

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

**J. Moreno-Gutiérrez et al.**

juan.moreno@uca.es

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We would like to thank you for your valuable comments that will contribute to improve the paper's structure before sending it to AMT. It is our intention to clarify it by providing answers to all the issues concerned and by adding them in the text before sending it to AMT

Comments to text The abbreviation NMVOC (page 4) is not defined. The following text has been inserted in the manuscript (line 13 pag. 5960) : Non-methane volatile organic compounds (NMVOC) and PM, for example Reefer ship – not freezer ship (page 6). It has been corrected (line 1, pag.5963) It would probably be safe to assume that general cargo ships use heavy fuel oil in the main engines (page 6).

C2490

It has been corrected (line 21, pag. 5962) as follows: The remaining ships( cargo ships included) that transit . . . . .

In the estimate of the installed AUX power one could also use the estimation procedure given in the guidelines for calculating the EEDI (IMO) (page 6).

It has been corrected. The following text has been inserted(line 25, pag 5963)

However, taking into account the resolution IMO MEPC.212(63) adopted on 2 march 2012,one could also use the estimation procedures given in the 2012 guidelines on the method of calculation of the attained energy efficiency design index (EEDI) for new ships. Two equations may be used, one for ships with a main engine power of 10,000 kW or above,and the other for ships with a main engine power below 10,000 kW(MEPC 63/23 Annex 8, page 7)

The fuel specific CO<sub>2</sub> emissions are not the same for residual oil and gas oil and the two fuel types should be distinguished when determining CO<sub>2</sub>. IMO has established the conversion factors 3.1144 kg/kg for heavy fuel oil and 3.206 for gas/diesel oil (page 7).

It has been corrected. The following text has been added(line 17 to 24, pag 5964) :

The fuel specific CO<sub>2</sub> emissions values are specified in Table 7 for residual oil and gas oil(3.130 kg/kg for Heavy fuel oil and 3.190 kg/kg for Marine Diesel Oil, IPPC 2006 database). However IMO has established the conversion factors 3.1144 kg/kg for heavy fuel oil and 3.206 for gas/diesel oil).

The uncertainty of the database of ship specific data used should also be considered as contributing to the total uncertainty.

The following paragraph has been inserted(line 5 to 8, pag.5969):

4.1.5.-The uncertainty of the database of ship specific data used should also be considered as contributing to the total uncertainty

C2491

General comments to paper Is the Lloyd's database referred to in the paper the same as the Lloyd's Register Fairplay (now HIS Fairplay) database? Please specify.

The following text has been added(LINE 3, PAG.5961) : For this analysis, SASEMAR information data for 2007 and Lloyd's Register Fairplay (now HIS Fairplay). . . . .

The structure of the paper could be made more concise. We will improve the paper's struc

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

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