Ocean Science
Discussions

EGU
Open Access

Interactive comment on "Modeling of ships as a source of underwater noise" *by* Jukka-Pekka Jalkanen et al.

M. Gassmann (Referee)

mgassmann@ucsd.edu

Received and published: 5 June 2018

A map of the underwater noise energy emitted by AIS-tracked and identified ships in the Baltic Sea in the year of 2015 was obtained by using the Wittekind ship noise model for which the required parameters were either queried from technical databases or estimated.

This is an important step towards quantifying one of the dominant anthropogenic inputs of underwater noise into the marine environment of the Baltic Sea and a good attempt to deal with the unavailability of some of the ship parameters needed for the Wittekind model.

While the uncertainty of the derived underwater noise energy is qualitatively discussed,

the paper may benefit from a quantitative evaluation of the uncertainty via some type of error model that takes into account the various uncertainties that were qualitatively discussed in the manuscript. An illustration of the ship type distribution (e.g. manuscript only mentioned 3% were container ships) may add value to the paper as well.

Detailed Comments:

Page 2, line 4: omit 'the' before propeller cavitation

Page 3, line 13: 'The Wittekind noise source model. . ..' (add 'The')

Page 6 line 9: please mention chosen grid cell area A in method section.

Page 7 , line 8: consider adding the names of the ports and islands on the map in figure 3.

Page 7, line 10: Containerships by themselves represent about. . .

Page 7, 13/14: Please explain why ships transit in 2015 slower than normal

Figure 1: horizontal axis may be rescaled up to <450 tons for better visibility

Figure 2: horizontal axis may be rescaled up to <2500 tons for better visibility

Figure 3: cannot pick out any yellow or red colors. Rescaling of colorbar may bring out better the smaller-scale differences in shipping noise between shipping lanes, which are currently all green or light blue. Would also suggest to make the labels of the colorbar aligned horizontally or have a vertical colorbar for better presentation and ease of use.

Figure 4: consider integrating the 'Other' stack into the pie chart: slices shouldn't be too small as the 7% slices look big enough