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Comment

# ***Interactive comment on “Assessment of impact of mass movements on the upper Tayyah valley’s bridge along Shear escarpment highway, Asir region (Saudi Arabia) using remote sensing data and field investigation” by A. M. Youssef et al.***

## **Anonymous Referee #2**

Received and published: 25 February 2015

This manuscript comprises descriptions of gravitational slope deformations along a road section in Saudi Arabia. However, this manuscript is clearly lacking innovation. It is just a report of slope stability problems along a road section in Saudi Arabia.

Additionally, there are important weaknesses in the English language, which make many parts difficult to understand. There are numerous basic grammatical errors in the English language (wrong verb forms, problems with singular vs plural, use of “the”, fragmental sentences etc). In several cases technical terms are wrong or used unusual

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(like for example “raveling failure” instead of rock falls), which again complicates the understanding of the entire text. Furthermore, there are serious problems with the structure of the manuscript (see the comments in the following paragraphs).

One existing classification scheme should be consistently used to group the different landslides in the study area. This should be described and cited. At the moment the used classification is not consistent, neither internally within this manuscript nor with existing classifications.

The conducted kinematic tests are not sufficient. Structures should not be limited to one joint set (I suppose that there are more than one joint set or foliation in the rock mass) and different kinematics should be tested (like wedge and toppling failure besides planar sliding). By the way, the kinematic test for planar failure gets clearer in a figure with plotting poles instead of great circles for the planes.

The “Introduction” is rather poor. There is no clear structure and it leaves the reader without any clear aim for this study. Several parts seem not to be relevant for the following content of the manuscript. The literature review should be extended with respect to international publications as well as more recent publications. One important technical point is that the authors seem not to be aware of the difference in between susceptibility and hazard. I got the feeling that those terms are used simultaneously.

The “Method” section is insufficient and should be structured better. As it is now, the applied methods are not clear to the reader. Just to give some examples: What type of structural data have been collected and how? What do the authors expect as “standard field investigations”? Many parts of the “Results and discussion” section contain descriptions of methods and should actually be placed here. Furthermore, there are some contradictions in between the described methods in the “Method” section and in the “Results and discussion” section. On the other hand, the “Results and discussion” section describes far too few real results. The map with the inventory should be presented first as a main result, making all following results easier understandable. It

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would be beneficial to summarize the inventory with some basic statistics. At least a table with all mapped landslides and their basic characteristics is necessary. I do not see a difference in between section 5.1 and 5.5 and recommend combining them as a first results section. Section 5.1 can probably almost entirely be moved to the “Method” section.

I think this manuscript could be improved significantly by (1) a rigorous restructuring (2) an extended introduction (including a clearer aim) and (3) a language check by a native speaker. This may be enough for resubmitting this manuscript to a regional journal. However, for an international journal it needs to be extended by innovative approaches or techniques.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 497, 2015.

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