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## Influence of the hydrodynamics in spatio-temporal variability of chlorophyll a in a small-scale and microtidal bay: Fangar Bay case (Ebro Delta)

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Estuaries and coastal bays are areas of large spatial-temporal variability in physical and biological variables due to environmental factors such as local wind, light availability, freshwater inputs or tides. The physical characteristics of an estuary affect its hydrodynamics. These in turn modify the behaviour of biological variables such as the concentration of chlorophyll a (Chl a). In a small-scale, micro tidal bay such as the Fangar Bay (Ebro Delta), hydrodynamics is influenced above all by local winds, as well as by fresh water contributions. The results of two field campaigns and Sentinel-2 images show how the concentration of Chl a is affected by strong wind episodes typical of this area (NW-E winds). With these episodes of strong wind (> 10 m-s-1) mixing occurs in the water column causing an increase in the concentration of Chl a. On the other hand, with sea breezes (< 6 m-s-1) the water column is stratified causing a decrease in the Chl a concentration. However, the spatial-temporal variability of Chl a in small-scale estuaries and coastal bays is quite complex due to the many factors involved and deserves more intensive field campaigns and additional numerical modelling efforts.