



## **Variations in paleoproductivity in Core MD03-2616 as were revealed by coccolithophores and long-chain alkenone production**

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High resolution of the sediment record from the PICASSO Core MD03-2616 was studied to reconstruct major changes in the paleoproductivity evolution along the upper 14 m. Core MD03-2616 is located in the Guyana Basin, which is an area influenced by the geostrophic flow along the Deep Western Boundary Current (Bianchi et al., 2001; Rhein et al., 1996), the Amazon fan, Trade wind intensity and the ITCZ position (Höflich, 1974 in Vink et al., 2000).

The analyses are based on the coccolithophorid variations through the N index and the long chain alkenones profiles. N index exhibits the relationship between the upper photic zone dwellers such as is the group of the reticulofenestrids (*Emiliana huxleyi*, small *Noerlabdaceae*, *Gephyrocapsa oceanica*, *Gephyrocapsa muelleriae* and *Gephyrocapsa cf. caribbeanica*), and *Florisphaera profunda* as a lower photic zone dweller. Values close to 1 are related to maximum production, and values close to 0 are associated with minimum production in the photic zone.

The N ratio varies very closely with long chain alkenone production, indicating high correlation between these two paleoproductivity proxies in spite of the influence of carbonate corrosiveness deep water and dilution of marine signal with terrestrial organic matter. In the same way, this correlation exhibits the importance of the N index as a useful tool as paleoproductivity proxy.

### References

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