

## ***Interactive comment on “Biochar carrying hydrocarbon decomposers promotes degradation during the early stage of bioremediation” by P. Galitskaya et al.***

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The paper submitted by Galitskaya et al. present a laboratory incubation done on an oil-polluted soil sampled in Russia. They applied different treatments aeration and moistening, amendment with biochar + aeration and moistening, amendment with biochar + aeration and moistening + *Pseudomonas* inoculation, amendment with biochar + aeration and moistening + *Actinobacter* inoculation. By comparison with a control they tested the effect of each treatments on hydrocarbon content, soil respiration, microbial community structure and phytotoxicity. They observed that all treatments affected the variable measured. In particular, when microorganisms are inoculated with biochar, the phytotoxicity is largely reduced.

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The paper is generally well written and the results are interesting but I have few concerns detailed below.

General comments: If I understood well all the DNA analysis were done using only on one replicate? Why the authors did not used all the replicates and used statistical tools to analyse the data?

Did you sterilize the biochar before amendment? Or, at least did you estimate the microbial biomass and the structure of the community on the biochar (without inoculation).

L 92-96: This paragraph is not very clear. Do you consider that 3 containers \*2 replicates = 5 replicates (like it is suggested on l136) or the variable containers is tested?

L103: Please better describe the germination index method. I am not familiar with this method and there is not enough details to fully understand the results presented in fig. 7

L163 and elsewhere: When you used the word “significantly” you should associate a p-value. By the way the results of the statistical analysis are not clearly presented it is not easy to see if a treatment is significantly different from another for a given variable measured.

L167: If this is true, you should not have hydrocarbons in your soils since your pollution event occurred one year ago

L 198-200: I don't fully agree with this sentence. First, because the microbial stress is not estimated here and secondly because there is no effect of microbial amendment observed. One explanation might indeed be that the microbes amended are stress despite the biochar.

L212: Please give the MB values of these two studies.

L 252-254: Since you can't track the C-CO2 coming from hydrocarbon you can't ex-

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clude that a part of the microbes amended died and other microbes decomposed this dead microbial biomass.

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