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Comment

Interactive comment on “An improved method for the determination of dissolved nitric oxide (NO) in seawater samples” by H. E. Lutterbeck and H. W. Bange

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Referee 2#: The manuscript submitted by Lutterbeck and Bange to Ocean Science Discussions presents an improved and easy to handle chemiluminescence-based method for the analysis of dissolved nitric oxide in seawater. Moreover this manuscript also addresses the topics of nitric oxide in seawater which is of high interest in the fields of chemical oceanography and biogeochemistry since there are various potential microbial nitric oxide production and consumption pathways in the oceans. The manuscript submitted by Lutterbeck and Bange is very well written and evaluates in depth all factors that might influence the quality of the measurements. This manuscript opens new

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perspectives and might contribute to a better understanding of nitrogen cycling in the oceans. Therefore I recommend this manuscript for publication after minor revisions (see below): Authors: We thank referee #2 for the useful comments and the effort to help improving our paper.

Referee 2#: - P960 L25: L. 25: NO is not reduced to N₂, but forms nitrous oxide which is reduced to N₂. Authors: You are right, we added N₂O as an intermediate.

Referee 2#: - P968: The author should also discuss the possibility of interferences by organic compounds. For example S- and N-nitroso containing compounds are known to produce nitric oxide by photolysis. Authors: We added a section where we discuss the possible influence by organic compounds.

Referee 2#: - P968-L12-13: Please provide references and add your “preliminary” tests in the manuscript or if possible in supporting information. Moreover the authors should explain more in detail how poisoned plankton might release nitric oxide. Authors: We added the results from our lab tests and some references which show that NO concentrations can be increased by dying cells. We think these references provide enough information about the possible release mechanisms and a more detailed description of the underlying biology is not needed in this method paper.

Referee 2#: - Table 2: Could you please explain why the standard deviation of the aqueous NO standard solution is more than two times higher than the reference gas? Authors: We added the discussion about this to the section evaluating the standard measurements.

Referee 2#: - Figure 2: Please provide the concentration of H₂S measured in these six seawater samples. Authors: We added the values.

Referee 2#: - Figure 3: Please explain in the caption what is the difference between graphs A, B and C. Authors: Done.

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