

[Interactive  
Comment](#)

# ***Interactive comment on “A review of sea spray aerosol source functions using a large global set of sea salt aerosol concentration measurements” by H. Grythe et al.***

## **Anonymous Referee #2**

Received and published: 14 October 2013

**General comments** This paper provides a thorough and well-argued evaluation of existing sea spray aerosol source functions and a discussion on dependencies of wind speed and temperature. It does not evaluate sea state, surfactants or other parameters which can have an effect on the sea spray source, however the parameters are mentioned in the paper, and the author is aware that these parameters can also be important. Additionally the authors suggest a new sea spray source function taking temperature dependency into account. The scientific methods used for this analysis seems very sound and the conclusions are solid. The authors have made a comprehensive literature study and the references listed are adequate.

C7993

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)



Specific comments: Introduction: (p3, line 10) a reference on SSA residence time is needed. (P4, line 13) I suggest to use a reference more specific on ocean stress like “Garratt, 1977, Review of Drag Coefficients over Oceans and Continents, Mon. Wea. Rev., 105, 915–929.” 2.3 Ocean salinity: (p9, line 28 – p10. Line 3) It is not clear to me what you mean, but I guess that you basically mean that the oceans do not have a salinity dependence because the salinity always is  $> 18$  o/oo. Could that be rephrased? (P10, line 10-12) A reference about the relation between water depth and wave breaking is lacking. 3. Observations: (p11, line 8-10) either a reference is needed or an explanation of why  $\text{Na}^+$  is sufficient to quantify the sea salt mass. (p12, line 10) Even though an open-face filter is used, there is still a cut-off depending on the flow. This needs to be discussed. Do you have knowledge of cut-off ranges for the different TSM samples? 5.3. Global correlations: (p23, line 20-21) It is not clear to me if FLEXPART has been used to simulate the global sea spray source using all 21 source functions. ...Could you write clearer where FLEXPART has been used? It is clear that it was used to study footprint areas for the sensitivity of the sources. 5.4. Aerosol production biases and an estimate for the global SSA production (p24, line 3-4) You write: “This can be considered as our best estimate of the annual global SSA  $\text{PM}_{10}$  mass production” Why?

Technical corrections: Page 18, line 18. FLEXPART is spelled wrong.

---

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 20729, 2013.

[Full Screen / Esc](#)[Printer-friendly Version](#)[Interactive Discussion](#)[Discussion Paper](#)