

## ***Interactive comment on “Quantifying the changes of soil surface microroughness due to rainfall-induced erosion on a smooth surface” by Benjamin K. B. Abban et al.***

### **Anonymous Referee #1**

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The manuscript entitled “Quantifying the changes of soil surface microroughness due to rainfall-induced erosion on a smooth surface” (Reference number NPG-2016-76) authored by B.K.B. Abban, A.N. Papanicolau, C.P. Giannopoulos, D.C. Dermisis, K.M. Wacha, C.G. Wilson, and M. Elhakeem presents results from a simulated rainfall experiment consisting of applying three different intensities to a smoothed bare soil surface. Authors calculated two widely-used indicators of surface roughness and discussed the implications of their results for modelling approaches. The reported work is interesting and fits within the scope of Nonlinear Processes in Geophysics. However, the manuscript has an unusual organization and authors mixed methods with results and discussion. Moreover, relevant information is missing from the Materials

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and Methods section. Another major concern that I have after reading this manuscript is the feeling that authors overestimated the relevance of their results and reached conclusions that are not sufficiently proven by their data, especially because of the number of events that they experimented (only three, one per rainfall intensity with no replications). Finally, a few English mistakes must be corrected. In the following lines, I provide the authors with some suggestions in order to improve their manuscript. They must correct them in order that this manuscript achieves the standard quality for being published in Nonlinear Processes in Geophysics. Therefore, I recommend the rejection of this manuscript. However, if the editor feels that the research presented is of interest, I made a great number of comments and suggestions in an appended file.

Please also note the supplement to this comment:

<http://www.nonlin-processes-geophys-discuss.net/npg-2016-76/npg-2016-76-RC1-supplement.pdf>

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