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**Geoscientific
Model Development
Discussions**

Interactive comment on "Modeling and computation of effective emissions: a position paper" *by* R. Paoli et al.

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1) As suggested by one of the referees, paper best fits the idea of a review of existing methods rather than a position paper (the title has then been changed as: "Review of effective emission modeling and computation").

2) Yes, the peculiarities of maritime transport have been indicated in the revised version in the Introdcution and in the Conclusions.

3) The sketch in Fig. 7 has been clarified.

4) Common response to the three referees. We agree that validation is a critical task for atmospheric models. In addition to validation, verification is another important ingredient to assess the quality of physical models or computational methods as those

described here. We added a new section (Sec. 6 in the revised version of the paper) to discuss these problems.

Specific comments

1) We added a table in the conclusions summarizing the key features of each method and their differences.

2) We reduced the number of equations and add a comment in Sec. 1 (besides Conclusions) on the consistency of effective emissions for heterogeneous chemistry.

3) We corrected

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