

Interactive comment on “Simulating the spread of disinfection by-products and anthropogenic bromoform emissions from ballast water discharge in Southeast Asia” by Josefine Maas et al.

Anonymous Referee #1

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This manuscript extends the studies of environmental impacts of shipping by reporting the consequences of ballast water management convention to bromoform emissions and their dispersion in seawater. The study concentrates on South East Asia, but the methodology applied could potentially be applied also in larger scale. In my opinion, the paper is well written, and methodology is described enough if someone wants to repeat the work. I am not an expert of water pollution, which limits my analysis somewhat.

1. Why did you base you ballast water estimates on cargo statistics instead of using e.g. AIS data in your analysis? This would have allowed for an independent assessment

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of BW discharge. This should be a fairly straightforward calculation if 1/3 of the cargo capacity is used to estimate the quantity of ballast water released.

2. Page 7, if BW is released during cargo operations, then assuming BW release 8-40 km off the coastline sounds a bit drastic. Liquid cargo operations may take place offshore, but I am not aware of container terminals this far out to the sea. If the motivation to put the emissions source out to the sea was “ensuring minimal influence of the coastal circulation on the simulation”, why would this be the reason? I would imagine that if the harbour contribution to local levels of bromoform are a concern, then the harbour area would be a prime target for these investigations.

3. Page 13, lines 390-391: This new source can locally double the climatological bromoform flux, calculated from Ziska et al. (2013).

Somehow, I feel that this sentence sounds like a half of the story. I fully believe that authors are correct with their statement, but this should be put to context. It is easy to find locations where shipping is responsible for a very large portion of air pollution, close to 100%, if one chooses a location where ships are practically the only emission source. Still, it tells very little about overall situation. What I would like to see, is a discussion where bromoform emissions are put to a global context. This would help to see how big a problem DBPs are when compared to other climate contributions from ships.

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