

Title: Source of short-lived bromocarbons in the Iberian upwelling system

Recommendation: Major revision

This paper is a valuable study and data set of bromocarbons upwelling region. These data are important for the development of the knowledge about the source and emission of bromocarbons. However the manuscript has some weaknesses, which should be addressed before publication.

Major points:

- The sampling points influenced by river waters should be separated from other seawater sampling points. Separate the sampling points influenced by river waters using salinity, and then discuss the rest of sampling points as upwelling area and open ocean area. (For example, for Figures 7 and 8 and Tables 1 and 2)

Abstract

- p8664 L11. "indicating an external source". I did not find the apparent evidence for external source in this paper. One of the possible reasons for the disagreement between bromocarbon and Chl a. could be the specificity of halocarbon production by micro organisms. The environmental factors also effect to halocarbon production by phytoplankton. Please delete the words "indicating an external source...." .
- p8664 L16. Reconsider significant figure of "185.1".

Methods

- p8666 L5. The letter of vessel name was not indicated correctly.
- p8666 L12. Insert a space in "nutrientconcentration".
- p8666 L20. Insert a space in "upwellingof".
- p8668. There is no mention about the limit of detection of bromocarbons. Please state the LOD for the measurement of bromocarbons.
- p8670 L25. Please reconsider significant figure of "185.1".

Results

- p8672 L19 Please check figure number. "Fig. 4a?" or "Fig.5a".
- p8672 Please add the vertical profiles at Station 1.
- p8673 L9. Insert "Fig. 5e, f" after "photosynthetic oxygen production".
- p8673 L15. Insert "Fig. 5h" after "integrated in the upper layers".

#### Discussion

- p8676 L11. "indicates a strong non-phytoplanktonic source...". Species composition and environmental factor affect bromocarbons production by phytoplankton assemblage, as described above (section 4.1). Please mention these points and re-discuss the source of bromocarbons.
- p8677 L14. "masked by strong non-phytoplanktonic or external sources". Species composition and environmental factor affect bromocarbons production by phytoplankton assemblage, as described above (section 4.1). Please mention these points and re-discuss the source of bromocarbons.
- p8677 L20. Is there power plant near the sampling area? Please described whether power plant is possible source or not.
- p8678 L4. Insert "Fig.4" after "31 August".

#### Tables

- Table 1. Reconsider significant figures.
- Table 1. Show the detection limits of target compounds. Replace 0.00 with "< detection limit".

#### Figures

- The size of font in the figure are too small. Please use larger font for the axis labels. (Fig.3, Fig. 4, Fig.5, Fig.6, Fig.7, Fig.8)
- Fig. 1. Please indicate the rivers Minho and Douro.
- Fig. 3. Please add the distributions of SST, salinity and chlorophyll a. Please plot CTD stations using larger dot.
- Fig. 6 caption. Please describe pigment name completely in this caption or in the manuscript.
- Fig. 7 and Fig. 8. These figure are somewhat confusion. Please change the figure type and indicate error bar as below.

