

Manuscript Reviewing Request

This bottom is my Official Review of the submission No. Egusphere-2024-2814

MS No.: egusphere-2024-2814

Title: Heterogeneous Phototransformation of Halogenated Polycyclic Aromatic Hydrocarbons: Influencing Factors, Mechanisms and Products

Authors: Yueyao Yang et al.

General Comments:

The paper presents the results of an investigation focused on particulate chlorinated and brominated PAHs affecting the atmosphere of Beijing, China RP, and on processes developing in the air, leading to their decomposition because of reaction with oxidants; the impact of meteo-climatic conditions is also elucidated, and the resulting effect on toxicity is evaluated. The investigation looks finely conceived and conducted, the database seems sufficient and suitable for applying the statistical approach adopted for assessing the role of forcing factors. The results seem of concern and suitable for reaching the research purposes. Thus, the subject enjoys enough concern to consider for publishing in EGU sphere.

The manuscript looks, in general, well written, and the results finely discussed. English language looks fluent, and just some points seem requiring to be improved, overall of editing nature. My general evaluation of the manuscript remains positive and an only minor revision seems necessary, according to remarks reported bottom. This further work of Authors would allow accepting the paper to publish in EGU sphere.

Particular remarks

Line 018: insert "that" after "found".

Line 019: insert "the contribution of" before "PM1".

Line 022: cut "transformation".

Line 026: change "XPAHs, with this process being" with "XPAHs; this process was".

Line 027: change "increased" with "high".

Line 029: change "We then" with "According to that, we".

Line 038: change "dechlorination" with "dehalogenation".

Line 040: insert "cumulatively," before "XPAHs".

Line 041: change "garnered" with "gained".

Line 052: insert "means of" before "detection".

Line 054: insert "i.e.," before "the environmental".

Line 058: change "atmospheric organic chemical species" with "organic substances affecting the atmosphere".

Line 061: change "study" with "studies".

Line 99-100: see comment at Line 201.

Line 130: change "was" with "were".

Line 181-182: change "652.7" with "653" and "167.6" with "167".

Line 201: Triph (i.e., triphenylene) was not listed among PAHs at lines 99-100. I suggest introducing it there.

Line 208: I suppose Br2Byr is BrPyr.

Line 208: change “presented” with “represented”.

Line 209: change “departure” with “difference” or “change”.

Line 225: change “subject” with “subjected”.

Line 256: change “transformated” with “transformed”.

Suggestions for the Editor:

In conclusion, in my opinion the paper needs a minor revision before accepting to publish in EGU sphere.

Best regards,