

# Three-dimensional Modelling of Phytoplankton and Zooplankton Seasonal Distribution in the Iberian Upwelling System



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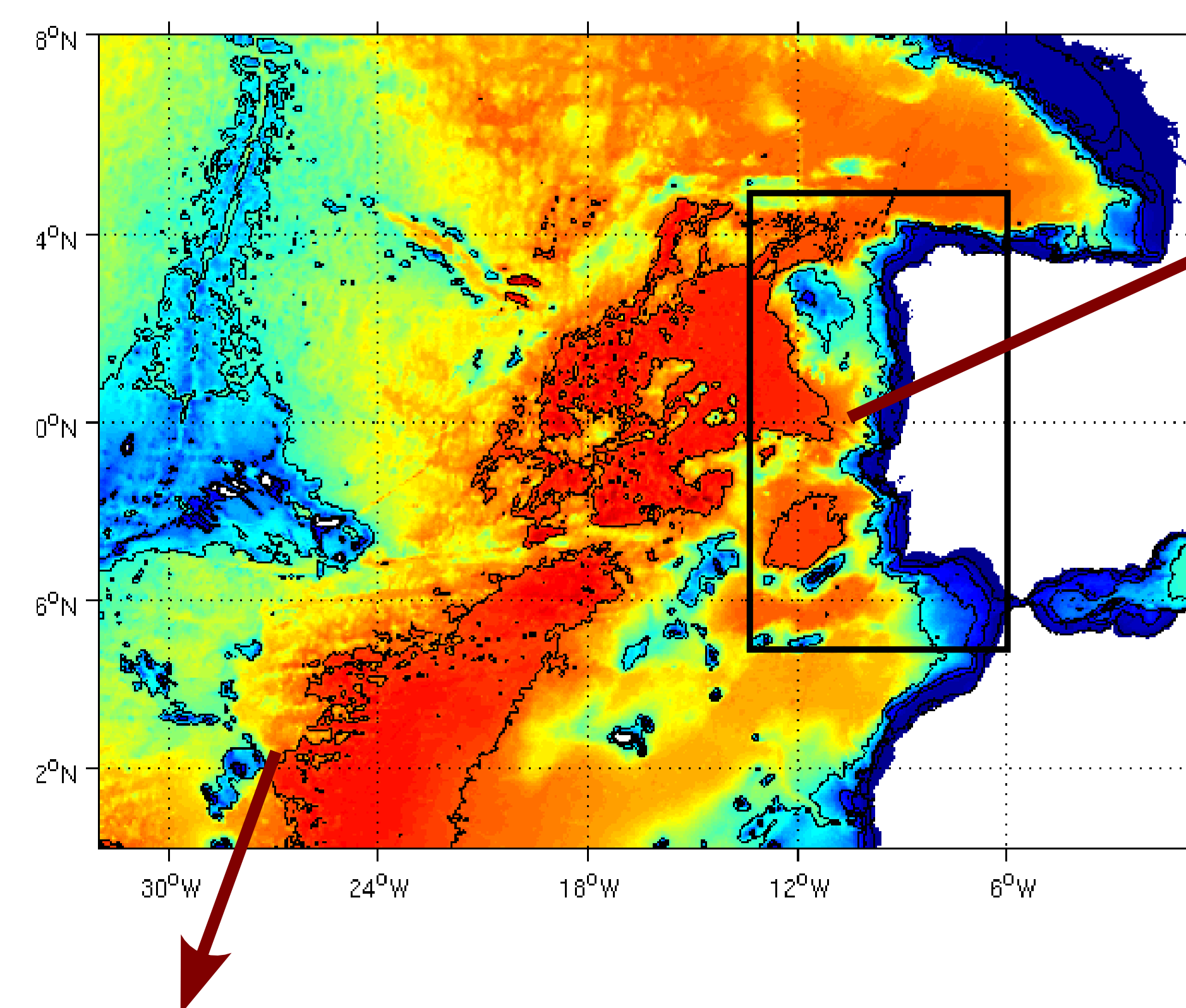
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## 1. Objective

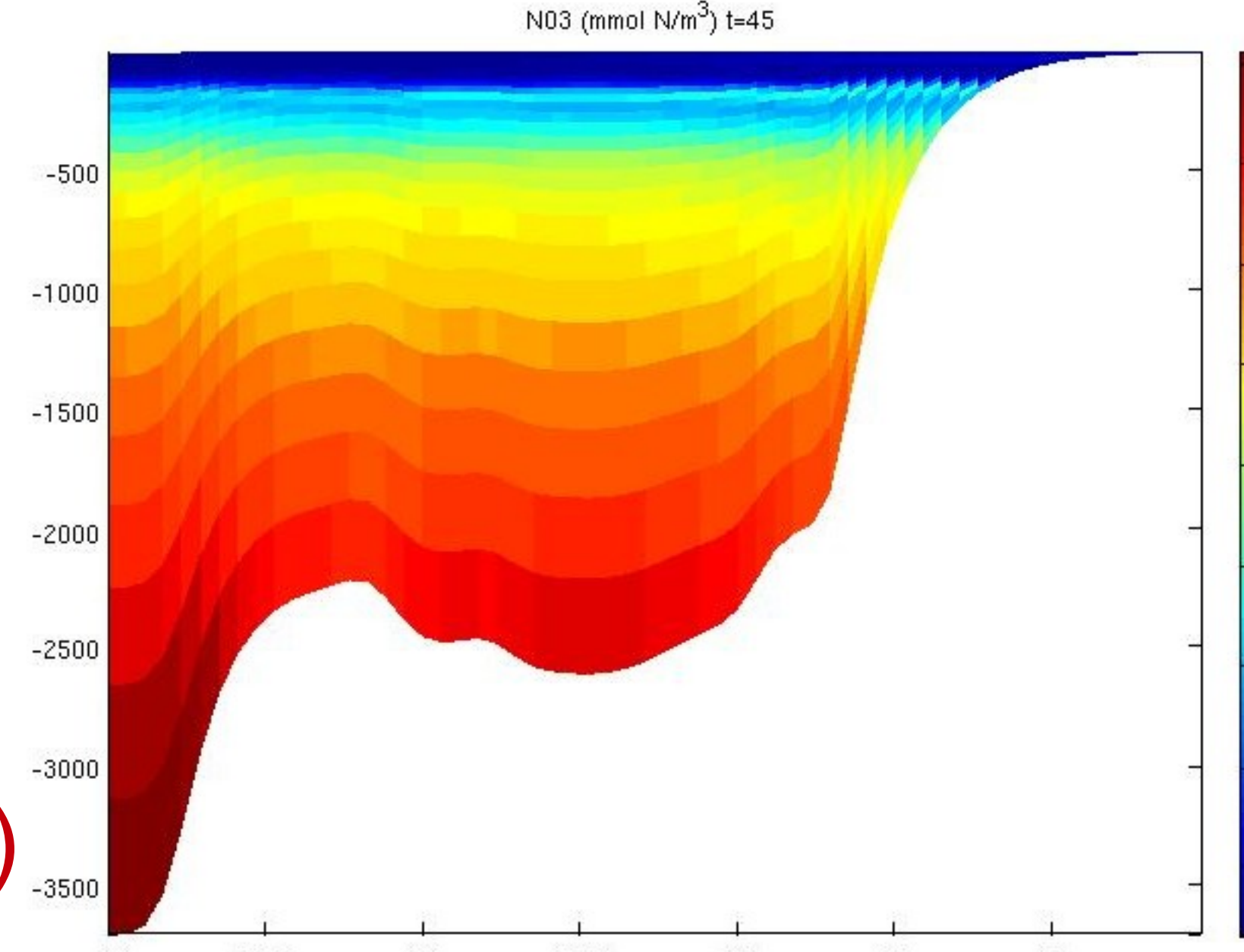
Implement a **biogeochemical module** (NPZD) in the oceanic and **coastal upwelling** region of **Western Iberia** to reproduce temporal and spacial variability of phytoplankton and zooplankton abundance.

## 2. Model setup

- **3D ROMS** model (agrif)



- Domain 1300 km x 600 km
- **3 km** resolution
- 60 vertical (sigma) levels



- **PHYS.** Boundary conditions (10 km)
- Initial conditions: 6<sup>th</sup> year run
- Climatological (COADS) forcing



- **BIO** Initial and boundary conditions

Climatology (WOA/SeaWiFS)

3 climatological rivers

(Minho, Douro and Tagus)

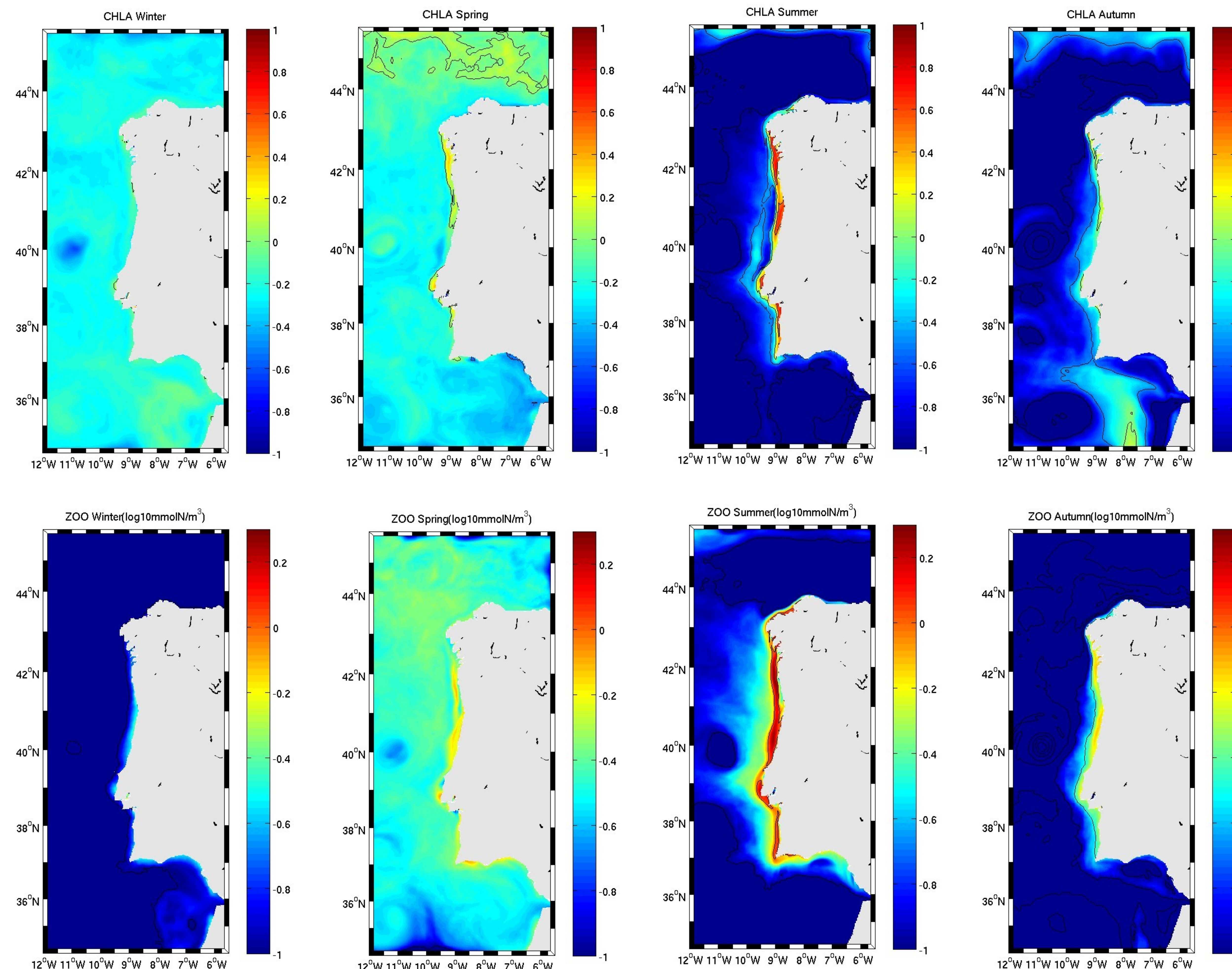
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## 3. Results

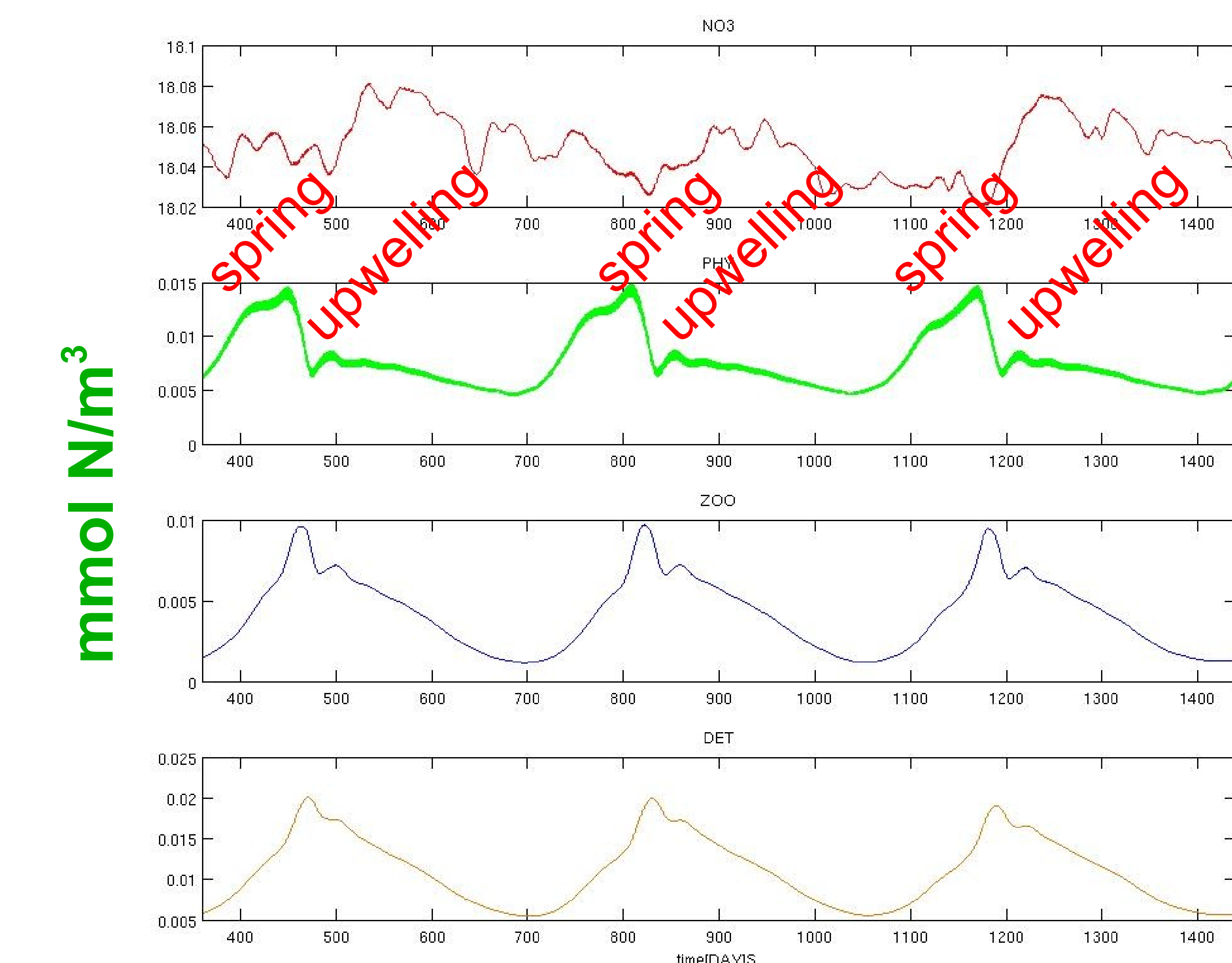
### SEASONAL MEAN 3 YEARS (LOG10)

CHLOROPHYLL-A  
(log10 mg/m<sup>3</sup>)

ZOOPLANKTON  
(log10 mmol N/m<sup>3</sup>)



### SEASONAL EVOLUTION



NO3

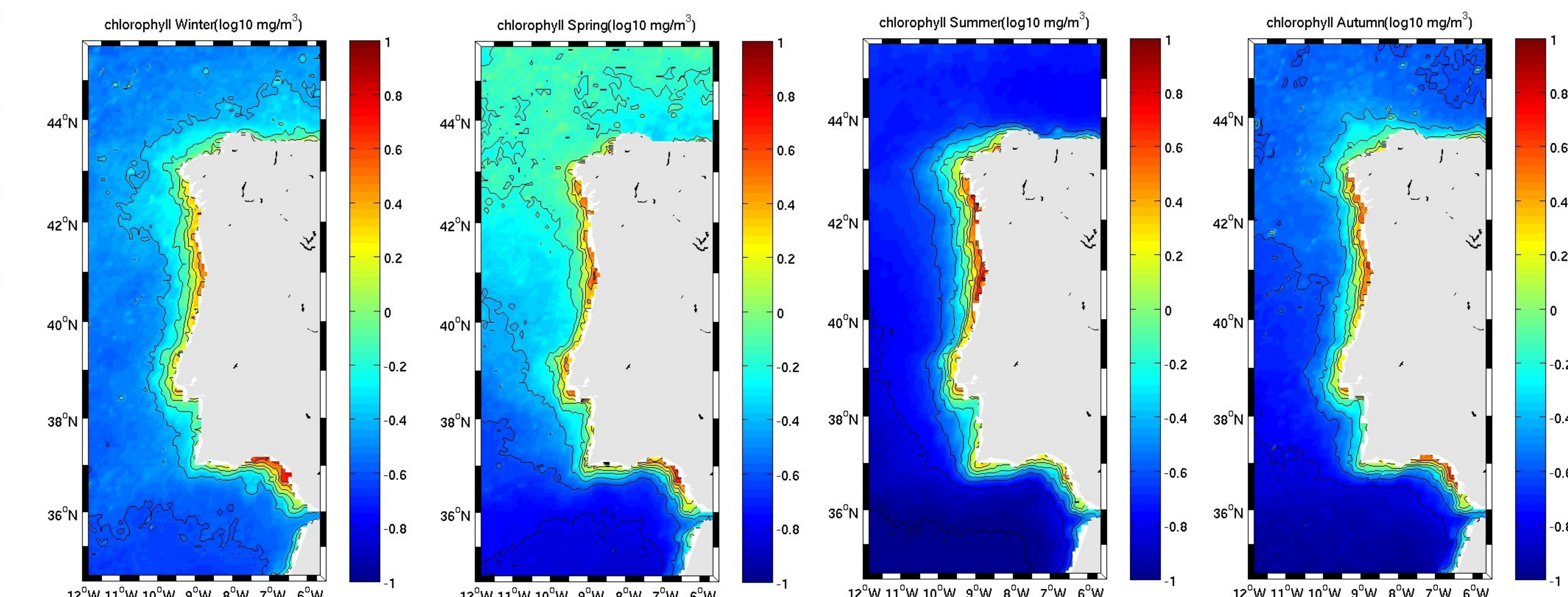
PHYTO

ZOO

DETRITUS



### CHL-A CLIMATOLOGY - SeaWiFS



- The seasonal trend was reproduced.
- Quantitative comparissons need to be improved