

Interactive comment on “Organic carbon, water repellency and soil stability to slaking under different crops and managements: a case study at aggregate and intra-aggregate scales” by A. Jordán et al.

Anonymous Referee #1

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The manuscript under review describes organic carbon contents, contact angles and stability of differently sized soil aggregates obtained from differently managed (cropping, tillage) Mediterranean soils. Information on properties of differently sized aggregates as well as on coatings aggregates are of interest because of their potential effects on organic matter stabilization or soil erosion among others. However, the manuscript need a careful revision since (i) the problem(s) the authors are interested in as well as the aim(s) of the study need to be clarified/specified, (ii) several statements are unclear, (iii) details and references on procedures/methods (i.e., separation

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of different aggregate size classes) are missing and (iv) the results chapter needs to be restructured. In consequence a careful revision is needed before a complete review will become possible. Some details: P1 In general an abstract should consist of short sentences reflecting introduction, problem, aim, material and methods, results, discussion, and conclusion. L13: should be changed into: . . . of differently sized aggregates, and of aggregate coatings and interior from . . . L16 add sampling depth., and the method of aggregate fractionation L18 SOC content of the bulk soil samples (< 2mm) L19 . . ., however, tilled soils show higher?/lower? SOC contents as compared to the mulched ones. L21 OC content in the studied soil aggregates generally increase with decreasing aggregate size. (I assume this finding is not really new?) Rewrite. . . / Clarify.. L24 shorten into: In case of mulched soils such differences were not significant. L26ff clarify the meaning of these sentences.

Introduction. P2 The introduction needs to be rewritten to clarify the problem the authors are interested in. References should be added that reflect the importance of the investigation. The aim(s) need to be specified; Explain why are you interested in this study.

P3 L18 Add the sampling depth? Which method is used for aggregate fractionation, add references or describe in detail. Avoid repetitions. Define the term “coarse aggregate” P4 L2 rewrite: Specify the size of the “Coarse” aggregate. Use this instead of “Coarse” aggregate. Please use for the “abrasion chamber” the technical term given by Park & Smuker. L5 duration in sec/min? L7 is it only weighted or is it separated. . . . How? Clarify.

L12 I assume OC content etc. is analyzed for the air dried soil samples sieved to pass 2 mm, and the samples of the different aggregate size classes and the aggregate layers/Coatings?; Please clarify.

Add references for all of the used methods.

L17 which subsample?: the aggregate coatings? L24 is EPT done for bulk and aggre-

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gate samples? Explain the pretreatment? Add a description on the method/procedure used to determine the slacking stability of aggregates (all size classes?).

P5 L26 OC content of soil aggregate (??? size fractions). . . . L27 Are those data mean values and are they different to the ones mentioned at P6 L3 to 10? The results chapter needs to be restructured to clarify which data belong to bulk samples which ones to (which) aggregate size fraction/aggregate layer use term and abbreviation consistently throughout the whole text. Please add clear information on the objects the data belong to.

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Fig. 2 rewrite the figures captions: Mean content of organic carbon in differently sized aggregates (. . .size classes) from mulched and conventionally managed soils under apricot, citrus, and wheat.

Fig. 3 rewrite accordingly

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Before a careful and complete review becomes possible it is necessary that the authors (i) clarify the problem they are interested in, (ii) specify their objective(s), (iii) add important details in Materials and Methods, (iv) use technical terms correctly and consistently throughout the whole manuscript. Additionally the results as well as the discussions need to be restructured/rewritten to differentiate between data from bulk samples, aggregate size fractions and those of aggregate coatings/layers/cores.

Interactive comment on SOIL Discuss., 1, 295, 2014.