

CC1: ['Comment on egosphere-2024-625'](#), Meilian Chen, [reply](#)

This manuscript presented ocean liming effects on DOC and optical properties of DOM. The lab controlled experiments are limited to two sets of samples from the Mediterranean Sea and the Baltic Sea following 1 day of sample liming. The treatments included adjustment of pH to 9 and 10. The topic is interesting since it's a potential solution for ocean acidification. The authors have seen changes o bulk DOC and also optical properties after liming. However, the experiment design excluded the interplay of other factors, such as sunlight, microbes, salinity, longer time. Those could be future studies.

We thank Dr. Meilian Chen for her appreciation of our work. We totally agree that this is only a first step in the study of the impact of ocean liming and that future studies are needed. However, we believe that this first evidence is important and may stimulate the discussion in the scientific community highlighting the need for additional studies.

Specific comments:

Table 1. The salinity of the Baltic Sea was only 6 and the  $a_{254}$  was as high as  $25 \text{ m}^{-1}$ . It's more representative of an estuarine sample.

We agree with this comment, but these are the typical characteristics of the Baltic Sea. It was one of our goals to have very different environments in order to highlight the strong dependance of ocean liming effects on different waters (regions). Our results point out the need of broadening the study areas for future experiments to have a more global evaluation on the possible effects.

Lines # 104. The pH of the treated samples were brought to 7.5. Could this interfere with the liming treatment of DOM?

This is a very good point; pH affects spectroscopic analyses, so in order to have comparable data we needed to bring the pH to 7.5.

Lines #123 How about absorption coefficient at 280 nm or 320 nm?

We did not report all the absorption coefficients because they had the same trend and we wanted to keep the results as clear as possible without an overloading of data that do not add information. However, a table with all the data, including  $a_{280}$  and  $a_{320}$  can be added in the supplementary material of the revised paper.

Lines #126 Slope Ratio of S275-295 to S350-400 would be a better proxy of molecular weight.

We thank for this comment, the Sr can be included in the table that can be added in the supplementary material of the revised paper. We preferred to focus on S<sub>275-295</sub>, since in the Med Sea absorption is very low at wavelengths higher than 350 and this could affect the Sr.