



Evidence for the bipolar oscillation in ocean sediment cores

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While on Milankovitch time scale North Atlantic and Southern Ocean Sea Surface Temperatures (SST) change synchronously, during rapid climatic events at millennial time scale they show an opposite trend, following the bipolar see-saw hypothesis. However (as for ice cores), the main problem is the lack of a precise chronostratigraphy for the different sediment cores collected in the different oceans. Nevertheless, for two periods it is possible to establish a more precise time scale common to the different oceanic cores and to ice cores. (1) The last deglaciation, between 18 and 10 ka BP, which is interrupted by abrupt changes, where the ^{14}C datation is still precise and the ^{14}C calibration well known. (2) The glacial period around the Laschamps event, where Earth magnetic records in deep sea sediments serve as a chronological marker, and allow the correlation with markers in the ice. One of the Heinrich events (major icebergs discharge in the North Atlantic Ocean) that punctuated the last glacial period, occurred near the Laschamps magnetic event. It is thus possible to compare SST signal of cores from both hemispheres when their magnetic records exhibit the Laschamps event. For these two periods we will present SST records from the North Atlantic and from the Indian ocean. Their behaviour will be discussed emphasizing ocean-atmosphere interactions and changes in deep ocean circulation.