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Evolution of coccolithophore carbonate content in the eastern tropical Pacific during the last climatic cycles (ODP sites 1240 and 1241)

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ODP sites 1240 and 1241 are situated under the equatorial upwelling system and the warm pool respectively, in the Panama Basin (Mix et al., 2003). This region is influenced by a current system that is driven by the prevailing direction of the Trade winds, the ITCZ position and the interannual variability of the ENSO events (Philander, 1995).

The vertical zonation of calcareous nannofossils was used to estimate paleoproductivity using the N ratio, which shows the relationship between the upper photic zone and the lower photic zone dwellers, and allows to reconstruct fluctuations in the nutrithermocline position. In the same way, ODP sites 1240 and 1241 were selected in order to assess the carbonate content contributed by coccolithophores along the last 600 Ka and 860 Ka respectively, and its correlation with the above mentioned paleoproductivity N ratio.

Our results support the idea that coccolith carbonate content is tightly coupled to the N ratio. Increased/decreased coccolithophorid production during the interval studied could be linked to the strengthening/weakening upwelling intensity.

References

Mix, A.C., Tiedemann, R., Blum, P., et al., 2003. Proc. ODP, Init. Repts., 202: College Station, TX (Ocean Drilling Program). doi:10.2973/odp.proc.ir.202.2003.

Philander, G., 1995. El Niño and La Niña. In: Pirie, R.G. (Ed.), Oceanography: contemporary readings in ocean sciences, Oxford Univ. Press, Oxford, U.K., pp. 72-87.