error of the 5 m HK-DTM, we excluded data in this inconsistent area from higher accurate reference data. Otherwise, the error estimate of the 5 m HK-DTM may be unrealistically large (line 304-305).

We totally agree with the reviewer in that every hazard map should be drawn before mishaps, and believe that our study conception does not contrast this point. Indeed, one main conclusion of our study is that topographic uncertainty is important for simulation-based landslide hazard assessment. If a high accuracy of DEM source is not guaranteed, stochastic simulation should be conducted to provide such hazard map before mishaps so as to assess the potential hazard, rather than simply trusting results of a deterministic simulation (line 626-628). When there is available higher accuracy reference data, conditional stochastic simulation is preferred to generate such hazard map before mishaps. Otherwise, unconditional stochastic simulation can still be conducted to generate such hazard map for a hazard assessment to take topographic uncertainties into account.

To better convey our idea, we modify the sentence "It should be noted that the 2m-DEM and 5 m resolution HK-DTM were produced in different time periods. After the 2008 Yu Tung Road landslide, …" (line 301-302) which we believe causes the misunderstanding as follows.

"It should be noted that due to different time of DEM data acquisition, there are infrastructural factors present in the 5 m resolution HK-DTM but not in the 2m-DEM. After the time of data acquisition of the 2m-DEM, …"

Comment: The argument depends hugely upon results obtained and shared in the second JTC1 workshop (5. Line 394), which contributes to reduce three uncertain factors other than DEM to a negligible level. Zone area and fracture height can be re-adjusted, given the very results of the authors, however. The necessity (or the negation thereof) of feed-back and of iteration in the future should be commented either in 5 or in 7.
Response: We very much agree with the reviewer that not only DEM is subject to uncertainty, but release zone area, fracture height, as well as friction parameters are all potentially subject to uncertainty. All the uncertainties should be systematically quantified and the interaction between different factors should be studied eventually. In this study we decided to focus on the DEM uncertainty since this specific factor is mostly overlooked in landslide modeling and is much more complicated comparing to other uncertain factors that can be usually modeled as a probability distribution (e.g. fracture height, friction parameters, etc.). We are currently studying the relative importance of different uncertainty factors and their interaction by variance-based global sensitivity analysis. One challenge is that increasing dimension of uncertainty factors requires much larger number (tens or hundreds of thousands) of simulation runs for stochastic simulation and computational resource consuming may become prohibitively expensive. One promising solution to this challenge is to employ emulator techniques (e.g. Gaussian process emulator).

According to the reviewer's comment, the following paragraph is added after line 399 in section 5.3.1.

"It should be noted that release zone area, fracture height, as well as friction parameters may also be subject to uncertainty in landslide modeling practice. In this study we keep them fix and focus only on the DEM uncertainty which is mostly overlooked in landslide runout modeling. Future work should therefore continue to focus on systematically quantifying all the uncertainty factors and evaluating their relative importance and interaction. Researchers carrying out this work should notice that increasing dimension of uncertainty factors instantly requires much larger number of simulation runs for stochastic simulation and computational resource consuming may become prohibitively expensive. One promising solution to this challenge is to employ emulator techniques."

Comment: Another minor but non-negligible issue is conditions of the channel base treated in the case study (5). The presence or absence of sizable standing trees with roots is to be mentioned 5 Line 289, given the fracture height of 1.2m.
Response: We thank the reviewer for noticing this. The 2 m DEM is produced based on field mapping after the 2008 Yu Tung Road landslide event and reflects the bare earth at the channel base (as shown in figure 2). The 5 m resolution HK-DTM is derived from aerial photographs taken in 2014 and 2015 and includes vegetation at the channel base. Since we assume the 2m-DEM to be more accurate than the 5 m resolution HK-DTM and use the 2m-DEM to assess the error of the 5 m resolution HK-DTM, the vegetation present in the channel base in the 5 m resolution HK-DTM is not modeled

independently but treated as part of the DEM error. The HK-DTM realizations in the stochastic simulation are generated by adding the error realizations onto the 5 m resolution HK-DTM. It indicates that the channel base in the HK-DTM realizations should resemble the channel base of the 2m-DEM, which reflects the bare earth. The influence of vegetation/land cover is a very interesting topic, but is out of the scope of this study. Work in this field should be carried out in the future.

According to the reviewer's comment, the following sentences are added after line 300.

"At the channel base, the 2m-DEM reflects the bare earth and the 5 m resolution HK-DTM includes vegetation. Since we assume the 2m-DEM to be more accurate than the 5 m resolution HK-DTM and use the 2m-DEM to assess the error of the 5 m resolution HK-DTM, the vegetation present in the channel base in the 5 m HK-DTM is not modeled independently but treated as part of the DEM error."