

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.

J. Bechet et al.

michel.jaboyedoff@unil.ch

Received and published: 8 July 2014

The referee #1 shows a great interest by using the term “an exciting experience”, but he pointed out that the discussion is weak. This is true, because at the origin we wanted just to show the peculiar observations we did. We will take into account these remarks by putting more emphasis on some aspects and also indications that some processes were not detected or not observed. It is also true that some of the cited papers are not used for discussion. This comes also from the fact that, one year ago, we could not find papers dedicated closely to our observations. Some recent papers are now closer. Nevertheless the papers will be included in the discussion. These small

C2265

“mass-movements” must be put in perspective with infiltration, erosion and detailed observations. We will link them with observations of mini debris-flow (MFD; Oostwoud Wijdenes and Ergenzinger, 1998) and quote some other papers. The primary goal was to focus on the observed process that is why some lack occurred, we did not focus on the method, which are not really complicated. We probably did a mistake by using “technical note”, in fact this work is more a short note. Splash erosion is important but depends on the state of the surface of the regolith, i.e grain size and shape, thickness and weak cementation (Maquaire, 2002; Mathys and Klotz, 2008). In our setting it was not significant enough to be detected by Lidar, but it was observed. At the beginning of the experiment we were looking for such processes, but we were not able to detect them. Nevertheless, when the top of the regolith is well developed, heavy rainfalls permit to set in motion thin marl plates (several millimetres in diameter) which were slabbed during winter time. We agree that some precision must be added in the text about this unobserved process in our present setting. It is not necessary at present to look at the drying because during long periods, natural conditions are fully dried by hot weather and solar radiation affecting the dark marls. The drying was simply slower, and the soil preserved. Table one will be quoted. Ok for FWHH More explanation will be given for the point cleaning, but it concerns mainly artefacts and the box. The creeping can be given for the observed creeping zone. We will split figure 4 and correct the scale and the labels A-B. The legend of figure 4 will be clarified, there are mistake in the labels.

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

C2266