

Dear Editor,

The last round of peer review presented critical evaluation of the eddy covariance method we used in deriving marine chemical fluxes. The reviewers criticism was based on the flux fundamentals and after carefully considering their arguments we came to the conclusion that our method, while having some merit in deriving turbulent transfer coefficient and corresponding fluxes, cannot be proven.

After having carefully considered all the material presented in the last version of the manuscript, it has become clear that the manuscript could not go forward in its previous form. However, the questionable material, i.e. marrying EC measurements with the gradient-flux-method and the derivation of the source function constituted only 30% of the paper's material. The remaining 70% of the paper dealt with the diverse array of chemistry gradients, consideration of sources and sinks, OM-chlorophyll relationships and the seasonal pattern of marine chemistry gradients. All comments related to the aforementioned material have already been dealt with.

We restructured the manuscript by removing all questionable material related to the eddy covariance method including fluxes calculated using EC data and flux vs wind speed parameterisations and rewrote the abstract. However, we added a small section on the flux estimate by the boundary layer box model which not only compared well with other existing parameterisations (Figure 5), but also with the now removed gradient-flux parameterisation giving some credit to the simplified box model. No further parameterisation was attempted given the uncertainty of the simplified method.

We believe that the manuscript can now be considered for publication in Atmospheric Chemistry and Physics in its current version.

Yours sincerely,
Darius Ceburnis