

INFLUENCE OF CALCIFYING PHYTOPLANKTON BLOOMS ON CARBON TRANSFER IN THE MESOPELAGIC OCEAN

combining ocean colour remote sensing and BGC-Argo float data



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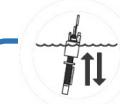
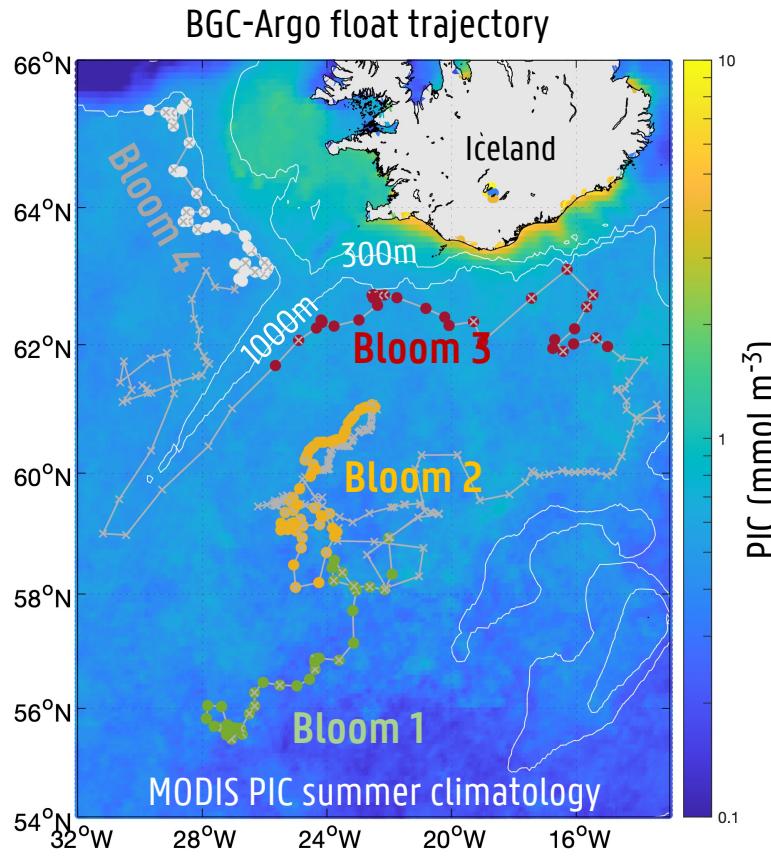
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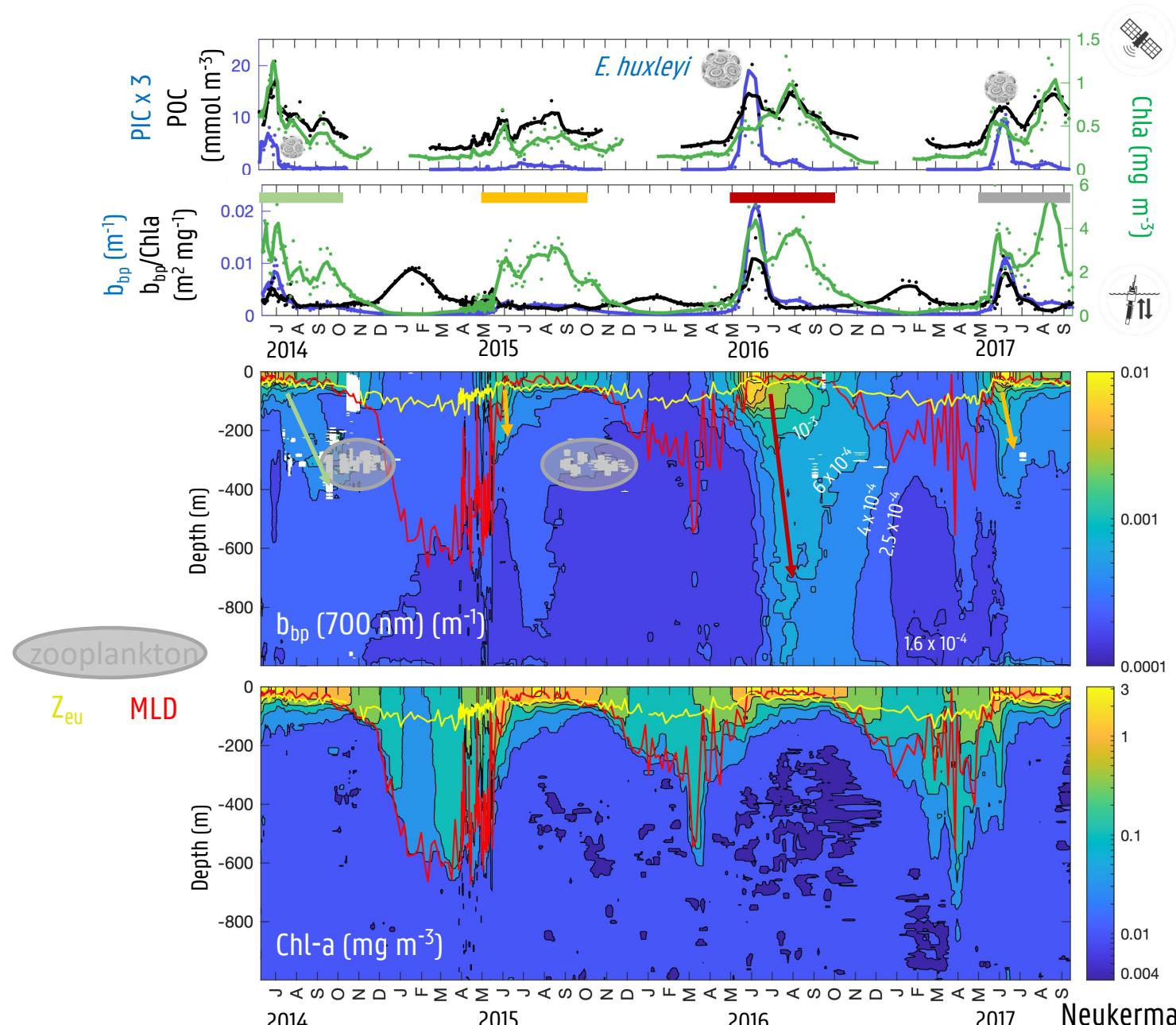
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Phytoplankton blooms and particle flux in the Iceland basin



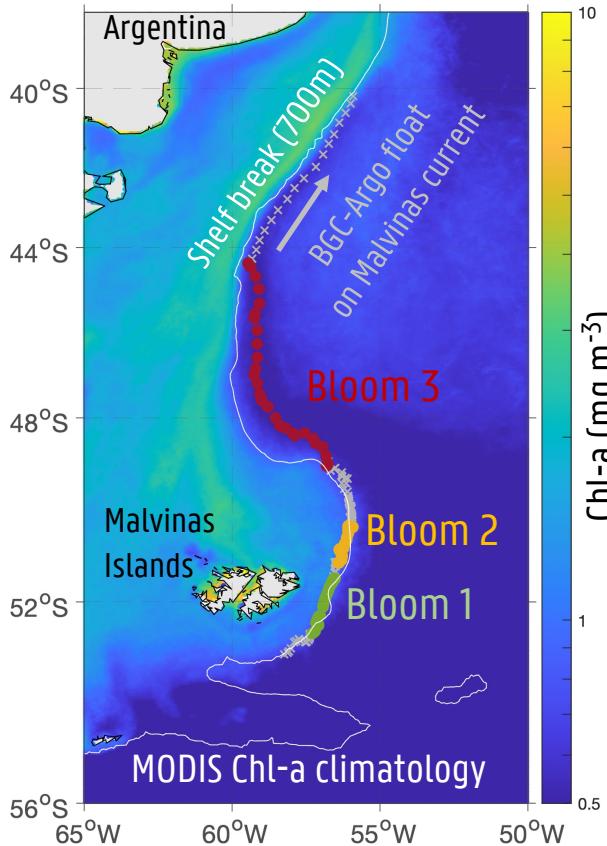
BGC-Argo PROVOR float

357 profiles (0-1000m) every 5 days, equipped with ECO-Triplet (F_{Chl} , bb , F_{CDOM}).
Vertical res: 1m (0-250 m), 10m (250-1000m)



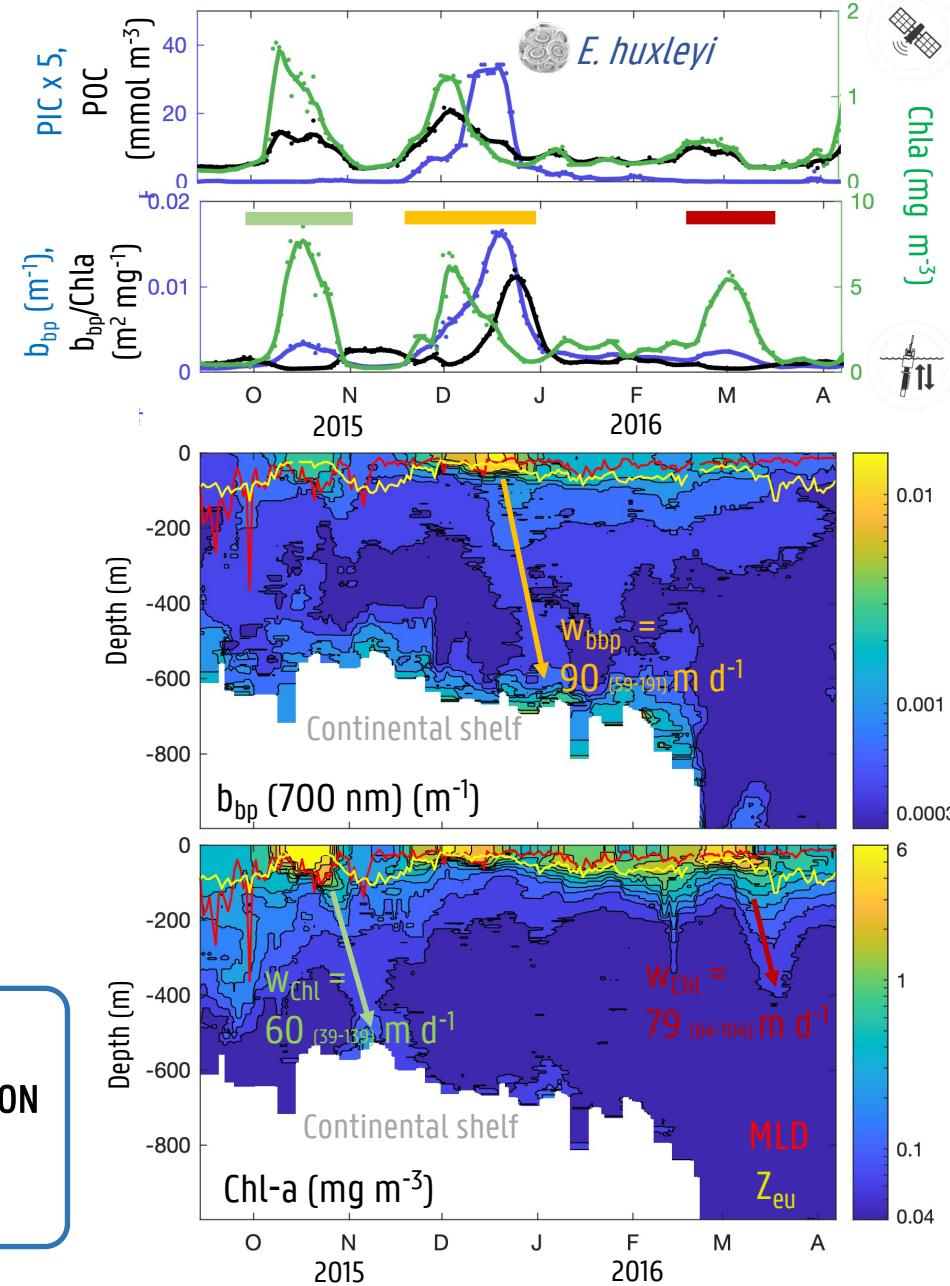
Phytoplankton blooms and particle flux along the Patagonian Shelf break

BGC-Argo float trajectory

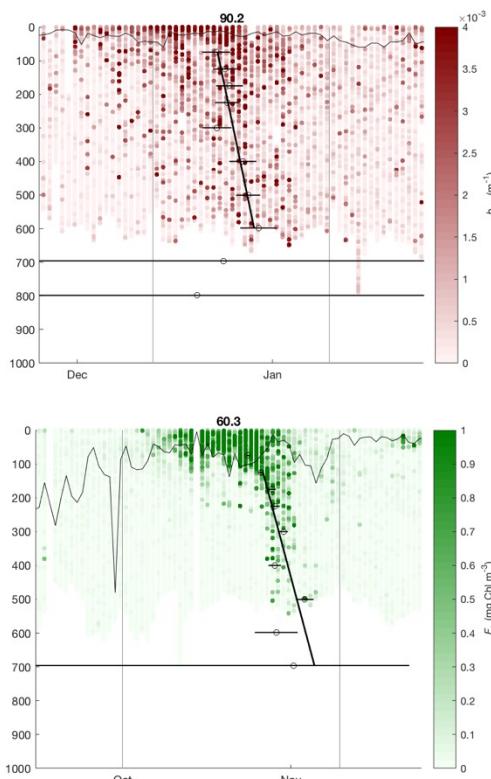


BGC-Argo PROVOR float

417 profiles (0-1000m) at **HIGH RESOLUTION**
(daily at 1m depth interval), equiped with
ECO-Triplet (F_{Chl} , bb, F_{CDOM}).



High-resolution float operation allowed estimation of sinking speed of large particles using F_{Chl} and b_{bp} spikes, w_{Chl} and w_{bbp} , respectively (Briggs et al. 2020).



Gaps and priorities

Short term priorities

Expand study to global BGC-Argo equipped with b_{bp} and FChl sensors

Develop autonomous PIC sensor for in situ observing platforms (ongoing CarbOcean project)

Mid-long term priorities

Deliver proof-of-concept for observing PIC and POC components of the Biological Carbon Pump from BGC-Argo floats (ongoing CarbOcean project)

Address knowledge gaps on the role of the oceanic carbonate pump and climate feedbacks