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Interactive comment on “A multifractal approach to characterize cumulative rainfall and tillage effects on soil surface micro-topography and to predict depression storage” by E. Vidal Vázquez et al.

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Thank you very much for your constructive comments. Our answer is as follows:

First, in the introduction section of the final manuscript differences with previous work have been more thoroughly addressed. Main points of this manuscript are: the use of microrelief data sets obtained with low technology devices such as pin meter, field experiments under natural rainfall conditions and tillage effects on parameters obtained by multifractal analysis. However in previous work the multifractal approach was used

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for data sets collected by laser scanner in laboratory conditions under simulated rainfall. Second, in the final manuscript version, we rewrote the conclusions as suggested by the referee.

Third, the referee is absolutely right in his/her assumption that the errors of generalized dimension are too big for $q = 10$ and $q = -10$. This issue had already been addressed after the initial submission. Unfortunately several mistakes have been made, when submitting the BGS manuscript. Now in the final version values of D for $q = -10$ have been deleted in Table 3, Table 4 and Table 6, and Figure 4 has been redrawn. Accordingly, the “Results and Discussion” section has been slightly modified according to the referee’s comments and suggestions.

Finally, when estimating MDS, impeded or free drainage at the small plot border is a initial condition. Big differences in MDS between impeded and free drainage conditions are well known from previous references and free drainage seems not to be a realistic scenario for small plots of about 1 square meter. Our result suggest that information resulting from spectral complexity also agree with the impeded drainage scheme. These aspects have been considered in the final manuscript.

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