CLIMATE VARIABILITY OF THE LAST 25.000 YEARS IN AND OFF IBERIA: DIRECT LAND-SEA CORRELATION FROM THE MULTIPROXY ANALYSIS OF A NORTHWESTERN IBERIAN MARGIN DEEP-SEA CORE (TALK)

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Climate variability is a global phenomenon, primarily triggered by changes in solar radiation, which involves changes in the different Earth's reservoirs (ice, ocean, atmosphere, biosphere and land surfaces). Shifts in these five reservoirs modulate, in turn, climate throughout feedback mechanisms. For understanding the frequency, amplitude, mechanisms and consequences of the natural climate variability we need to reconstruct in detail the climatic patterns of the past. This reconstruction can be achieved by the correlation of deep-sea, ice and continental archives. However, it is well known that continental sequences are frequently discontinuous; usually cover short time periods and their pollen data generally represent local rather than regional vegetation from the surrounding areas. Furthermore, the establishment of independent age models in marine and terrestrial sequences prevents an accurate and reliable correlation between the responses of both environments to a given climate change. Marine sequences, in turn, usually present continuous and long records and pollen grains preserved in their sediments are the only proxy that allows a direct correlation between marine and terrestrial stratigraphies.

Previous studies on the modern pollen rain in oceanic sediments from north western and north eastern Atlantic, western African margin, Mediterranean Sea and Pacific Ocean have demonstrated the reliability of marine pollen records to reconstruct an integrated image of the regional vegetation and, therefore, the climate of the adjacent continent. The comparison between present-day continental (including coastal systems) pollen signatures and marine (including shelf and slope) pollen assemblages retrieved in and off the Iberian Peninsula allows us to show that marine pollen signal from the western Iberian margin represents the regional vegetation of the adjacent continent. Further, our study shows that marine pollen spectra clearly discriminate both the Mediterranean and the Atlantic plant communities from southern and northern Iberian margin samples, respectively. This study also allows understanding the present-day patterns of pollen dispersion in the Iberian margin by using the distribution of total pollen concentration.

Direct correlation between terrestrial (pollen) and marine climatic indicators and ice volume proxy from the high resolution deep-sea core MD99-2331, retrieved off northwestern Iberia (42° 09'N, 09° 41'W, 2120 m depth and *c.* 100 km from the present-day coast line) provides a record of the climatic variability of the last 25.000 years detected elsewhere in the North Atlantic region. It also accurately documents the regional vegetation changes in NW of Iberia during Heinrich 2, Heinrich 1 and Younger Dryas cold events, the Last Glacial Maximum, the Bölling-Alleröd interstadial, and the Holocene interglacial.

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