

## REVIEWER'S COMMENTS

The paper needs to be reviewed by a native English speaker.

Generally, DSM or DEM concepts are used as synonymous, but DEM is the model of the terrain

- 1) Line 24: "Digital surface model (DSM) of the terrain". This sentence is not correct.
- 2) Keywords: DEM: DTM or DSM? "Restitution" what do you mean?
- 3) Line 70: as line 24. No correct.
- 4) Figure 1 is still the previous one! The proposed new figure (with geological map) has not been replaced
- 5) Line 84: the correct definition is 800 m/s. sec doesn't exist!
- 6) Figure 2 if the orthophoto of the site. It is quite difficult to see the "average slope" using this product. It is completely unhelpful. It is better to include the contour plots or making a 3D model.
- 7) Concerning the images or video. It is not declared the final GSD (ground sample distance). This parameter is fundamental working with digital images. Moreover, it is not declared the strategy adopted to collect the image or video. On photogrammetric point of view, which kind of flight plan have you adopted? It is necessary to include more detail about the data acquisition.
- 8) Figure 2 caption: study site is not correct: case study or test site.
- 9) In "introduction", 103-108, will be interesting to include an example of image. It is not clear if you have used the image or video. To be clarified
- 10) Line 113: replace wase with was
- 11) Line 114: the sentence is wrong. Using SfM you have generated a DSM. After, with a data processing, you have generated a DTM.
- 12) Line 115: replace imagery with imaery
- 13) Lines 122-128: you have to specify the GCPs' distribution and why you have chosen this distribution, how the GCPs' have been detected (manually or automatically), It is not clear the quality of the GSP.
- 14) Line 128: "DSM or DTM". This is a mistake!! They are not synonymous!!
- 15) Line 128: replace orthophotos.

- 16) It is important to define the setting configuration of PHOTOSCAN, for alignment, point extraction etc. a summary table needs.
- 17) Line 134: "two surfaces were found to be very similar". It is necessary to declare the entity of the differences, considering max, min and mean values.
- 18) Figure 4 is completely unhelpful. It is necessary to include a more clear figure about the flight plan, showing the final foot print of the images.
- 19) Figure 4 caption: replace Shematic with Schematic. This picture has to be completely replaced. It is terrible!
- 20) Line 135-136: image or video? No clear. It is necessary to define how the camera has been calibrated and to summarize the calibration parameter in a table. Have you tried to calibrate the images with other methods?
- 21) In the proposed correction there is a new figure 3 (about SFm) but in the paper is not included.
- 22) In Figure 5, it is important to include a bar scale
- 23) Line 159: "Noise filtering and smoothing processing" which one? Could you describe them? It could be better to include a flowchart of your process, with purpose to better understand your activity
- 24) Line 165: "a bare-Earth digital" is a terrible sentence!
- 25) In the proposed revision, you include the link of GAT tool, but it is not included in the uploaded version. To be included
- 26) Have you verified the performance of the GAT tool? Have you compared your DTM with a DTM generated by a laser scanner?
- 27) Using this algorithm (OTO), is there the risk to remove also some rocks? Could you describe the parameter adopted in the filtering?
- 28) Line 224: replace m/sec with m/s
- 29) Line 275: it is not clear why you have selected 2 case and the main differences. Please, to be clarify
- 30) Line 356: In 2D and 3D analyses, I suggest to include a table where the initial parameters are summarized. It is very difficult to understand.
- 31) 2D analyses: it is not clear how the filtering (DSM to DTM) give some influence to the final results and simulation. Is it possible that some trees or bushes have been removed? What is the power of the vegetation filtering (min object).
- 32) Figure 14 needs to be more explained.

- 33) You declare in the conclusion that "...was successfully used". How can you define the "successful" of the system and method? It is not clear and described in the paper. It is necessary to define the quality of final result.
- 34) Line 477: you declare that the 3D analysis is more accurate than 2D. how you can define this level of accuracy? In the paper is not well described this aspect. You have to be more clear.
- 35) Considering the results, it seems that it is not possible to define the correct position of the origin, even considering your expertise and your knowledge. It is not clear the real benefits of the model generated with UAV with respect the public model or a global DTM generated with RS.
- 36) References: check the references, because there are some incongruences (in some references pages are included in someone not, etc...)