

## ***Interactive comment on “Seasonal and interannual study of volatile reduced sulfur compounds (VRSC) in coastal environment: the Bay of Quiberon (Brittany, France)” by A. Cozic-Houly et al.***

**A. Cozic-Houly et al.**

amandine.cozichouly@univ-brest.fr

Received and published: 16 December 2009

\* Presently, no article studied these five sulfur compounds together. Bucciarelli et al. (2007) studied exclusively DMSP which is the main precursor of these 5 VRSC, Stefels et al. (2007) and Sunda et al. (2007) focused on the DMS and its implications for ecosystem modeling and climate. Blezinger et al. (2000) studied the enzymatic consumption of COS by marine algae. Therefore, this manuscript is interesting to increase the understanding of sulfur cycle and the relationships between 5 volatile sulfur compounds and phytoplankton in a costal marine environment. \* We feel that the study of

C3575

five volatile reduced sulfur compounds (VRSC) distribution in a costal marine environment and their seasonal and interannual variations, offers a great interest to chemists and oceanographers to provide a new knowledge on the role of phytoplankton and sediments on the sulfur cycle in coastal marine environment. The presentation of this manuscript is similar with all the manuscript published in Biogeosciences. The amount of results is important but it is necessary to support the discussion developed. A second reading by the different authors was done and several corrections were provided to improve the manuscript. Moreover, a scientist those English is the mother tongue corrected the whole manuscript.

\* Some parts of the manuscript were simplified to increase the understanding. \* Title : The term “study” was changed by “variability” in the title. \* Abstract: The term “abundance” was modified and “density” was used in all the text long. The term “COS” was used in all the manuscript long. \* Introduction: The objectives of the study were more developed in the last paragraph of the introduction. The role of the DMSP-lyase was added. The reference missed was added in the list under “Radford-Knoery and Cutter, 1994”. \* 2.1. Section: The current speed is mentioned line 9. It was noted in knot in the manuscript’s version submitted and now, it is in km h<sup>-1</sup>. \* 2.2. Section: The title was changed in “Phytoplankton density and abiotic parameters”. The method used for the phytoplankton counting is the Utermöhl method. \* 2.3. Section: The word “inexpensive” was removed. \* 3.1. Section: The term “Hydrography” was changed. \* 3.2. Section: “Diatomae” was modified by “Bacillariophyceae” in all the text and “families” was modified by “groups”. \* 3.3. Section: VSRC was replaced by VRSC \* 3.5. Section: The Bay of Quiberon is considered like an oligotrophic bay by Soletchnik et al., 2007. \* Reference Section: The three typing errors observed in reference section were corrected. \* Figure 2 : it was simplified to have best clarity like the figures 3 and 4. Now, they are enough clearly to develop results and support the discussion. \* Figure 3 : it was corrected and simplified. The “Bacillariophyceae” monthly variations are available in the Figure 3A. \* Figure 4 : Like it is explained in the 2.1. section “Sampling was conducted over a 24-month period (n=11) and only one time for the winter months

C3576

because of adverse weather conditions". Therefore, no sampling was lead during the winter 2006 (i.e., subperiod D). To more facilitate the discussion, the term "subperiod" was removed in all the manuscript. With the others authors, we considered that this presentation of results was the best to have a general idea of the VRSC variability through the seasons and years.

References cited: Blezinger S, Wilhelm C, Kesselmeier J (2000) Enzymatic consumption of carbonyl sulfide (COS) by marine algae. *Biogeochem.* 48: 185-197  
Bucciarelli E, Sunda WD, Belviso S, Sarthou G (2007) Effect on the diel cycle on production of dimethylsulfoniopropionate in batch cultures of *Emiliana huxleyi*. *Aquat. Microb. Ecol.* 48: 73-81  
Stefels J, Steinke M, Turner S, Malin G, Belviso S (2007) Environmental constraints on the production and removal of the climatically active gas dimethylsulphide (DMS) and implications for ecosystem modeling. *Biogeochem.* 83: 245-275  
Sunda WG, Hardison R, Kiene RP, Bucciarelli E, Harada H (2007) The effect of nitrogen limitation on cellular DMSP and DMS release in marine phytoplankton: climate feedback implications. *Aquat. Sci.* 69: 341-351

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/6/C3575/2009/bgd-6-C3575-2009-supplement.pdf>

---

Interactive comment on *Biogeosciences Discuss.*, 6, 10057, 2009.