



## Comment on acp-2021-258

Anonymous Referee #1

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Referee comment on "Mapping gaseous dimethylamine, trimethylamine, ammonia, and their particulate counterparts in marine atmospheres of China's marginal seas – Part 1: Differentiating marine emission from continental transport" by Dihui Chen et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-258-RC3>, 2021

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The data presented in this paper could add to our understanding of TMA and DMA in gas and in particulate phase, in China's marginal seas. This should be also reflected in the title since the word "amines" is misleading because it is discussed only two compounds. Furthermore, some technical details, especially in the analytical protocol, are not presented adequately.

Specific comments are below:

- The different sections have not the correct numbers e.g. the section "4. Conclusions" should be 5, while the sections "Introduction" and "Experimental" do not have numbers.
- In the Experimental section: I propose to split it into the sampling and analysis part.
- The introduction is focused on the biogenic sources of amines. What about anthropogenic emissions? Is there any information from the literature, especially for the area?
- Lines 114-118. More details regarding the analysis should be added here, such as the eluent, the type and time of elution, injection volume, the detection limit for anions.
- Line 123. What exactly the author means by the term contamination of  $K^+$ ? Is it related to the overlapping of the peaks? If yes, the term "interference" is more appropriate. I propose to present a chromatograph in the supplement material with and without  $K^+$  interference.
- Line 174. What are those values?
- Line 187. "Negatively correlated" please refer  $r^2$  and p.
- Line 221.  $SO_4^{2-}$  anions are non-sea salt? If not, it should be clarified for continental sources.
- Line 223. Na is sea salt Na? If not it should be for marine sources.

## Figures

-It would be nice to change the order of Figures 1 and 2, in order to help the reader to follow the discussion.

-Fig. 2 (b) where is wind speed? Please explain how the direction of arrows is connected with the wind direction.

-Fig.3. The legends are missing from the graph.

-Fig.3. "only some data were used in (e) and (f) to avoid clustering". Which was the criterion of "some data"?

-Fig.4. Remove the single bracket.