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Interactive comment on "Alteration of carbon, nitrogen, and phosphorus stoichiometry and their related enzymes as affected by increased soil coarseness" *by* Ruzhen Wang et al.

Anonymous Referee #5

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The authors reported on an experiment in which plots were partly excavated to different depth increments and the original soil was mixed with river sand to a range of proportions. The river sand can be seen as a different soil because it contains organic matter (C and N reported) and we may assume that the sand also contains microbial communities that reflect its history in an aqueous environment. It is not clear how the "theoretical dilution values" were calculated. Were the river soil properties taken into account? After mixing and refilling, which of course destroyed the original soil structure, a new type of vegetation was planted on the plots. Soil samples were taken after one year! This is very short. I expect that the new vegetation had almost no effect of the newly created soil. Instead, the data presented in this manuscript are the result of

1) the mixing of two soils, 2) the soil-plant relations of the original soil at the plots, and 3) the properties of the river sediment. So, this has basically been a mixing of legacy effects, i.e. mixing the relicts of pre-experimental plant traits – litter quality – decomposition/mineralisation processes – microbial community properties (including enzyme activities) processes of two soils. Depending of the rate of biogeochemical cycling it will take at least 3 – 5 years for the microbial communities in a soil to get adjusted to changes in litter quality (new vegetation). The experiment should have been done in a more 'controlled' way. For instance, by using pure (inert) quarts sand and by analysing the mixtures at the beginning of the experiment (new vegetation growth at time zero). Subsequently, the new vegetation should grow for at least a decade. Soil sampling at regular intervals (e.g. 3, 6 , 9, . . . years) would yield a time series data set (C, N, P, EEA, etc.) that would reflect the adjustment of biogeochemical cycling (microbial communities, and C, N, P stocks) to the new vegetation as a function of soil texture. Aside from that the manuscript would need major revision with respect to use of language and presentation, the presented data set is not suitable for publication.

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