

## ***Interactive comment on “Polycyclic aromatic hydrocarbon in urban soils of the Eastern European megalopolis: distribution, source identification and cancer risk evaluation” by George Avtandilovich Shamilishvily et al.***

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All manuscript: This study investigates 15 PAHs in urban soils from different land uses. The authors show us new data, however, it seems like a report in current version. Authors need to improve their presentation and discuss further. For example, the mechanisms of PAHs accumulation in soils, different pattern of PAHs among different land uses and the source analysis, etc. Specific comments: 1. Line 91-94: It is not the aim of this study. It is what author did in this study. - Yes, it were objectives of our study, the aim wa to aimed to test the hypothesis on the PAH load differences between urban

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territories with different land use scenarios. 2. Don't only leave the figure caption in text.

3. Line147: Figure 2 is not necessary. - Deleted according to suggestions.

4. Why measured 15 PAHs not 16 PAHs?

- Due to technical reasons, we did not have soil reference materials containing acenaphthylene for QC.

5. Check figures.

- Checked all the figures, numeration was corrected as well as figure references in the text.

6. Line 237-246: Figure3 and Figure 4 are repeated. And this part should be moved to source analysis.

- Corrected according to suggestions.

7. Line266-275: Authors don't need to state the details of other studies in text due to they are showing in Table 4.

- Details were removed from the text according to suggetions.

8. Figure 5 and Table 5 are repeated. The resolution of figure 5 is not enough.

- Checked, resolution was improved.

9. Line 287-306:

Authors state the weakness of diagnostics ratios. So, did author have confidence of the conclusion deduced by this method? We are going to conduct PCA once we will get more data.

10. Line 310-321: Authors suggest no significant difference in total PAHs among different land uses, which is not consistent with many other studies. I can understand there

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is no difference in total PAHs. However, the authors should discuss more about the difference in PAH compositions or PAH patterns among different land uses.

- Actually, it is stated that there are no significant differences in total PAHs concentrations as well as in composition of PAH mixtures only between residential and industrial areas, since they are very loaded, in contrast to recreational area.

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