



## **Late Quaternary climate variability in northern Chile and southwestern Africa; a southern-hemisphere perspective.**

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In this study we present grain-size distributions of the terrigenous fraction of one deep-sea sediment core from the SE Atlantic (offshore Namibia) and a transect of three cores from the SE Pacific (offshore Chile from 24° - 30°S), which we 'unmix' into subpopulations, and which we interpret as 'coarse' aeolian dust, 'fine' aeolian dust and fluvial mud.

The downcore ratios of the proportions of aeolian dust and fluvial mud represent palaeo-continental aridity records of south-western Africa and northern Chile for the last 45,000 yr.

All four records show a relatively wet Last Glacial Maximum compared to a relatively dry Holocene, but different orbital variability on longer time scales. We compare the continental aridity records to published South-American climate records and conclude that there is a pronounced high-latitude southern-hemisphere signal in all the records, caused by latitudinal shifts in the position of the moisture bearing Southern Westerlies, which lead to increased winter rainfall in the western parts of these continents. The influence of the Southern Westerlies gradually decreases from South to North and is overprinted by tropical forcing towards the equatorial parts of the Southeast Pacific Ocean.

This study supports the hypothesis that the continental climates on the two hemispheres are governed by their own specific climate forcing mechanisms and provides an alternative for relating proxy records to 65°N insolation.