

Interactive comment on “The 27 May 1937 catastrophic flow failure of gold tailings at Tlalpujahua, Michoacán, México” by J. L. Macías et al.

J. L. Macías et al.

macias@geofisica.unam.mx

Received and published: 19 January 2015

This work, presenting investigations concerning the reconstruction of a significant historical flood event from 1937, is suitable for a publication on Natural Hazards and Earth System Sciences. Even if not presenting novel research, the submitted work is of potential interest for the presented data and analyses that are implemented for the direct and indirect reconstruction of the flood dynamics and associated effects using historical as well as actual information. Nevertheless, I do believe this manuscript requires a major revision before being resubmitted for potential publication, after a further round of review, for the need of addressing some General concerns as well as some specific

C3094

request of modifications (comments) that are here after inserted. Major General Comments refer to the structure of the paper as well as for the need of additional work for improving the presented analyses and the technical soundness of the research, while specific comments are explicitly indicated in a commented version of the text (see attachment).

Replies to review by Dr. F. Nardi:

General Comments 1) The introduction is properly developed for guiding the reader in understanding the presented event, as respect to the cited main works concerning the same case study, but I do agree with first reviewer about the fact that the additional value of this work is not clearly stated. This inconsistency in the structure is also reflected in the analyses sections and the discussion in which there are some redundant information, mixed with several qualitative assumptions (see also General Comment n. 3) and several sentences in which conclusive remarks and comments are misleadingly inserted before the final sections.

We followed most of the comments pointed out by the reviewer in the new version of the manuscript. In this new text, conclusions stated throughout the text prior to the Conclusions Section were deleted (see annotated text).

2) Geometry and dynamics of the extreme flood event are extensively analyzed and described in the text, but the validation of the presented novel investigation is missing, while authors provide too often a subjective critical view and reconstruction of the "facts". While the first reviewer suggested the use of numerical models (GIS and 1D hydraulic model), and I agree again with him, I also suggest to develop specific graphics (flow charts, sketch drawings, ..) to represent the study domain and associated processes and features. I do invite authors to draw a sketch of the morphologic/geometric properties of the retaining structure failure, with the indication of the flood flow geometric and dynamic properties. This representation would be very interesting especially if combined with the expected results of the applied DEM-based GIS and 1D hydraulic

C3095

model of the event.

We included the sketch drawings of the flow deposit along its path as suggested. Unfortunately, no record of the retaining structure failure exist or whatsoever, we would love to have such important information. So, we have little pieces of information from which we assumed the geometry the breached to perform our discharge calculations.

3) As indicated several times in the attached commented version of the manuscript, there are several statements that are too subjective, or even too "folkloristic", and not proper for a technical publication like this one for NHESS. I invite authors to avoid such statements and review these specific comments unless if properly supported by referenced papers or by validated information and/or simulations.

We fixed the parts called "folkloristic" mentioned by the reviewer and addressed all his comments in the new version of the manuscript.

Please also note the supplement to this comment: <http://www.nat-hazards-earth-syst-sci-discuss.net/2/C2421/2014/nhessd-2-C2421-2014-supplement.pdf> The supplemented pdf file was modified accordingly and comments answered (see file)

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/2/C3094/2015/nhessd-2-C3094-2015-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 5361, 2014.

C3096

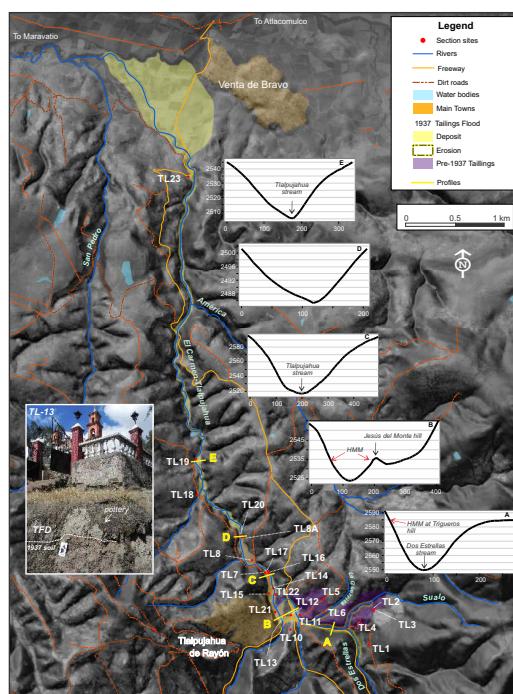


Figure 8

Fig. 1.

C3097