

Interactive comment on “Coccolithophore fluxes in the open tropical North Atlantic: influence of the Amazon river and of Saharan dust deposition” by Catarina V. Guerreiro et al.

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GENERAL COMMENTS

The manuscript by Guerreiro et al. presents time-series records and analysis of coccolith fluxes from two sites in the central (sub-)tropical Atlantic Ocean, showing strong linkages to local hydrographic and climatic forcing on flux variability. Specifically, the authors show enhanced fluxes during periods of Saharan dust deposition, increased wind stress, and retroreflection of the Amazon outflow. The manuscript is well written and clearly presented, with the data and interpretation supporting the conclusions drawn. Though it would have been slightly more informative to examine coccolith-calcite fluxes,

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it is appreciated that this is likely to have only a minimal impact on the overall conclusions or insights gained. The article is a useful addition to the growing literature on coccolithophore ecology in low-nutrient environments and confirms the growing consensus that such regions of the ocean are not quiescent but are characterised by significant temporal (and spatial) variability. Before publication there are a few minor corrections that need attention.

SPECIFIC COMMENTS

Pg 6, Ln 14-16: Please note that the variability in incidental PAR levels at the two sites (range from 65.59 to 65.62 E m⁻² d⁻¹) is fairly minimal (~0.03 E m⁻² d⁻¹) and this should be mentioned in the text (despite the clear seasonality shown in Fig. 2).

Table 4: Please clarify the ‘numbers’ referred to in the table legend, e.g. “in Factor 3, numbers 7 and 12 indicate ..”.

Pg 16, Ln 6: Please clarify ‘Own SEM observations ...’.

Pg 18, Ln 27 (and elsewhere): Consider including an explanation of K-/r-selected ecological strategies somewhere in the text for clarity.

Pg 18, Ln 22-23: Consider rephrasing “In contrast, during spring, not only the Amazon was not yet present in the study area, but the nearly inexistent precipitation possibly resulted in ...” - numerous negatives statements becomes a bit confusing.

Pg 18, Ln 30-30: Unnecessary repetition of ‘recently’ in same sentence and *Trichodesmium* should be italicised (*Trichodesmium*).

Pg 18, Ln 34: Correct spelling of Falkowsky to Falkowski (et al., 1998).

Pg 18, Ln 39: Please explain meaning of LNLC (low-nutrient-low-chlorophyll) areas.

References: Couple of minor errors noticed, should all be checked. Those noticed are: Jickells et al. 2005. Please correct title. Margalef 1978 – not cited?

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