

Interactive comment on “Environmental control on the variability of DMS and DMSP in the Mauritanian upwelling region” by C. Zindler et al.

Anonymous Referee #2

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This paper describes a descriptive study of DMS, DMSP, nutrients and phytoplankton pigments in the Mauritanian upwelling in the eastern Atlantic. The authors found that DMS concentrations were elevated in waters with depleted nitrogen levels. The manuscript contains some interesting data from a highly productive ecosystem. Some attention to the following comments will improve the paper.

1. The same DMS and DMSP data are presented in both Figure 5 and figure 6. That is not acceptable. 2. 8594-L15. Have the authors tested whether storing water samples at 4 oC affected the DMSP/DMS pools? This would be a significant thermal shock for organisms used to 17- 22 oC. I have found that chilling samples can cause major release of DMS and dissolved DMSP in some plankton communities. 3. 8594-L17. Please give the volume of water that was syringe filtered? 4. 8595-L1-2. The procedure

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described, of analyzing “alkalinized unfiltered seawater” would not yield DMSPp. It would yield total DMSP+DMS. This would then require subtraction of independently-determined [DMS] and [DMSPd]. 5. 8597-L19. I don’t understand why the freshly upwelled water is “only 20 deg C”, which is higher than the “aged” water which has been at the surface and is 19 deg C. Should not the upwelled water be colder than water that has been at the surface for some time? In this same line, it is confusing when they say that the upwelling “was most advanced”. To me, advanced upwelling implies that the water has been at the surface for a while. Yet I don’t think that is what they mean. I think they mean that the contribution of upwelled water was most significant close to the coast at 18 N (as indicated by the cooler 18 deg temperature). Please clarify. 6. 8598-L24. Is it a general consensus that the reason cyanobacteria dominate oligotrophic regions is that they can use organic nitrogen compounds? 7. 8599-L23. Give DMS concentration range 8. L28. Give DMSPp concentration range. 9. L29. The final sentence of this section “However, the hidden bias...” is confusing and really doesn’t really add anything. I recommend deleting it. 10. 8603-L10-14. It seems a rather strong conclusion considering the data 11. As set in the discussion paper, several of the figures are too small to be seen in a meaningful way. When looking at a printed version, the details in Figure 3 are very hard to see. Figure 5 and 6 are nearly impossible to see and various plots within each panel just look like a jumble of points. Even when looking at the pdf and blowing it up, it is hard to see Figure 5 & 6.

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