

Interactive comment on “Response of the Black Sea methane budget to massive short-term submarine inputs of methane” by O. Schmale et al.

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The specific comments below are followed by an overall recommendation.

Page 9121 lines 13-25. Box models of air sea exchange are trivial, outdated, naive and of course grossly inaccurate if they do not use real time data. This is the reason that the EU and other funding agencies have funded numerous expeditions of determining methane sea surface concentrations of the Black Sea and NOT only in 1991.

page 9122 lines 1-9. A constant k for equation 2 leaves a lot to be desired. Also a large number of other literature data about CH₄ water column concentrations exist (more recent than 1991).

page 9124. Generalities about the sea to air flux can not hide the fact that the authors

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did not use real, later date than 1991 CH₄, data to constrain their model. Nor in this case that they refer to their own sea surface CH₄ concentrations, used “real” data of CH₄ sea to air exchange fluxes.

page 9126. Model B1 is not different to already model of McGinnis 2006 and it does not produce any new results.

page 9127. Model B2 and the conclusions indicate that very small amounts of CH₄ will reach the surface of the Black Sea, even after a catastrophic mud volcano eruption or mud slide. These conclusions and results are not different to the "CRIMEA" European Union project, results.

Overall the manuscript is quick and easy, futile exercise that ignores state of the science results in the area of the Black Sea, presenting nothing new or worth noting, to the scientific community, especially since the same authors with similar models have already proven that we know little about the real oxidation kinetics of CH₄ in the Black Sea and that little or no CH₄ reaches the atmosphere even after MV or MS events.

The recommendation of the present referee is not to publish as is.

Interactive comment on Biogeosciences Discuss., 7, 9117, 2010.

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