PHYTOPLANKTON SIZE CLASSES IN PORTUGUESE COASTAL WATERS

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INTRODUCTION

The phytoplankton comprises different shapes and sizes, having different impacts on the biogeochemical cycles. The development of models for Phytoplankton Size Classes (PSC) is based mainly on the empirical relationship between marker pigments and chlorophyll-a. The present study sought to investigate the PSC's spatial variability along the Portuguese coast and understand its



RESULTS

- ✓ **DIN** and **P** average concentrations are higher in area A.
- ✓ The lowest average values of **SST** and higher **DO** and **Tchla** concentration was registered in areas A and B.
- ✓ A similar distribution was observed between the **micro** and **Tchla**, with high average values in the coastal areas.
- ✓ The **micro** fraction showed a higher average fraction (%) in areas A, C and D.
- ✓ The lowest average values of **S** were registered in areas B and E, where the **pico** fraction (%) was dominant, especially in the most offshore stations.

The **pico** fraction was positively correlated with the **pH**, **CD** and **SST**.



- \checkmark Intensification of the upwelling event in area A (21/10) and, to a lesser extent, due to the weakening of that event, in area B (25/10).
- \checkmark Areas C, D and E: **SST** variations associated with specific situations e.g. river plumes and recirculation.

CONCLUSIONS

- In the variations in the hydrography and nutrient inputs were intrinsically linked to changes in the PSC. This is also supported by the positive relationship found between the micro sized phytoplankton, nutrients and TChla.
- Y The high values of TChla and micro proportion show a higher production in the northern region, especially in the coastal zone.
- Y The nano fraction had a nonspecific distribution and with higher contributions in transition zones, while pico fraction dominated in offshore waters.
- Y The results obtained corroborate with previous findings described by Brito et al. (2012), Sá (2013) and Uitz et al. (2006), which claim that the groups with larger cells have been associated with eutrophic and coastal environments, while small phytoplankton prevails in oligotrophic areas generally more distant from the coast.

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