**Natural Hazards
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Discussions

Interactive comment on "Application of a fast and efficient algorithm to assess landslide prone areas in sensitive clays – toward landslide susceptibility assessment, Sweden" by C. Melchiorre and A. Tryggvason

Anonymous Referee #1

Received and published: 15 April 2015

Dear authors,

the paper regards landslide susceptibility assessment in sensitive clays at national scale. The proposed methodology is based on a procedure which uses soil data and Digital Elevation Models to detect areas prone to landslides and has been applied in Sweden for several years. Landslide susceptibility assessment has been carried out through an algorithm developed in a GIS environment that takes into account some important parameters such as depth to bedrock and the Quick Clay Susceptibility Index

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Interactive Discussion

Discussion Paper

(QCSI). The manuscript is worthy to publishing in the journal. I don't have any particular concerns regarding the methodology proposed but in my point of view the major criticalities of the paper are related to its general readability and clarity. For this reason my recommendation is that the manuscript can be accepted after minor revisions. Here below my specific comments:

*At the end of the Introduction the description of the aim of the paper is hard to follow. You introduce several different concepts, which in my point of view have to be explained with more accuracy. For example when you example the ratio dH/dL a figure could help to make the text more comprehensive and to help the readers. I suggest you to state in a more clear way the objectives of you work and to leave any specific descriptions of the methodology to section 3.

*Still concerning the Introduction I would suggest you to enrich the bibliography on landslides susceptibility assessment that it is too poor for an original scientific paper.

*In the text you often make use of abbreviations but sometimes you don't define them, For example what is NNH and SGU? Please define them the first time you mention.

*Even though the description of the methodology is fine (section 3), section 4 concerning the analysis and results is again not really comprehensive. My suggestion is to reduce the length of this section, to simply report the results and to leave any discussion of the results for the following section. Section 4.1 can be moved to section 3 concerning the methodology.

*In figure 1 and 5 I would suggest to better highlight landslide scars with another color, maybe red.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 7773, 2014.