



Response of arid ecosystems to the Holocene climate variability along west and central Mediterranean gradients.

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Decadal to millennial climate variability is a common feature recorded by environmental series. However inter-connections between climate forcing (i.e. insolation, thermohaline circulation) and large atmospheric circulation patterns (i.e. North Atlantic Oscillation, Mediterranean Oscillation, Monsoon) still remain poorly understood considering their respective impacts on the global climate mechanisms.

In the Mediterranean area, joint climatic influences from high temperate and low subtropical latitudes result in a high sensitivity of ecosystems to climate changes and especially to extreme events. Several vegetation records illustrate millennial changes in Mediterranean. Nevertheless notable discrepancies in the environmental response arise between Mediterranean edges (east vs west, north vs south). The new paleoenvironmental record from Sebkha Boujmel (33°N, southern Tunisia) covers the last 8kyr and exhibits eight humid/arid fluctuations with cyclic expansion of the desert, related to Middle and Late Holocene rapid climate changes (RCC) occurring at a centennial scale. Sebkha Boujmel record is placed in the wider context of west Mediterranean and northern hemisphere. Asynchronies and disparity of the Mediterranean RCC occurrence documents north-south and west-east climate gradients in the west Mediterranean and pinpoint Sebkha Boujmel as the single vegetation record tracing as many climate events during the last 8kyr. Indeed the high sensitivity of arid environments triggers the prompt reaction of the southern Tunisian vegetation to Holocene RCC however tenuous. Pattern of RCC geographical occurrence in west and central Mediterranean is interpreted in the light of climate forcings involved for the Holocene centennial variability.