

## ***Interactive comment on “Determination of dissolved nitric oxide in coastal waters of the Yellow Sea off Qingdao” by Chun-Ying Liu et al.***

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Table 2- What are the errors (standard deviations) on these measurements? Were they replicates, triplicates? The very large change in recovery at 400 ml/min compared to other flow rates does not make a lot of sense even with their explanation, and without an idea of the variability at each flow rate it is not possible to determine if the selected optimum is really the best for precision. Why include 200 mL/min if no measurements? Why not run at 350 and 450 mL per minute (or even 410 and 390) to see how sensitive the extraction is to flow rate- that will tell the user just how good their flow control must be to get good results. Perhaps it is possible to obtain even better results with fine tuning? At the very least the recommendation should be that anyone attempting to set this method up on their own will have to run this sort of experiment to determine the optimum flow rates.

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The error of these measurements was in the range of 8-25%. They were triplicates. Now the scheme looks a bit rough. We will increase the measurements of the purge flow rates between 350 and 450 mL per minute, especially around 400 mL/min. It is possible to obtain even better results with fine tuning.

Figure 4- This raises more questions than it answers. First, you have a lot of data at unrealistically high nitrite concentrations, why no data at 0.5 or 1 micromole concentrations? Second, the fact that the blank is so high (100 nanomolar if I am reading this correctly) means that the level of contamination is orders of magnitude greater than the signals you report, and the variation in these measurements over both nitrite concentration and time swamps any natural signal. Basically the graph is not going to prove anything except that the nitrite you are using has a huge NO blank associated with it. And if the graph shows anything the UV effect is significant over 1 hour! If you are to prove a lack of a nitrite effect, you need to run samples with some nitrite in it at natural levels (say 0.1 to 1 micromolar) and use nitrite with no appreciable blank, either by purging the solution or using a different nitrite source. I will say that nitrite cannot be causing significant problems with natural samples, or else the signals you see would be dominated by nitrite levels. But this graph doesn't show that.

The fluorescence intensity could not be detected with low concentrations of  $\text{NO}_2^-$  (0.5-1 mol/L) after UV-B radiation. The high concentrations of  $\text{NO}_2^-$  (50-200 mol/L) were design to demonstrate the effect caused by the photolysis of  $\text{NO}_2^-$  on this detection method. Results showed that no obvious effect of high concentrations of  $\text{NO}_2^-$  on NO detection, thus low concentrations of  $\text{NO}_2^-$  also has any significant effect. Figure 4 presents the variations of NO concentrations in seawater added with different concentrations of nitrite in the dark or under UV-B radiation. The blank had no signal when measured with the fluorescence spectrophotometer after UV-B radiation or in the dark. That is, the NO concentrations were zero. Yes, nitrite did not cause significant problems with natural samples during the measurement process.

In terms of the Environmental data, it is unclear if the manuscript has been modified to

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reflect the Author's clarifications. They need to be in the discussion.

We have carefully considered the reviewers' comments and suggestions and modified the discussion of Environmental [NO] data. We are very grateful to the reviewers for all the constructive comments and helpful suggestions to improve this manuscript.

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