Blooms in the Argentine Sea

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Phytoplankton blooms (high Chl-a) are mainly associated with frontal systems. Valdes P. (Squid and fish spawning areas, Acha et al. 2004) and Grande Bay (Squid and fish spawning areas, Garcia et al. 2008). Shelf-break areas are shown in the map. Diatoms and/or dinoflagellates (Dec) and Coccolithophores (Dec) (Garcia et al. 2011) are also indicated. Phytoplankton blooms (high Chl-a) are mainly associated with frontal systems. Breakout Group “Going beyond HPLC…. “ - IOCS 2019 9-12 Apr. 2019 – Busan, Korea
SHELF-BREAK

40-48°S

Nov-2004: 2–17 mg m$^{-3}$ Chl-a -> diatoms (2-10 um) and nano-phytoflagellates (<20µm) (Garcia et al. 2008).

47°S

In Spring 2005: 7.7 mgm$^{-3}$ Chl-a-> diatom *Thalassiosira bioculata* (>20–200 µm) ~90% 4.3·10$^6$ cells L$^{-1}$ (Carreto et al. 2016)

GRANDE BAY

Early summer 2003: 19 mgm$^{-3}$ Chl a-> diatom *Chaetoceros debilis* (3·10$^6$ cells L$^{-1}$) (Almandoz et al., 2007; Schloss et al., 2007).

Spring 2005: 28.6 mgm$^{-3}$ Chl-a -> dinoflagellate *Prorocentrum minimum* (10–20 µm), 10·10$^6$ cells L$^{-1}$

Shang et al. 2014

Carreto et al. 2018
Chascomus

- $T = 71$ FNU
- $\text{Chl}= 32.66 \text{ mg/m}^3$

Kakel

- $T = 1.4$ FNU
- $\text{Chl}= 6.53 \text{ mg/m}^3$

620 nm phycocyanin absorption

Cyanobacteria!

cell counting
Gaps...

- Lack of field campaigns in the shelf
- Lack of interaction with groups that do pigment analysis (HPLC)

Next steps...

- Continue sampling lakes (easier and cheaper)
- Include other type of quantification to supplement cell counting, like phycocyanin and phycoeritrin fluorescence