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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Brief Communication: Use of multicopter drone optical images for landslide mapping and characterization" *by* Guglielmo Rossi et al.

Guglielmo Rossi et al.

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We are grateful to the reviewer for the comments and the careful reading and for all the comments provided. We have modified the test according to his requests and we think that now the manuscript has substantially improved. We think anyway that the description of the drone should be left as it is, since reports the main features of the drone that we have entirely designed and built by ourselves. Concerning the payload the drone maximum useful load is 10Kg and we used a fraction of the load for this survey mission. Our final aim is to increase the number of scientific instruments to be carried in our future survey. We added in the text the error of the landslides volume

measurements, based on the average error in meters of the three point clouds. Furthermore, a brief discussion about the main advantages of an aerial photogrammetric survey with respect to a terrestrial survey was added in section 5 (Discussions), along with more precise data about the survey, processing and post-processing time, as requested by the reviewer. Actually, some comparative experiments with terrestrial laser scanning were performed in the site but we chose not to include the results this work. For this reason, the original sentence was modified as follows: "The drone survey has proven to be an easy and cost- and time- effective approach for landslide monitoring and surveying, thanks to these potentialities and to its repeatability, it will become an integral part of the monitoring system in Ricasoli village."

Answer to the Minor Comments We were not able to correct the error "." in the abstract since we did not find it. Visibility of Scales in Figure 4 was increased.

Please also note the supplement to this comment:
http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2017-46/nhess-2017-46-AC2-supplement.zip

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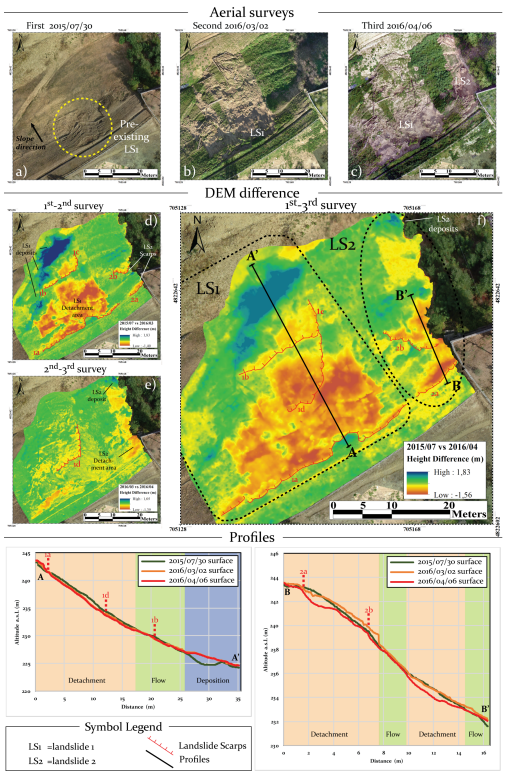
Aerial surveys
First 2015/07/30
Second 2016/03/02
Third 2016/04/06
Pre-existing LS1
Slope direction
LS1
LS2
a)
b)
c)
DEM difference
1st-2nd survey
1st-3rd survey
2nd-3rd survey
d)
e)
f)
LS1 deposits
LS1 Scarps
LS1 Detachment area
LS2 deposits
LS1 Detach. front area
N
A
A'
B
B'
2015/07 vs 2016/04
Height Difference (m)
High : 1,83
Low : -1,56
0 5 10 20
Meters
Profiles
2015/07/30 surface
2016/03/02 surface
2016/04/06 surface
Detachment
Flow
Deposition
Distance (m)
Symbol Legend
LS1 =landslide 1
LS2 =landslide 2
Landslide Scarps
Profiles

Fig. 1.