# Coccolithophore-carbonate contribution to the ocean floor on the southern Brazilian continental margin

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Exchanges of $CO_2$ between the ocean and atmosphere have an important role in global climate changes. Coccolithophores participate in both the carbonate and organic carbon pumps. In this context, coccolithophore participation in carbonate accumulation on the ocean floor was evaluated in a sedimentary core collected on the slope of the southern Brazilian continental margin (29°S, 47°W), an area that is influenced by the Brazil Current. Slides were prepared by dilution and pipetting (Koch & Young, 2007), and 500 coccoliths were counted for each sample. The age model was based on $^{14}C$-calibrated ages and the $\delta^{18}O$ curve obtained from benthic foraminifera (compared to the standard curve of Lisiecky & Stern, 2016). The carbonate content present in the coccoliths was estimated using C-Calcita software (Fuertes et al., 2014). The record contains Marine Isotopic Stages (MIS) 3 and 2. Coccolith abundances in the sediments were higher during MIS 3 than during MIS 2. The values varied from 68.9 to 6.1 x $10^8$ coccolith/g. The coccolithophore assemblages were dominated by *Emiliania huxleyi*, *Florisphaera profunda*, small *Gephyrocapsa* and *G. oceanica*. The coccolith carbonate content curve varied from 0.7 to 0.3 pg/$\mu m^2$. The correlation between these curves is 0.43, which is considered significant to $P$=0.05. However, both curves exhibit remarkable differences. For example, the decrease in carbonate content occurs later in the record, at 22.6 kyr. In addition, there are peaks in the coccolith numbers curve that do not have a correspondence in the carbonate content curve, and vice versa. These incongruities may be explained by differences in the fossil assemblages resulting from some species (i.e. *Coccolithus pelagicus* and *Helicosphaera* spp.) producing larger and more robust coccoliths than others. Therefore, in order to understand the potential contribution of this phytoplanktonic group to climate change, a detailed identification and quantification of the species is needed. Financial support was provided by IODP-CAPES grant 88887.091727/2014-01.

## References

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