



Millennial-scale climate variations in western Mediterranean during late Pleistocene-early Holocene: multi-proxy analyses from Padul peatbog (southern Iberian Peninsula)

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Padul peatbog, located in southern Iberian Peninsula (western Mediterranean region) is a unique area for palaeoenvironmental studies due to its location, between arid and temperate climates. Previous studies showed that the Padul peatbog contains a continuous record of the last ca. 0.8-1 Ma, so it is an extraordinary site to identify glacial-interglacial phases as well as Heinrich and D-O events, linked to orbital- and suborbital-scale variations. In 2015, a new 42 m long core was taken from this area, providing an excellent sediment record probably for the last ca. 300,000 years. This study is focused on the paleoenvironmental and climatic reconstruction of the late Pleistocene and the early Holocene (ca. from 50,000 to 9,500 cal. yrs BP), using AMS ^{14}C and AAR dating, high-resolution pollen analysis, lithology, continuous XRF-scanning, X-ray diffraction, magnetic susceptibility and organic geochemistry. These different proxies provide information not only about the regional environment change but also about local changes in the conditions of the Padul lake/peatbog due to variations in water temperature, pH or nutrients.