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Interactive comment on "Iron and aluminum association with microbially processed organic matter via meso-density aggregate formation across soils: organo-metallic glue hypothesis" *by* Rota Wagai et al.

Anonymous Referee #2

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Wagai and co-workers present a thorough, comprehensive study in which they couple a multi-stage density fractionation on 23 different soils with selective Fe-fractionations. The results support their hypothesis that most of the organic material is contained in aggregates of Al/Fe complexes, Al/Fe oxides and clay minerals. The validity of the study is of course strongly dependent on the selectivity and other artifacts of the fractionation methods. However, the authors give high recovery rates and discuss possible errors in great detail. I support publication with very minor revisions.

Abstract: I think that the term "density fraction locations" (Line 12) and the sentence in

lines 17-18 are hard to understand before the article is read. Please consider alternative phrases.

Line 21: Please include that the assumption of having microbial processed OM is based on C/N ratios

Line 27: why is the OM supposed to be stabile?

Manuscript: Line 141: Why were the fractions dried using different methods?

Line 291; Figure 6: I wonder why all SEM images look so similar. Everything seems to be aggregated. Is that also the case for the original soils? Or is it possible that the polytungstate treatment promotes aggregation?

Figure caption: where do you see clay coatings? Can you add arrows?

Line 428: delete "extractable"?

Line 506: correct "understanding"

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