

We thank the reviewers for their helpful comments. We have modified the manuscript as suggested. Below shows our responses to all the comments. The reviewer's comments will be shown in blue while our responses are in black, and changes made to the paper are shown in black block quotes. Unless otherwise indicated, page and line numbers correspond to the original manuscript.

For reviewer 1:

The revised version has shown significant improvement, and all my concerns regarding the previous version have been appropriately and clearly addressed. Only a few minor comments to be considered. There's no need for a further round of review.

Firstly, it would be beneficial for the author to include a brief overview of the current state of ship emission control and its associated air quality impact for inland vessels. This inclusion will highlight the importance of this study beyond just ships operating within 12 or 200 Nm.

Thanks for the advice. We added some discussions about control policies in lines 70-71 :

“Wang et al. (2021) presented a detailed time line of the control policies, with the DECAs 1.0 policy starting in 2017 and DECAs 2.0 in 2019, while for river vessels the fuel sulfur content had to be gradually reduced to 10 ppm in the last half year of 2017. Wang et al. (2021) showed that the latest control policies have been effective in reducing ship emissions of SO₂ and PM, especially after 2018, when the DECAs 2.0 control policy became effective. The scenario study of the DECAs policies (Li et al., 2018) showed that several decades will be taken to reach a similar reduction for NO_x emissions compared to SO₂ and PM, and this requires significant technological changes for ships...”

Secondly, it is suggested to incorporate Section 4.1, "A comparison of the ship emission inventories," into Section 3. The comparison between JSEI and SEIM does not align with the theme of Section 4 and would be better suited within Section 3.

Thanks for the suggestion. The subject of section 4 is the contribution of inland ship emissions relative to emissions from other sources. Section 4.1 emphasizes the importance of inland ship emissions compared with sea-going ship emissions. Following this thought, the contribution of inland vessel emissions to total emissions is analyzed (section 4.2 & 4.3).

References

- Li, C., Borken-Kleefeld, J., Zheng, J., Yuan, Z., Ou, J., Li, Y., Wang, Y., and Xu, Y.: Decadal evolution of ship emissions in China from 2004 to 2013 by using an integrated AIS-based approach and projection to 2040, *Atmos. Chem. Phys.*, 18, 6075–6093, <https://doi.org/10.5194/acp-18-6075-2018>, 2018.
- Wang, X., Yi, W., Lv, Z., Deng, F., Zheng, S., Xu, H., Zhao, J., Liu, H., and He, K.: Ship emissions around China under gradually promoted control policies from 2016 to 2019, *Atmos. Chem. Phys.*, 21, 13835–13853, <https://doi.org/10.5194/acp-21-13835-2021>, 2021.