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.

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1 General

The remarks about methodology will help us to improve the paper, but we will not be able to produce generic conclusions. The object if this short note is more related to underline the processes that can be observed with new techniques such as Lidar. We were not expecting such results, and above all to highlight the micro-processes that are important for mass movements at micro-scale and also for infiltration. The goal is to open a door toward potential observations. Such topic will provide a lot of work for

researchers, because it will improve the knowledge on the processes of saturation and deformation of the top soil. The paper does not pretend to solve these problems.

2 General remarks

2.1 English An improvement of the English will be performed, even if one of us is a native English speaker. But it seems he is not yet performant for scientific writing. We thought it was ok.

2.2 Weight We did not measure the weight before and after, first because we have only natural rainfall (evaporation, infiltration). The total budget will be performed in an other setup, with smaller amount of material involved.

2.3 Soil profile The texture of the soil is similar to one of the previous work on DRAIX marls (Maquaire, 2001; Mathys et Klotz, 2008; Mathys et al., 2005). In fact we discovered that a paragraph was deleted by accident from the final version of the paper, this will be reintroduced and enriched by a soil profile and a description of the surface. 3 Differentiating processes The visual observation permits to distinguish between the different processes. The total swelling has not been calculated, as it has been observed only locally.

4 DEM

The creation of a DTM in a grid format is better to analyse the differences (see Abellan et al., 2009). The DEM resolution is 2 mm. Manual cleaning is the treatment by hand of the points of the Lidar that are artefacts or not useful, i.e. rain drops, box walls etc... The threshold corresponds to the accuracy we can get by trial and error procedure.

5 Analogical model

This analogic model is in fact very close to natural conditions, as the soil is not disturbed. We used natural rain, but it still permits to observe micro processes. Maybe the term "analogical" must be avoided.