

Reconstructing Continental Paleoclimate and Paleoceanographic Changes along the Chilean Continental Margin

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Southern South America is a key region to study past climates of the Southern Hemisphere mid-latitudes that resulted in considerable effort by the terrestrial paleoclimate community, e.g. within the PAGES PEP I transect. However, little attention has been paid so far to the marine paleoclimate record present in continental margin sediments along the west coast of southern South America.

Marine sediments along the Chilean continental margin provide a unique opportunity to study both the continental paleoclimate of mid-latitude Chile and the paleoceanography of the Peru-Chile Current system. Terrigenous signals in marine sediments, e.g., source areas, weathering conditions, and mode of sediment input can clearly be related to the strong climatic

zonation of Chile and allow its reconstruction in the past. The biogenic components provide on one hand a good potential for dating, both by ^{14}C AMS and $\delta^{18}\text{O}$ isotope stratigraphic methods. On the other hand they allow for a reconstruction of, e.g. sea surface temperatures and paleoproductivity within the coastal ocean.

Due to the large differences in the amount of supplied terrigenous material, our sediment core records from the Chilean continental slope allow past climate reconstructions on very different times-scales. The data provide a consistent picture of the history of climate and related paleoceanographic changes ranging from Milankovitch, i.e. precessional cycles during the last 120,000 years, to decadal time-scales within the Holocene.