



Changes in seasonality over the last 15 000 years in Mediterranean area

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In the current context of global warming, the Mediterranean area is very important in the study of climate changes. It is a particularly sensitive region in terms of hydrological variations and human impact.

This study aims to characterize the climate variations over the last 15 000 years in Mediterranean, quantify them and compare them with the trend and the climatic oscillations observed in Northern Atlantic. This study also focuses on the reconstruction of the seasonality parameters.

The quantitative past climate reconstruction is based on pollen data analyzed with a high-resolution from marine cores located in the Alboran Sea and Aegean Sea. These cores are located in the Mediterranean Sea according to a West/East gradient.

The Modern Analogues Technique is applied to the pollen data in order to estimate key climate parameters for this region, particularly the seasonality parameters: the mean temperature of the coldest/warmest month, mean monthly precipitation in summer/winter), and the annual precipitations. The database used has been extended with 3543 modern samples.

This study allows to highlight and to reconstruct quantitatively in the Mediterranean area the major climate oscillations observed during the Late glacial and the Holocene in north Atlantic. Thus, during the cold events of the Oldest and Younger Dryas, the

climate was dry with seasonal rainfall different from those observed nowadays. During the Holocene, the climate was temperate, and seasonal rainfall was similar to the present with high precipitations during winter and low during summer.

The pollen analysis and the climate reconstruction also allow the characterization of the micro-events like 8.2ka event, Older Dryas, and Gerzensee Oscillation, in the main sediments.