



Contribution ID : 81

Type : **Oral**

Nutrient controls on productivity overlying and offshore of oxygen minimum zones

Wednesday, 5 September 2018 17:15 (15)

Upwelling associated with eastern boundary currents transports nutrients to sunlit surface waters, fuelling phytoplankton productivity. Phytoplankton growth rapidly depletes supplied nutrients such that one or more become limiting; the supply flux of the limiting nutrient(s) is therefore the proximal control on productivity. In this presentation the results of direct experimental tests in surface waters overlying and offshore of two oxygen minimum zones (Peru and Benguela) will be presented, which map the identity of nutrients that are proximally/serially/co-limiting to phytoplankton communities. We find that in the current ocean the relative supply of iron and fixed nitrogen are the most critical proximal controls on productivity in these zones, with cobalt playing a secondary role. The results of these experiments can be interpreted in terms of the ratios of ambient dissolved seawater nutrient concentrations at experimental sites, and by inference, nutrient supply: demand ratios and the processes that control these.

Position

Postdoc

Affiliation

GEOMAR Helmholtz Institute for Ocean Research Kiel

Email Address

tbrowning@geomar.de

Are you a SFB 754 / Future Ocean member?

Yes

Primary author(s) : BROWNING, Thomas (GEOMAR Helmholtz Centre for Ocean Research Kiel)

Co-author(s) : Prof. ACHTERBERG, Eric (GEOMAR)

Presenter(s) : BROWNING, Thomas (GEOMAR Helmholtz Centre for Ocean Research Kiel)

Session Classification : 10 Biogeochemical Cycles: Feedbacks and Interactions

Track Classification : 10 Biogeochemical Cycles: Feedbacks and Interactions