

Interactive comment on “Shadow analysis of soil surface roughness compared to the chain set method and direct measurement of micro-relief”
by R. García Moreno et al.

Anonymous Referee #2

Received and published: 24 June 2010

First, this paper validates a recently developed method for determination of soil surface microrelief, the shadow analysis. Second, performances of three methods, i.e. pin-meter, chain and shadow analysis were compared both in laboratory and field conditions. The paper also points out the importance of soil microtopography for issues such as assessment of soil quality, soil microbiota distribution and therefore biogeochemical cycles in soil. The advantages of the newly developed and non-destructive shadow analysis method in terms of easy of handling and time saving over the chain set and the pin-meter are shown. The shadow method is also promising for further studies on soil surface roughness decay under rain or wind, because of its non-contact nature. All the used methods discriminate between different degrees of soil surface

C1536

roughness produced by different tillage tools. In general, the manuscript is well written and organized, and represents an original contribution. It is easy to understand. In my opinion, it should be acceptable for publication following minor revisions. My specific comments are as follow: 1.- Page 1027, lines 8 to 12: I agree with the comments of the first reviewer regarding the meaning of standard deviation (SD) and coefficient of variation (CV). This issue should be more tightened up in the final version. 2.- Page 1031, line 23: “2-cm intervals”. However, in the same page, line 26 and in the page 1032, line 11, and line 13 “20 mm”. Please be consistent. 3.- Page 1032, line 24. “xi is the elevation measurement”. I think that xi is the location of the elevation. 4. - Pag 1043, Table 1. I have several suggestions. First, the site E.T.S.I.A-U.P.M. seems as if there were two places; here the suggestion is to delete the site or to write it in one line. Second, the standard deviation could be written in the same line of the mean using the symbol \pm , for example 2.14 ± 0.10 . Finally, the colour should be written in only line. Please check the colour characteristics.

Interactive comment on Biogeosciences Discuss., 7, 1021, 2010.

C1537