

Interactive comment on “Understanding shallow landslides in Campos do Jordão Municipality – Brazil: disentangle the anthropic effects from natural causes in the disaster of 2000” by Rodolfo Moreda Mendes et al.

Anonymous Referee #2

Received and published: 21 August 2017

The paper addresses a very interesting real case, trying to understand in detail the causes why simple relations between rain intensity and slope stability may be inaccurate for certain regions and conditions. The work is scientifically adequate and the results are interesting regarding the risk management in development countries. Regarding the written document, there is a large number of typing mistakes, signaled in the attached file. In what refers to the references, there is a number of citations not included in the references (see attached file), as well as some references not cited in the text. This topic needs a careful revision before publication. There are also some

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mistakes in the cross-references, mainly in the Figures.

Regarding scientific improvements some questions arise: 1 – To determine the SWCC, pressure plates and filter paper was used. Normally, the first equipment is used in drying paths and the second in wetting paths. How the curves were made compatible in the transition points. 2 – It is emphasized in the conclusions the need to perform reliability calculations in future works which the reviewer thinks is an important contribute. In any case, considering the author as intervals for the parameters of each geotechnical horizon, at least some comments could be done regarding the influence of this variability in the FS.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2017-242/nhess-2017-242-RC2-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2017-242>, 2017.

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1 **Understanding shallow landslides in Campos do Jordão Municipality – Brazil:**
2 **disentangle the anthropic effects from natural causes in the disaster of 2000**

3 Rodolfo Moreda Mendes¹, Márcio Roberto Magalhães de Andrade¹, Javier Tomasella¹, Márcio Augusto Ernesto de
4 Moraes¹, Graziela Balda Scofield¹

5
6 ¹National Center for Monitoring and Early Warning of Natural Disasters, Parque Tecnológico/São José dos Campos, Estrada
7 Doutor Alino Bondesan 500,12247-016, São Paulo, Brazil

8 *Correspondence to:* Rodolfo Moreda Mendes (rodolfo.mendes@cemaden.gov.br)

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10 Keywords: shallow landslides, natural and human factors, numerical modeling, early warning system

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13 **Abstract**

14 Located in a mountain area of Southeast Brazil, the municipality of Campos do Jordao has been hit by several landslides in
15 recent history. Among those events, the landslides of early 2000 were significant for the number of deaths (10), the
16 population affected and the destruction of infrastructure that caused. The purpose of this study is to assess the relative
17 contribution of natural and human factors in triggering the landslides of the 2000 event. To achieve this goal, a detailed
18 geotechnical survey was conducted in three representative slopes of the area to obtain geotechnical parameters needed for
19 slope stability analysis. Then, a set of numerical experiment with Geo-Slope software was designed including natural and
20 anthropic factors separately. Results showed that natural factors, thus is, high intensity rainfall and geotechnical conditions,
21 were not severe enough to trigger landslides in the study area and that human disturbance were entirely responsible for the
22 landslides events of 2000. Since the anthropic effects used in the simulations are typical of Brazilian hazardous urban areas,
23 we concluded that the implementation of public policies that constrain the occupation of landslide susceptible areas are
24 urgently needed.

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Fig. 1.