

# ***Interactive comment on “Urban population exposure to NO<sub>x</sub> emissions from local shipping in three Baltic Sea harbour cities – a generic approach” by Martin Otto Paul Ramacher et al.***

## **Anonymous Referee #2**

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This study was an example investigating the urban population exposure to local shipping emissions. To raise a generic approach, the authors started from the very beginning including the built up pf emission inventory and spatial-temporal allocations for high resolution modeling. To obtain the health impacts, exposure responses were also studied. As shown in the title, NO<sub>x</sub> is the main target although other pollutants were also discussed. The study is comprehensive and flawless from the structure to presentation. Overall, this manuscript is well organized. This topic is relevant to the scope of ACP and also in time addressing the pollutant from local shipping emissions. Thus I recommend publication of this paper within ACP. As mentioned by the other reviewer, this manuscript is a little bit longer than the regular ones. Shall the authors consider to

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put some materials in the supplemental materials or refer to some other previous studies? For example, the built up of emission inventory or the spatial-temporal allocation? If possible, comparisons with similar EI studies would be very helpful. Uncertainties of the NMVOC and the impacts on NO<sub>x</sub> simulation should also be discussed. The uncertainties come from the different steps should be discussed too. For example, the EI, air quality model, exposure responses etc? Any seasonal or monthly differences for your results? Or during the shipping busy/non-busy periods, how about the sensitivity of the simulations? Minors: Page 1 Line 18, page 12 line 9: 100X100 functions should be used instead of letter x Page 18: NO<sub>2</sub> should use subscript.

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