



Contribution ID : 251

Type : Poster

Distribution of gelatinous macrozooplankton in relation to oxygen minimum zones in the eastern tropical Atlantic

Expansion and shoaling of mesopelagic oxygen minimum zones are impacting pelagic communities worldwide, but faunal responses are poorly known due to a lack of observations. In the eastern tropical Atlantic deoxygenation of the water column happens at one of the fastest rates worldwide. Gelatinous macrozooplankton (e.g. hydrozoans, ctenophores, pelagic tunicates) are predicted to cope well with reduced oxygen levels; they have relatively low metabolic rates and some species can store oxygen in their mesoglea. These characteristics have led to the hypothesis that gelatinous fauna may be winners in future hypoxic oceans. We studied the distribution and abundance of macrozooplankton species in relation to oxygen in the water column of the Republic of Cape Verde to 1) establish baseline observations of the diversity, distribution and abundance of mesopelagic gelatinous fauna and 2) to predict how vertical expansion of the OMZ will impact these fauna. Using the pelagic in situ observation system (PELAGIOS) we performed pelagic video transects down to 1000 m in ocean regions with typical OMZ conditions (oxygen minimum at 300-400 m), as well in a mesoscale cyclonic eddy. Identification and quantification of the observed dominant gelatinous taxa and correlation with the physical and chemical water column data resulted in detailed vertical distribution plots of medusae, ctenophores and siphonophores. The observed vertical distributions can be grouped into 7 general patterns in relation to the OMZ; (i) Above the OMZ (Cestidae); (ii) Above and within the OMZ (*Praya* spp.); (iii) Within the OMZ (*Colobonema* spp., *Halitrephes maasi*, *Lilyopsis* medusa, *Thalassocalyce inconstans*); (iv) Within and below the OMZ (*Halicreas minimum*); (v) Below the OMZ (*Atolla* spp.); (vi) Above and Below the OMZ (*Beroe* spp.); (vii) Above and within and below the OMZ (*Solmissus* spp.). We discuss these distribution patterns in the context of future ocean conditions in the eastern tropical Atlantic.

Position

Postdoc

Affiliation

GEOMAR Helmholtz Centre for Ocean Research Kiel

Email Address

hhoving@geomar.de

Are you a SFB 754 / Future Ocean member?

Yes

Primary author(s) : Dr HOVING, Henk-Jan (GEOMAR); Mr NEITZEL, Philipp (GEOMAR); Dr CHRISTIANSEN, Bernd (Universität Hamburg); Dr HAUSS, Helena (GEOMAR); Prof. KÖRTZINGER, Arne (GEOMAR); Dr PIATKOWSKI, Arne (GEOMAR)

Presenter(s) : Dr HAUSS, Helena (GEOMAR)

Track Classification : 02 Ecosystem Impacts