

R:

The revised section in the introduction (L42-52) now includes a comment on the results, which does not fit here. I suggest rewriting it as follows:

Consequently, air quality in this region has been steadily improving (Aas et al., 2024).

Nevertheless, Central Europe remains one of the regions with the highest concentrations and deposition rates of HMs in Europe (Travnikov et al., 2020). Therefore, this study examines levels and trends in HM concentrations in relation to immission limits in the Czech Republic over the period 2010–2021. The analysis covers multiple types of environments and focuses on the effects of current regulatory measures. Dispersion normalisation is applied here for the first time in the context of HM assessment to reduce the influence of meteorological variability on observed concentrations and trends at air quality monitoring stations. To better understand these developments, this study addresses three main objectives:

The sentence in L64 now needs revision: The study aims to identify potential methodological challenges and limitations associated with the selection and grouping of monitoring stations the assessment of emission-related trends.

Thank you for your suggestion. We have revised the introduction section as follows:

New text:

Consequently, air quality in this region has been steadily improving (Aas et al., 2024). Nevertheless, Central Europe remains one of the regions with the highest concentrations and deposition rates of HMs in Europe (Travnikov et al., 2020). Therefore, this study examines levels and trends in HM concentrations in relation to immission limits in the Czech Republic over the period 2010–2021. The analysis covers multiple types of environments and focuses on the effects of current regulatory measures. Dispersion normalisation is applied here for the first time in the context of HM assessment to reduce the influence of meteorological variability on observed concentrations and trends at air quality monitoring stations. To better understand these developments, this study addresses three main objectives.

The main objectives of the study are:

1. Evaluate long-term trends in HM concentration at different types of monitoring stations in the Czech Republic.

2. Investigate the suitability of selected monitoring stations and establish a representative station group. A critical research question is whether a single monitoring station can be representative of the entire network or whether multiple stations are necessary to ensure data reliability. The study aims to identify potential methodological challenges and limitations associated with the selection and grouping of monitoring stations in the assessment of emission-related trends.

R:

In L97, it is still not clear what CHMI reports and CIEP are. CHMI is only explained later in L140 while I cannot find explanation for CIEP (which also seems to be misspelled; from the response I learned CEIP – Centre on Emission Inventories and Projections, but this is not explained in the manuscript). Mind also, years in brackets still don't always align with the citation entry (e.g. Table 1 caption).

We apologise for this error: the typo in the abbreviation CEIP and the incorrect publication year in the references. We have corrected these mistakes in the manuscript.

New text:

More detailed information is accessible in the reports provided by the Czech Hydrometeorological Institute (CHMI) and the Centre on Emission Inventories and Projections (CEIP) (CHMI, 2026; CEIP, 2024).

R:

Although the authors introduced HMOR and HMDN, they often use OR and DN throughout the manuscript, which still lack explanation. I suggest original (OR) and dispersion normalised (DN) HM concentration datasets are defined in L71, which can then be use as subscript to HM, As, Ni... later.

In L278: The statistical significance results were the same for the grouped HMDN and HM datasets. -> HMDN and HMOR?

We thank the reviewer for pointing this out. We have made the necessary correction in the manuscript.

New text:

The statistical significance results were the same for the grouped HM_{OR} and HM_{DN} datasets. However, the percentage increase/decrease and confidence interval values were higher for HM_{DN} results (Table 3).

Furthermore, we have checked the text and added the subscripts OR and DN where relevant (e.g., in the Discussion and Conclusion sections).

New text:

Another such example is the increase in As_{OR} and Cd_{OR} concentrations at a traffic station during 2020 and 2021, which could be incorrectly attributed to the impact of coronavirus pandemic-related restrictions.

New text:

The correlation analyses showed the spatial connection between the stations, especially for Cd_{DN} and Pb_{DN}. Low correlations were found for Ni_{DN} across all stations ($R_s = 0.22-0.52$).