

Response to Editor’s comment on “Measurement Report: The effects of SECA regulations on the atmospheric SO₂ concentrations in the Baltic Sea, based on long-term observations at the Finnish Utö Island.” by Maragkidou et al., EGUSPHERE2024-1703.

For clarity, our response to the reviewer’s comment is in purple font.

Dear Authors,

many thanks for submitting your revised manuscript along with your responses to the queries from the reviewers. I am happy with the changes that have been made to the manuscript in the most part. However, I do not feel that the new sub-section 4.4 adds any real scientific value to the manuscript and I suggest removing or moving the text from this section earlier in the manuscript - it would fit before lines 144 - 157. I assume that when the reviewer 2 queried the uncertainties associated with the measurements, they wanted details on the calibration uncertainties in terms of x % at 1 or 2 sigma. I think these details on the measurement uncertainties should be added to the manuscript somewhere around lines 144 - 157.

A couple of minor corrections:

Line 154: define GPT

Line 193: Lee et al

Once these revisions have been made, I am happy to recommend publication in ACP.

Best wishes.

Reply: We would like to thank the editor for her comments and for recommending our manuscript for publication in ACP once her suggested revisions are made. We have added a new column to Table 1, titled “Uncertainty,” which includes the uncertainties of the instruments used or of equivalent models, based on their datasheets, manuals, or manufacturer-provided specifications available online. Regarding the suggestion to remove or move subsection 4.4 earlier in the manuscript, we decided to remove this text from the manuscript. Additionally, we have addressed the editor’s minor corrections by providing the definition of GPT (gas phase titration) in new line 156 and correcting the reference to Lee et al. 2011 in line 195.

List of all relevant changes made in the manuscript:

Changes	Date
Added a new column to Table 1, titled “Uncertainty,” which includes the uncertainties of the instruments used or of equivalent models, based on their datasheets, manuals, or manufacturer-provided specifications available online.	12 December 2024
Provided the definition of GPT (gas phase titration) in new line 156 (old line 154).	12 December 2024
Corrected the reference from Lee at al. (2011) in new line 195 (old line 193).	12 December 2024
Deleted subsection “4.4 Uncertainties” as suggested by the editor.	12 December 2024

Added two clarifications below Table 1 (new lines 143–144).	13 December 2024
Added one reference to the References section (new lines 593–595)	13 December 2024
Added a small sentence to the Acknowledgements section (new line 431)	13 December 2024
Removed extra space in new lines 27, 34 and 41	13 December 2024
Added a period between “2” and “5” in “PM25” in the first column of Table 1	13 December 2024
Replaced the hyphens (-) with en dashes (–) in new lines 400 and 419.	13 December 2024