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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Technical Note: Erosion processes in black-marls at the millimetre scale, the input of an analogical model" *by* J. Bechet et al.

Anonymous Referee #1

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Soil erosion in badlands is a major environmental problem and therefor the topic of the study to investigate different processes at the millimetre scale is an interesting question. The authors present an exciting experiment. Unfortunately, I am a little concerned that the results are not really discussed accurately, so I cannot recommend publication right now. However, if the results on the identified processes are brought into an adequate scientific context, the authors should be invited to resubmit a manuscript.

General comments:

While the chapters "Introduction" and "Data acquisition and processing" contain some

informative citations, non are found within the following chapters, where the results should be discussed based on the existing literature.

Three citations mentioned in the references-list cannot be found within the text.

It is recommended that non-native speakers have their articles checked by a native speaker.

Specific comments:

Already in the introduction, an important aspect "splash erosion" should be mentioned.

Soil physical properties are ignored completely, although besides rainfall soil texture is a main component concerning the observed processes.

It would be interesting to have more explanation about the three month drying, compared to in situ drying situations (soil moisture content?).

Table 1 is not mentioned in the text. The authors decision about "unnecessary points" is not clear (at least up to 22%).

Swelling has been measured as 1.5 to 3mm. Is it possible to give a value for creeping?

If FWHH is stated it should be declared "full width half height"

Probably it would be better to split Fig 4. The observed processes would be more easily to detect, if all sections would be turned upright.

Is it possible that both graphs show the same section A-B, shouldn't graph II. Compression & Creeping be C-D? Graph I. Micro-Landslides has axis values in [m], graph II. Compression & Creeping in [mm] with a similar range, is this correct?

The explanation of the observed processes in the text associated with fig 4 is somewhat confusing (swelling of the ground (Fig. 4, III) or (Fig. 4, II and IV)?.

Technical corrections:

There are some typing errors, which can be easily found using a spell aid. (dimensionnal, colors, metallic, . . .) others should be carefully traced (e.g. Oostwood, . . .)

As mentioned at the general comments it is recommended to have the article checked by a native speaker. (e.g. has been extract from; with a measurement of 5.2 mm; the potentiality; installation covers by a tent, . . .)

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 2263, 2014.