

Interactive comment on “Paleosols can promote root growth of the recent vegetation – a case study from the sandy soil-sediment sequence Rakt, the Netherlands” by M. I. Gocke et al.

Anonymous Referee #2

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General comments

The paper is well written and structured and is of high interest for the research community dealing with pedogenetic effects on soil depth specific element cycling, root growth, and carbon distribution and the paper has the potential to make a strong impact in this area of research. The laboratory and field methods are well chosen and described and are suitable to answer the raised research questions. However, the statistical evaluations are not valid from my point of view, which impedes the publication of the paper in its present form as well as the evaluation especially of the Results & Discussion part, please see my specific comments. A detailed review of the entire manuscript can only

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be carried out after the manuscript is revised using appropriate statistical tests.

Specific comments

Page 1278, line 27: does the root size refer to diameter or length?

Page 1280, lines 14-22: i) data from different depths or horizons of the same profile are not independent, which is a prerequisite for an ANOVA analysis followed by testing the significance of differences, so the statistical evaluations are not valid from my point of view, the authors should repeat this analysis with appropriate tests as, for example, repeated measures ANOVA or mixed effects models, furthermore, usually the level of significance is 0.05 for such analyses, what is the reason to separate into levels of high and low significance? ii) please provide a reference for the chosen procedure to replace a missing data point, and you are dealing with pseudo field replicates, for true field replicates an analyse of three individual soil pits would have been necessary, which is not the case in the present study, please clarify this iii) where are the correlation coefficients coming from? what kind of model/method did you use to calculate this numbers and, most important, is your model/method appropriate for dependent data? Please explain in more detail and provide references, furthermore, there is no level of significance given for the correlation analyses

Interactive comment on SOIL Discuss., 2, 1273, 2015.

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