

Boyer et al. The annual cycle and sources of relevant aerosol precursor vapors in the central Arctic.

Reviewer's comments

The article presents and analyzes the first time series of aerosol precursor vapors (sulfuric acid (SA), methanesulfonic acid (MSA), and iodic acid (IA)) that are relevant to the central Arctic during MOSAiC. The authors conducted the measurements with state-of-the-art instruments, and the results are crucial in assessing the impact of anthropogenic emissions in the Arctic. The article is well structured, and well written, and only requires minor corrections before acceptance.

Minor comments

- The article discusses the crucial findings related to the concentration of atmospheric gases in the Arctic. However, the information is not presented in a concise format such as a table, which would enable the reader to easily examine the data. It is recommended to include a table that displays the monthly and seasonal averages of the primary anthropogenic pollutants.
- The date in Figure 4 is confusing. It is recommended to improve the date and use a single format.
- Figure 1 presents the gas phase time series for SA, MSA, and IA during clean and polluted periods using a violin-type scheme. This type of schematic can be a bit confusing. It is recommended to present the information in another format, for example, box-and-whisker diagrams. Could you expand the description of these results? Perhaps showing a table with the main statistical results.
- Figure 2c shows several results that are difficult to interpret. Is it possible that you could improve or present these results in another format?
- The message describing Figure 2c mentions the dashed white line denoting the monthly median latitude of Polarstern during the campaign. However, in Figure 2c no dotted line is shown. The only one observed is a continuous white line.