

## ***Interactive comment on “Exploiting LSPIV to assess debris flow velocities in the field” by Joshua I. Theule et al.***

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The paper on "Exploiting LSPIV to assess debris flow velocities in the field" by Theule et al. addresses relevant scientific and technical questions and presents data derived with a novel method and a new concept. The data and method are up to international standards. All applied methods and assumptions are valid and clearly outlined. Results are sufficient to support the interpretations and conclusions and the authors reached substantial conclusions. Availability of the data, the methods used and the calculations made are well described and the results obtained are sufficiently complete and accurate to allow reproducibility by fellow scientists. The title reflects the content of the paper unambiguously and mentions the main keywords. The abstract provides a concise, complete and distinct summary of the work done and results obtained. Hence,

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title and abstract are pertinent and easy to understand to a wide and diversified audience with the exception of the abbreviation "LSPIV". But this draws the interest of those who are not familiar with this technique. Mathematical formulae, symbols, abbreviations and units are correctly defined and used. The size, quality and readability of the figures are adequate to the type and data presented. The authors give proper credit to previous and related work and number and quality of the references are appropriate and accessible by fellow scientists. They indicate clearly their own contribution. Some additional references are given in the section below. The article is well structured, clear and easy to understand and there is no part of the paper that needs to be changed. The technical language is precise and understandable and the English language is of good quality, reads fluent and simple.

Details:

p.1, line 30: no hyphen in debris flow

p. 2, line 55: avoid repetition of vary. Maybe use "...different surges can vary...."

p. 15, line 272: insert "laterally" before "deposit"

p. 16, line 77: write "debris-flow front", with hyphen and -r-

p. 17, line 279: write "debris-flow LSPIV velocity...", include mean/average to the figure caption and add a value of the temporal rate/point density of the red, yellow and blue line

p. 18, line290: there seems to be missing something in this sentence. Please check

p. 19, line 299: reformulate the sentence. Maybe start with "We suspect, we hypothesize..."

debris flow with hyphen when used as adjective, e.g. p. 21, lines 341, 355 or p. 22, lines 359 and 360

It is not described well enough how much the effort is and how good the foundations

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must be for the accuracy to be achieved.

no comments to figures or tables

Citations: Please add the new paper by Jacquemart et al. to your introduction. Maybe just add "...the application of LSPIV from video images on debris flows..." to p.2, line 60.

<https://link.springer.com/article/10.1007/s11069-017-2993-1>

General remarks:

Exciting, well-written paper, which reflects both the motivation, the derivation and application of the method and the initial results. Read with great interest!

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2017-182>, 2017.

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