Geoscientific
Model Development
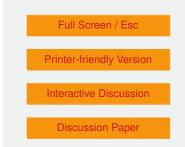Discussions

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Interactive comment on "A strategy for GIS-based 3-D slope stability modelling over large areas" *by* M. Mergili et al.

Anonymous Referee #2

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General Comments

The proposed paper introduces a) an open-source, multi-core processing application (r.slope.stability) on landslide susceptibility mapping over large areas capable of computing both FoS (factor of safety) and the probability of slope failure (Pf) parameters; b) the efficiency and fastness of this application compared to the single-core version (r.rotstab); c) parameterization strategies on field-measured and heterogeneous geotechnical and soil depth datasets; d) and how it affects the landslide susceptibility map (FoS and Pf) for shallow landslides of Collazzone area in Umbria. Each of these works contain novelties and therefore very valuable for the GMD community. However this wide range of topics makes difficult to maintain the focus of the paper. This should be the efficiency, fastness and accuracy of the multi-core processing algorithm.

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Therefore more technical details on the hardware and comparisons should be provided on the different runs (e.g. in tabular form). More detailed evaluation/validation of the results on the test site compared to the earlier landslide susceptibility maps and the landslide inventory might help the reader to put the results in a broader context. The input parameters are perfectly summarized in tabular form, the results of each sampling strategies (Sect. 5.2) should also be presented similarly with shorter discussion, helping the easier comparison and maintaining the focus of the paper.

Interactive comment on Geosci. Model Dev. Discuss., 7, 5407, 2014.

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