

Interactive comment on “Landslide susceptibility from mathematical model in Sarno area” by G. Capparelli and P. Versace

Anonymous Referee #2

Received and published: 17 December 2013

The present paper describes the application of the SUSHI model on a specific event recorded the 5 May 1998 in Campania. In the complex, the paper is interesting, but requires additional effort in the organization and presentation of the results.

The application of the SUSHI model should be better described providing all necessary information that would allow the replication of the experiment. It is not clear to me where is located the transect that have been studied and how this have been selected. Moreover, the authors provide a description of the main physical characteristics of the soil layers, but neglect to describe the approach used to model the Richards equation. In this context, what is the resolution used to describe the process on the x and y axes?

The presentation of the results is extremely synthetic leaving to the readers many as-

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pects open to a personal interpretation. At the present, the discussion is limited to a number of examples that sketch the complex dynamics of the phenomena under investigation. The discussion seems to be too qualitative missing somewhat the main objective of the paper that is to improve actual tools for “the identification of the triggering conditions leading to slope instability”.

A critical aspect in the model application is the model validation, soil pressure measurements have only been used for the identification of the initial condition of the model run. There is any other information that may be used for the validation of the model. It is true that the model is able to identify a security factor slightly below 1 around the date of the mud flow for a depth of 0.7m, but a physical description and interpretation of this result is critical for a full comprehension of the paper and should be discussed in details.

Minor Aspects

- The study area should be better identified with a map that clearly identifies the basin area of the case study.
- In the description of the location of the two profiles depicted in figure 4 A and B, it would be useful to describe the actual position of each location in figure 2.
- Use the dot as decimal separator in the figures.
- Check the reference to Capparelli and Versace (2010) that is quoted as 2011.
- Page 12649: line 1: leave the space after τ .
- Table 2. The values of bubbling pressure are not reported.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 12643, 2013.

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