Ana
Fernández-Carrera
Leibniz-Institut für Ostseeforschung Warnemuende
Eric Achterberg, GEOMAR Helmholtz-Zentrum für Ozeanforschung
Rainer Kiko, Laboratoire d'Océanographie de Villefranche-sur-mer, Station Zoologique
Joseph P. Montoya, Georgia Institute of Technology
Marcus Dengler, GEOMAR Helmholtz-Zentrum für Ozeanforschung
Peter Brandt, GEOMAR Helmholtz-Zentrum für Ozeanforschung
Ajit Subramaniam, Lamont Doherty Earth Observatory at Columbia University
Oral
In the eastern tropical Atlantic Ocean, two kinds of open ocean upwelling systems develop in late boreal spring/early summer. On the one hand, a near-surface upwelling extends along the Equator from the Gulf of Guinea, commonly accepted to be induced by strong Easterlies, and produces an up to 6°C decrease of sea surface temperatures (the so-called Atlantic Cold Tongue). On the other hand, the Guinea Dome, a so-called thermal dome, develops off the coast of West Africa centered at around 11°N 21°W. Here, we present primary production measurements at 10m depth, inorganic nitrate and phosphate and hydrography retrieved during two research cruises on board FS Meteor in the late summers of 2015 and 2016. Samples were taken along a meridional transect at 23°W from 15°N (north of the Guinea Dome) to 5°S (southward of the influence of the Equatorial upwelling). We found the highest rates near the core of the Guinea Dome and around the Equator (12-14 mg C m-3 d-1), where a larger supply of inorganic nutrients by both upwelling systems would be expected, and a general shallowing of the nutriclines was observed. The lowest primary production rates (4-6 mg C m-3 d-1) were found at 5°N, between both systems, and coinciding with the boundary of two opposite zonal currents.
Meeting name
PIRATA-24/TAV Meeting
Download to PDF