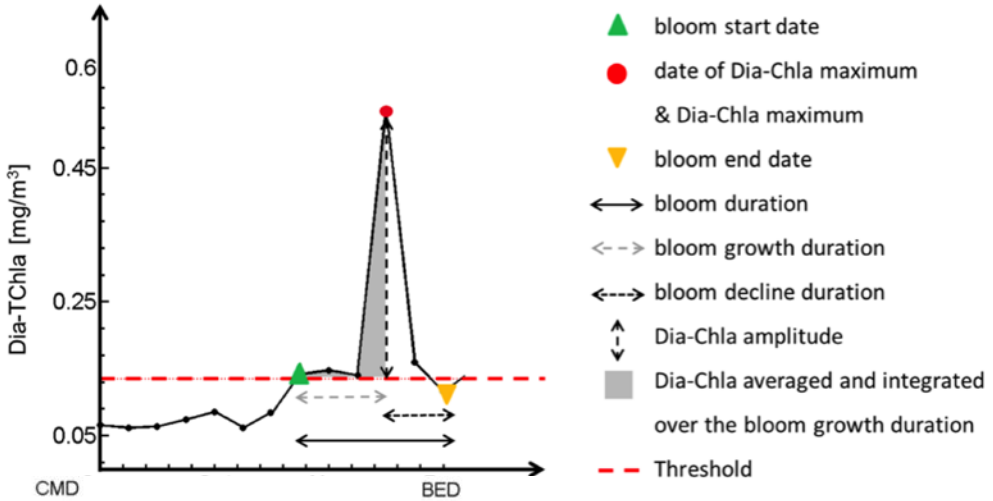
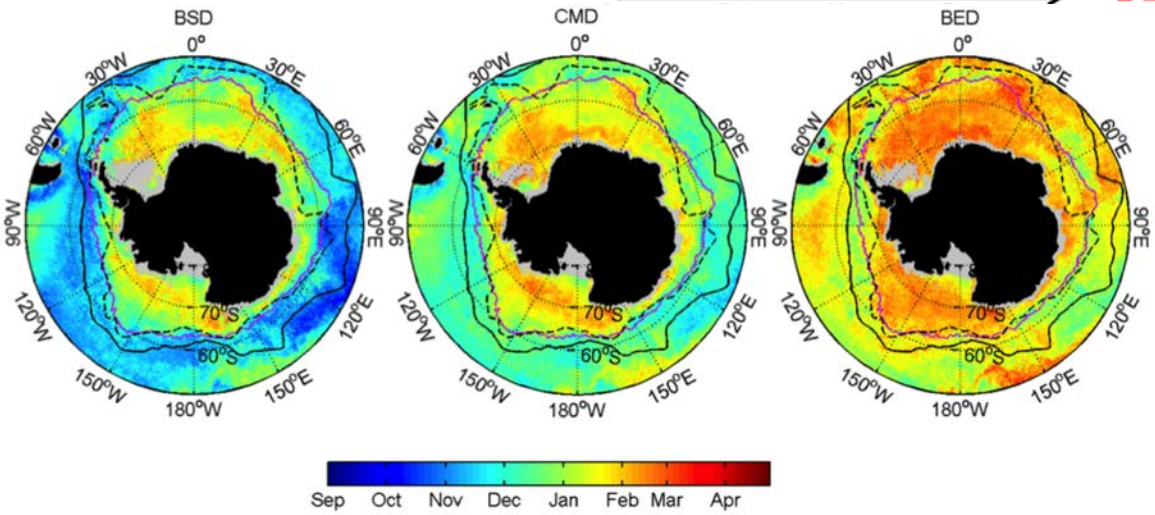
Soppa M. A., Völker C., Bracher A. (2016) Remote Sensing 8: 420 doi:10.3390/rs8050420

Diatom Phenology in the Southern Ocean: Mean Patterns, Trends and the Role of Climate Oscillations

- 15 years of satellite-derived diatom chl-a 1997–2012 based on the Southern Ocean diatom OC-PFT developed by Soppa et al. (2014) and applied to OC-CCI chl-a.

- Mean patterns and inter-annual variability of diatom bloom phenology in the Southern Ocean





Mean spatial patterns of timing and duration of diatom blooms generally associated with position of Southern Antarctic Circumpolar Current Front and of the maximum sea ice extent.

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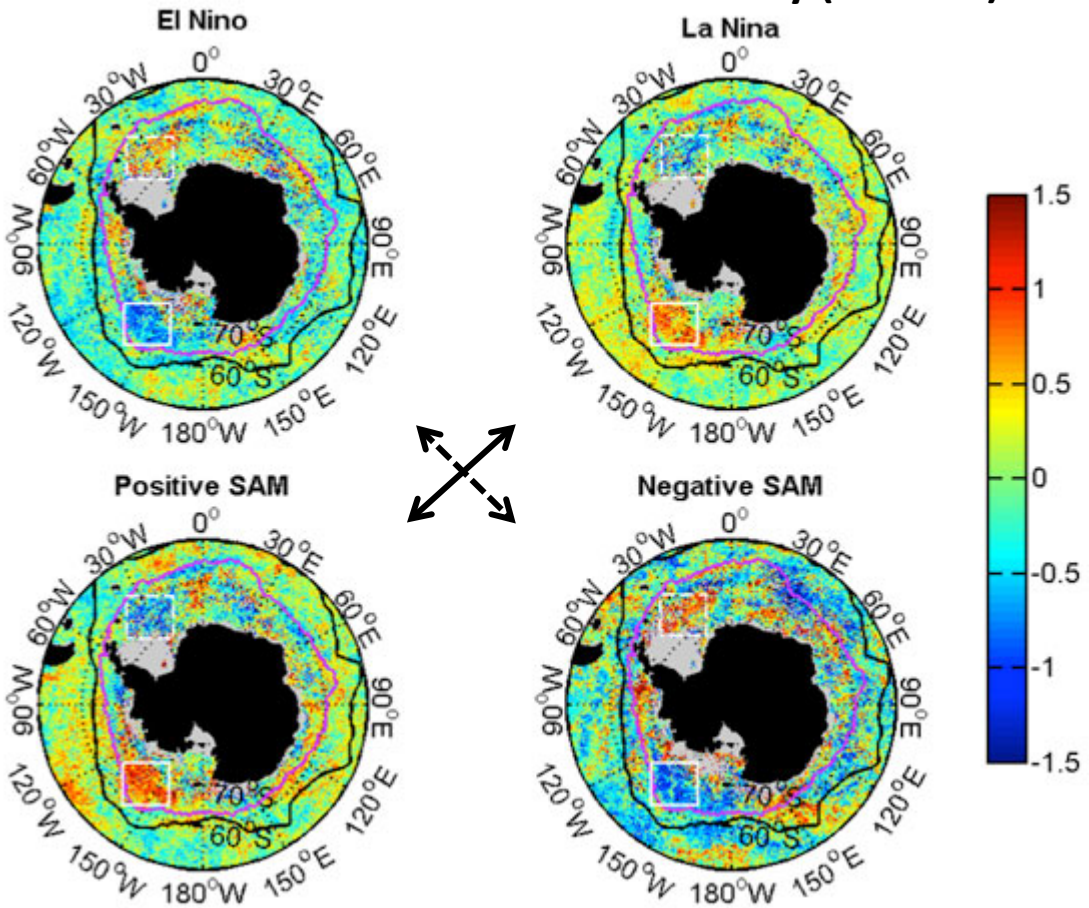
Diatom Phenology in the Southern Ocean: Mean Patterns, Trends and the Role of Climate Oscillations

→ Anomalies reveal distinct spatial patterns and opposite events of ENSO and SAM have similar effects on the diatom phenology

Weddell Sea:

- El Niño/negative SAM years characterized by later start, shorter duration and slightly higher biomass
- Likely related to higher ice conc. in these years (Kwok and Comiso 2002; Lefebvre et al. 2004).

Diatom bloom start date anomaly (months)



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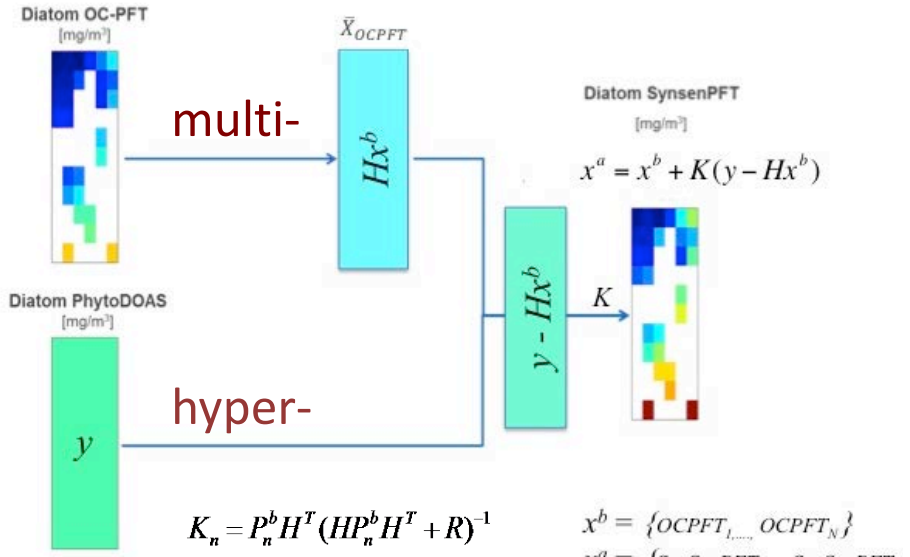
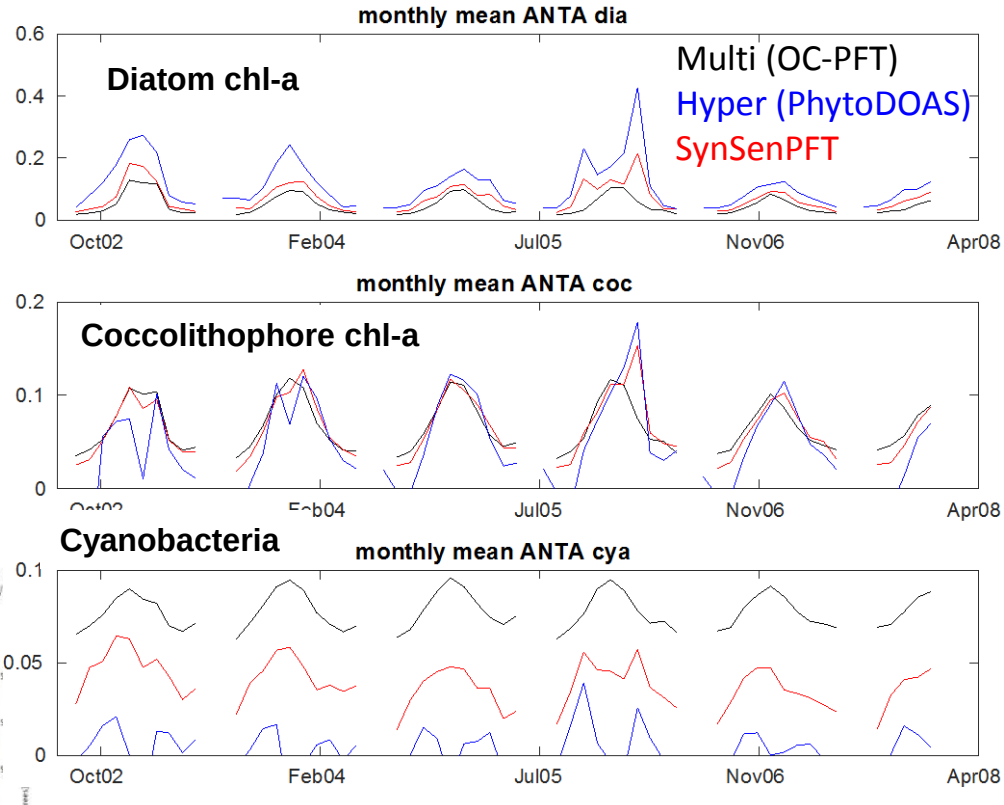
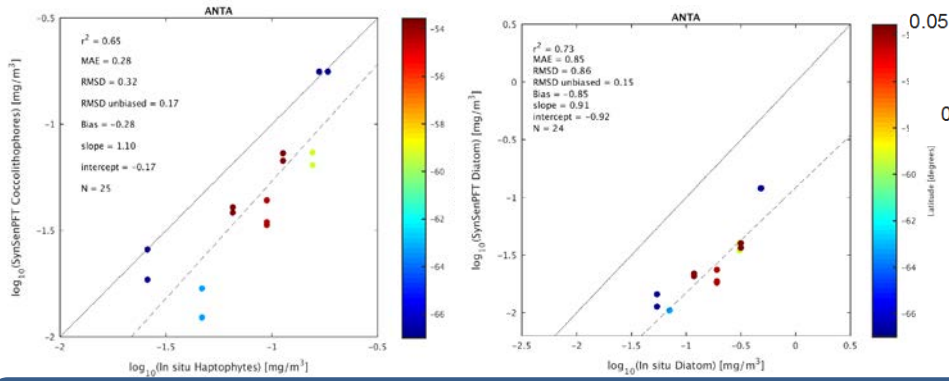
SynSenPFT: Combining hyper- (PhytoDOAS/SCIAMACHY) and multi-(OCPFT/OC-CCI) spectral satellite PFT data

S. Losa et al., Frontier in Marine Science – CLEO special issue (in review),
S. Losa et al. poster at IOCS with Arctic application







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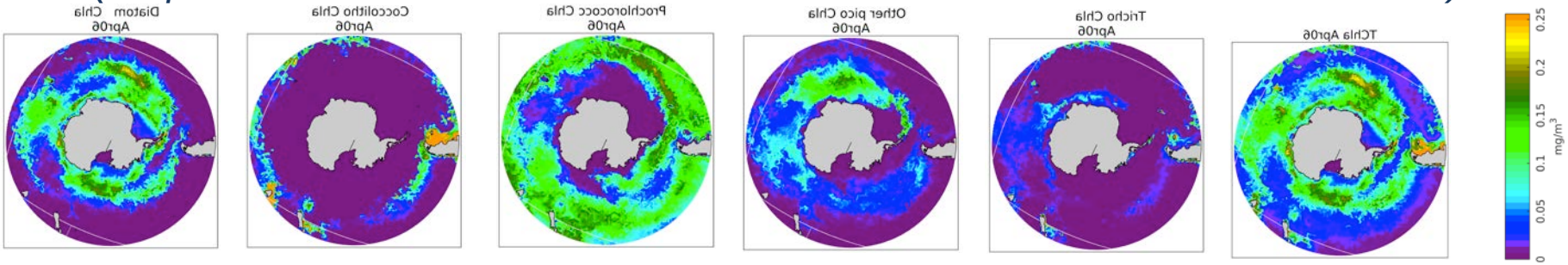
PHYSYN: Antarctic phytoplankton diversity based on modeling using SynSenPFT for evaluation & improving parametrizations

Svetlana Losa, M. Soppa, J. Oelker, S. Dutkiewicz, M. Losch, A. Bracher

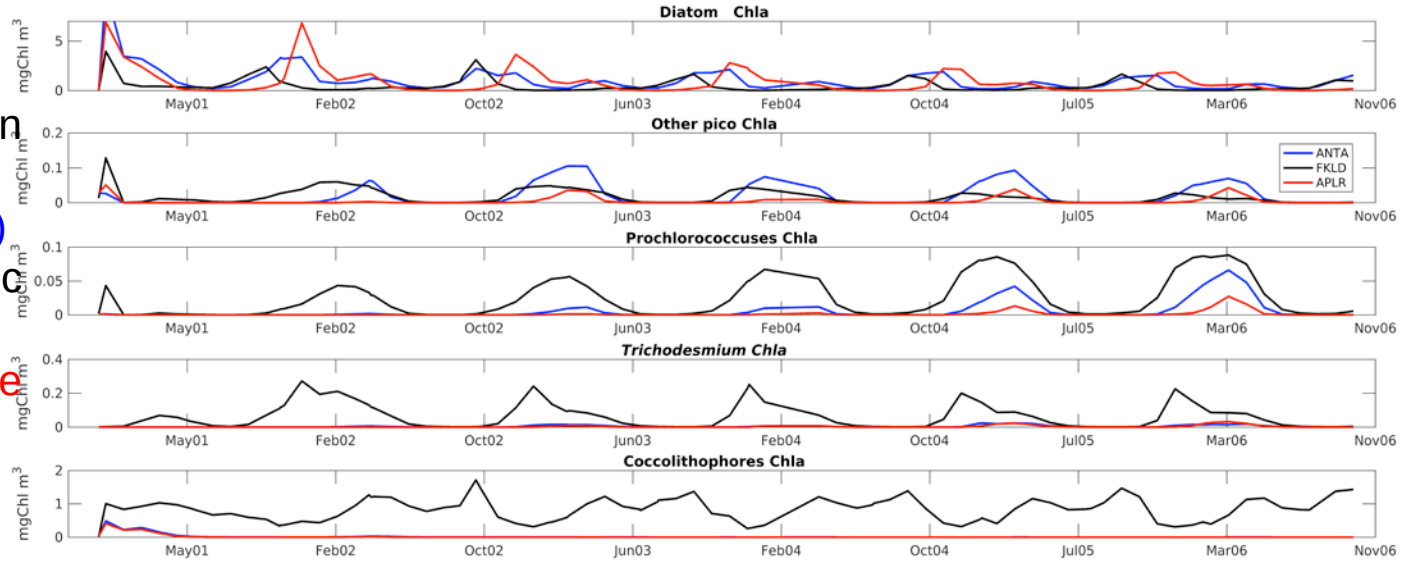
German Science Fundation Project – WORK in PROGRESS

Darwin-MITgcm PFT chl-a concentration

(adapted from Follows et al. 2007/Dutkiewicz et al. 2015 and Menemelis et al. 2008)



Model temporal evolution of PFTs chl-a conc. for Antarctic Province (ANTA) South-west Atlantic Shelves Province (FLKD) Austral Polar Province (APLR)



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