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Atmospheric Measurement Techniques Discussions



# *Interactive comment on* "Emission-factor uncertainties in maritime transport in the Strait of Gibraltar, Spain" *by* J. Moreno-Gutiérrez et al.

**Anonymous Referee #3**

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The paper compares 2 calculation methods for ship emission inventory in the strait of Gibraltar. Reading the paper one finds out that both methods are based on the same ship activity data and same simplifications, differing somewhat in SFOC data and in the applied emission factors. Instead of discussing directly inconsistency of these 2 parameters, authors discus only differences in the final emission totals which does not really pinpoint the problem. Also the argument of comparison of 2 standard methods (EPA and ISO) does not hold as the authors modify the EF they use. The arguments in the paper are poorly structured, exchanging general uncertainties of ship emission inventories (no novelty in these arguments) with uncertainties of the particular methodology used in the paper. I do not recommend the paper for publication in AMT.

1. Does the paper address relevant scientific questions within the scope of AMT? AMT: 'Development, intercomparison and validation of measurement instruments and techniques of data processing and information retrieval for gases, aerosols, and clouds' Also aim of the special issue 'Measurements of ship emissions' is focused on measurement techniques applied in ship emission measurements.

This paper addresses calculation of emission inventories using different kinds of emission factors and is not addressing questions that are in scope of AMT or the AMT special issue.

2. Does the paper present novel concepts, ideas, tools, or data?

The activity data calculated for the strait of Gibraltar are new, the methodology is not. Consideration of cruise emissions only when majority of emissions is from ferries crossing the Gibraltar raises the question how significant is contribution from maneuvering.

3. Are substantial conclusions reached?

Not really

4. Are the scientific methods and assumptions valid and clearly outlined?

The methods are described, one after the other, however, the differences are not clearly highlighted. Looking on Fig. 1 and Figures 2&3 one can conclude that EF(kg/t-fuel) * BSCF = EF(g/kWh) * 10-3. Since the underlying activity data are the same, differences between the 2 methods are coming directly from the differences in EFs and the BSCF used for recalculation between the 2. Why don't discuss this at the first place? Further, on p. 5970 l. 25 the authors state that the EF:s in kg/t fuel they used were actually originally recalculated from g/kWh by Corbett at al. (2003). It is somewhat difficult to understand what is the whole discussion about in the paper. Basically yes, however the argumentation is not addressing the core of the problem.

5. Are the results sufficient to support the interpretations and conclusions?



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See 3 6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)?

Yes

7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution?

Yes

8. Does the title clearly reflect the contents of the paper?

Partly yes

9. Does the abstract provide a concise and complete summary?

Yes, remarking that it does not point on the core of the problem

10.Is the overall presentation well structured and clear?

No

11. Is the language fluent and precise?

No

12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?

Mostly

13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated?

See introduction to this review

14. Are the number and quality of references appropriate?

Yes



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15. Is the amount and quality of supplementary material appropriate?

Yes

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Interactive comment on Atmos. Meas. Tech. Discuss., 5, 5953, 2012.