

MILLENNIAL-SCALE CLIMATIC VARIABILITY DURING THE LAST GLACIAL-INTERGLACIAL TRANSITION AND THE HOLOCENE IN THE NW OF IBERIA (TALK)

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Millennial scale climatic variability, known as the Dansgaard/Oeschger (D/O) cycles, have been detected in several ice, marine and continental records all over the world. These 1.500 year oscillations are recorded in North Atlantic deep-sea cores by the presence of ice rafted detritus deriving from northern ice-sheets (Laurentide, Hudson Bay and Fennoscandian) during the last glacial-interglacial transition and the Holocene. Bond *et al.* (1997) have defined eight cold episodes within the Holocene interglacial which occurred at 9.800, 9.100, 8.600, 7.400, 5.200, 4.000, 2.700, 1.600 years BP in the North Atlantic Ocean. These sea surface temperatures cooling are of low amplitude (less than 2°C) and the corresponding cool episodes are short (inferior to 100 years) usually preventing the detection of this millennial-scale variability.

The aim of this work is to document the vegetation response to this climatic variability in the northwestern Iberian Peninsula during the last glacial-interglacial transition and the Holocene. For this, pollen analysis has been performed in a high-rate sedimentary deep-sea core (MD99-2331, 42°09'00 N and 09°41'90W) retrieved in the northwestern Iberian margin and in two cores from Douro estuary (41°09'00 N and 08°38'00 W) covering the last glacial-interglacial transition and the Holocene. We have also analysed the pollen content of a core from the shelf (Po 287-13-2G, 41°09'39 N and 09°00'72 W) which covers the last 1000 years.

Both MD99-2331 and Douro estuary sequences record drastic vegetation changes during the last glacial-interglacial transition which characterise the Bölling-Alleröd interstadial, the Younger Dryas cold event and the beginning of the Holocene. Climate amelioration that characterises the beginning of the Holocene is marked by the settlement of an oak forest in the northwestern Iberian Peninsula.

During the Holocene two major changes in the percentages pollen diagram at around 7.400 (8.2 cold event) and 4.500 years BP are represented in the marine deep sea core (MD99-2331). The second deciduous forest reduction is related to a decrease of alkenones derives sea surface temperatures while the first one is contemporaneous to the maximum warmth in the ocean. This apparent contradiction can be result of the low resolution apply to the alkenone analysis. 8.2 cold event is also supported by changes in Planktic foraminifer's assemblages.

Core2 from the Douro estuary possibly detects two slight cold episodes between 10350 and 9450 BP.

Po 287-13-2G, 41°09'39 N shelf core presents no changes in the pollen percentages curves. However pollen concentrations jointly with changes of granulometry have allowed us to detect the well known historical episodes: the Little Ice Age and the Medieval Warm Period in the northwestern of Iberia.

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