Thank you very much for your contribution to the paper. We are grateful for your input that allow us to get better results from our data.

This manuscript deals with the effects of a low intensity fire on a grassland soil for 9 months and falls within the scope of the SE journal. It is focused on the effects on colour, organic matter (OM) and water repellence (WR). The topic of the research is not novel, nor the methodology and conclusions obtained. In fact, there is not a thorough assessment of trying to explain WR dynamics, causes and factors controlling this property; the manuscript (MS) does not deepen in further analyses to provide new insights about these properties. It is a descriptive study about field effects of a fire during a short period of time.

The scientific methods are valid although some clarifications must be made, and some assumptions in the Discussion should be checked. One important issue is the MS title. It reads "Short-term spatio-temporal", but no result is shown dealing with spatial variations. Thus, title must be changed to only show temporal fire effects.

We changed the title to "Short-term changes in soil Munsell colour value, organic matter content and soil water repellency, after a spring grassland fire in Lithuania"

The language is not always clear, and sometimes is too basic, with weird structures. Thus, language must be revised by a Proficient in English.

A native speaker has helped us revise the English in this version of the manuscript.

Abstract P2121/L17. Are you so sure that leaching is the cause for WP reduction? I do not see it so clear, and with the design you have developed in this study is impossible to conclude this.

Thank you very much for your question, we rearranged the sentence. Several studies have pointed out that the post-fire leaching of hydrophobic substances by rainfall is one of the causes of SWR reduction. For example Hubbert et al. (2006)[1] or Vogelmann et al. (2012) (Referenced in the paper). The causes of SWR decrease can be also attributed to the different microbiological activity in the different soil size fractions, inducing different impacts on leachable hydrophobic compounds. In the new manuscript version we made a better discussion about this topic. We agree that we did not measure the leaching rate directly, but it is an explanation for the SWR reduction.

P2121/L18-19. Delete this sentence about spatial variability. You do not show any result about spatial Variability

We deleted

P2121/L23-24. You confirm here that repellent compounds were leached at different rates according to particle size. Firstly, I do not see clear evidence about leaching being the only factor involved in the decrease of WP, and secondly, you have not proved that leaching rate is different. You only know that WP disappears faster in coarse fractions. Thus, you must rewrite this sentence. Try to be more objective and focus on your findings.

We rearranged the sentence. We think also that it is important to provide some information why this may happen.

P2121/L24-25. You conclude that impacts of this fire are not a threat to this ecosystem, but you are so sure to conclude this only taking into account colour, OM and WP evolution? I do not think that with these three unique properties this assertion can be declared. Delete this sentence or rewrite it. In fact along the discussion you must give more arguments to justify this assertion, because I do not think you have enough information for that with your only data.

[1] Hubert et al. (2006) Prescribed burning effects on soil physical properties and soil water repellency in a steep chaparral watershed, southern California, USA. Geoderma, 284-298.

We deleted

Introduction/Objectives P2124/L26-27. Give an initial hypothesis to enforce the need for your study. Explain the results you expected to find when designing the study and justify the need for that.

We justified better the need for the study

"*Spring grassland fires are frequent in Lithuania. After the winter, farmers burn the dead grass in order to improve fields for spring and summer crops (Pereira et al., 2012a). Thus, it is important to know the effects of these fires on soil properties in order to understand the impacts of this practice and their persistence in time, especially in this environment where few studies have been carried out. This study contributes to a better understanding of fire effects and short-term changes in soil properties in boreal grasslands. At this time, the use of fire for landscape management is forbidden in Lithuania, but frequently farmers set fires and leave the area until the fires are extinguished, leading on many occasions to loss of infrastructure and impacts on natural resources(Mierauskas, 2012; Pereira et al., 2012a).*"

And we described better our hypothesis:

***"The aim of this work was to study the short-term temporal effects of a low severity spring grassland fire on some surface soil properties (0-5 cm) such as: soil colour value (assessed with the Munsell color chart), SOM content and SWR, in order to observe if this grassland fire induced relevant short term impacts on these soil properties*"**

Statistical Analysis -It is strange that despite the high variability of data, normality was achieved after some transformations. Please check it.

We rearranged the statistical analysis. In this new version of the manuscript we used non- parametric tests

I do not agree with the statistical analysis you have developed. I do not understand why you have considered that your samples are dependent to carry out a repeated measures ANOVA. In my opinion, samples are independent, since you are not sampling the same "individual". I do not think that the factor "time" should be included as within-subject factor since samples assessed at each different sampling are different, they are not the same. Thus, if normality is assured, you should carry out a two-way or one-way ANOVA for independent variables.

In this new version of the manuscript we used non-parametric tests for independent variables.

Material and Methods I suggest to avoid the reiterative use of “we...”. Try to be more impersonal
We changed this usage. Thank you very much.

Results -Along the entire MS you use the word “treatment”, and it is not clear what you mean with this word. I guess you mean burned/unburned soil. If so, explain in the Materials and Methods section that your treatment is a burned soil and an unburned soil, otherwise is difficult to understand.
We changed “treatment” for “plots”. The term is more correct

Along the entire MS you use the terms “control” and “unburned” interchangeable. Please, use always the same term to make it clear to reader.
Thank you very much. In the new paper version we use only the term “unburned“

Replace “period” by “sampling date” along the entire manuscript.
We changed

You have developed a two-way ANOVA showing the results for the interaction “treatment” X time. However, later no discussion is carried out in terms of this. Please, try to analize these interactions and extract some discussion or explanation, or delete the results for the two-way ANOVA since no useful information is provided in the way they are shown. I recommend you to interpret the results given by those interactions.
Thank you very much for your comment. However, in this new version of the manuscript we applied non-parametric tests, thus it was not possible to analyze the interaction between “plots“ x “time“.

Correlations. Make a partial correlation between SWR and soil colour with SOM as control variable, since maybe the correlation SWR with colour is indirectly affected by the correlation between SOM and colour. It could also be helpful for discussion.
Thank you very much for your suggestion. It was very helpful to understand the impact of SOM on soil value and SWR correlations

You speak about soil colour changes, but what you used to carry out the analyses is only the chroma. Revise.
We mean soil Munsell value

P2130/L1-13. Here you write that vegetation totally recovered in the burned area in two months. Please, provide a table with vegetation cover and plant species present in each soil sampling, since it is necessary so reader can understand results. Include the fact that vegetation cover was recovered after two months in the Materials and Methods section when explaining the sampling procedure.

Thank you very much for your comment. The vegetation cover recovery after the fire study was carried out in a plot located near the plot where we collected soils. The results were published in Pereira et al. 2013a. We did not analyze the plant species, just vegetation cover in the contiguous plot. Photos of the vegetation recuperation in the burned plot (from 4 to 60 days after the fire) were published in Pereira et al. 2012a. Both references are in this paper.

P2130/L12-13. You write here that the fire was not considered a threat to the ecosystem. You conclude this by the fact that the vegetation was rapidly recovered? Explain better and justify this assertion. I do not think you can conclude this only using the properties measured in this MS, as I exposed above.
We deleted this assumption

P2130/L22. You explain that OM decrease can be attributed to plant nutrient consumption and recovery. What do you mean with this sentence? For plants to consume nutrients, OM must be mineralized, so nutrients are released. So, decreases in OM with time can be due to fast mineralization owing to active microbial communities. Rewrite this sentence and explain better.
In the new version of the manuscript this part was rearranged

You only report leaching as a process responsible for WR decrease with time. However, could OM mineralization be responsible somehow for decreases in WR, in composite samples and also in the different fractions? Please discuss.
In the new version of the manuscript this part was rearranged

P2133/L3-15. You should have weighed the different size fractions to conclude that fire has or not modified the proportion of each size class. Since you do not show these data, I recommend you to delete this entire paragraph since it is too hypothetic and does not provide consistent information.
We deleted

P2133/L28 – P2134/L2. How nutrients leaching (such as N, P, K, Ca, etc) leads to decreases in WR? Please explain.
This part was deleted, and we have made a better discussion

Tables Tables 3 and 4. These two tables are complementary, so I suggest combining both tables in an only one. This will make data easier to understand. Use the format of Table 4, and include in each cell the mean (minimum-maximum). To show differences among fractions, you can use upper case for sampling date, lower case for fractions and a symbol like * to indicate differences between control and burned soil within each sampling date. Do no title the table as summary of ANOVA results since it is not. Title as, for example, Water drop penetration time (s) in terms of the different size fractions for control and burned soil in the different sampling dates.
We changed the table (now table 5). We add in parenthesis the standard deviation. In case of significant differences we differentiated it with different letters.

Figures -Revise the captions of all figures since it is not corrected written. I guess you mean "...in the burned and unburned plots in the ...". -Add standard deviation in all figures instead of 95% confidence interval. -When no differences are found among the levels of one factor, there is no need to include the same letter.
We revised and we changed 95% for ±Standard Deviation.

Minor comments

I do not correctly understand what you mean here. Boreal grasslands would decline by wildfires or because of human management that uses fire to turn forests into grasslands? Please explain
We deleted this sentence

This list is too long. Shorten it.
We shortened it

This sentence is unclear
We deleted it

What do you mean with "quality". Previously you wrote that fire affects SOM chemical composition, which is normally associated to SOM quality. Be more explicit with the concept you want transmit with "quality"
We deleted quality in order to not repeat the information

Vegetation species, microorganisms, fauna?
Thank for the correction. We mean vegetation species

I would say most rather than all, some SOM, very stable can remain
We changed it

Explain better. It is unclear what you mean with property loss
We substituted "*infrastructure and impacts on natural resources*" for "property"

What was the cause of the fire? Include it
We added the explanation

How sampling was developed? Did you follow the sample sampling grid with 5 m distance in all samplings? Please explain.
Yes. We explained this in detail in the text

Move to the previous section 2.1.
We moved

Give formula used for SOM estimation after soil combustion
We added the formula

How fractionation was carried out? dry/moist? mechanically/manually? time of shaking? Explain
The fractionation was carried out under dry conditions and manually. We add this information in the new version of the manuscript.

I only see differences immediately after fire. Check
In the new version of the manuscript this part was rearranged

According to Figure 2, these differences were observed in the unburned soil. Please check.
In the new version of the manuscript this part was rearranged

What about the factor "time"?
In the new version of the manuscript this part was rearranged. We have now been using non-parametric tests.

Replace by soil chroma, since it is the actual property you used for correlations
We analyzed soil Munsell value

This sentence does not provide any useful information dealing with the topic of your study. Delete it.
Deleted

Delete this paragraph. It is obvious that the higher the OM content the darker the soil is (lower chroma). No need for such a discussion.
We think that it is important to make a discussion of the results, because we mentioned it in the results section. It is true that this might be obvious, but it deserves some discussion.

Delete these sentences since in the next one you include a general sentence explaining this
We deleted

Revise these sentence. They are unclear. Rephrase.
We rearranged this section and explained it better

I still do not understand how you can conclude this with the data you provided. You must provide more reasons in the Discussion section to support this conclusion, or better delete it.
We deleted it

Revise and update. This soil type is not included in WRB 2006. It is an old classification.
We corrected.

Add descriptors after species name
We added