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Biogeosciences Discussions

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.

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further publications. Also, I want to clarify specifically the comments:

Comment 1: The differences considered between both indexes are already explained in the manuscript referred in the paragraph, for that reason we did not go through the whole explanation in this case. I invite you to read this article to clarify the ideas:

García Moreno, R., Saa Requejo, A., Tarquis, A. M., Barrington, S., and Díaz Alvarez, M. C.: A shadow analysis method to measure soil surface roughness, Geoderma, 146, 201–208, 2008.

Comment 2: The hour to get the pictures was obtained considering that the angle projected by the sun light is a measure in an equatorial coordinate system. The Equatorial Coordinate system uses the world itself as its axes. Solar Hour Angle, or solar incident angle, for a particular location on the earth is zero when the sun is straight overhead, negative before incident light is 90° and positive in the afternoon. The local hour will depend on location, and time of the year for the local time, winter and summer. Actually is the same theory for the solar time systems, UTC (Universal Coordinated Time) based for the calculations related to solar incident angle. To assure that the time calculated was right for the incident angle, the authors measure the angle of the incident light using a rod, assuring that the shadow was the same length that the real object. Since the theory used is a very basic calculation we did not consider explaining the basis here.

Comment 3: You are right it is a typographical error and xi is the location of the ith measurement, and Z (x) is the elevation.

Comment 4: Again, you are right, the contrast in both figures between lines and background should be greater; we will consider this comment for further improvements. Also, greater sizes for the equations would be more visible.

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