

The study of sedimentary charcoals and pollen data of three paleobotanical sequences at different altitudes (Cueto de la Avellanosa, 1320 m; Sertal, 940 m and La Molina, 484 m) allows us to discuss the historical role of fire in the configuration of the forest landscape in Cantabria for the last 6,000 years.

Two types of fire have been distinguished: those burning woody vegetation, with great capacity of transformation of the landscape, and those others that have been used to maintain the open spaces.

Sedimentary charcoal records of wood burning since Neolithic times have been synthesized taking into account the frequency and the intensity of fires. The beginning of the Neolithic, the Age of Metals and the beginning of the Middle Ages have been defined as the moments with more fire episodes. In addition, the different causes of fires throughout the Holocene have been analyzed. In a natural regime the climate cycles seem to explain those of fires. However, from the Neolithic period the fire regime changes according to cultural patterns, exhibiting differences in the different historical periods.

There is a great abundance of charcoal particles at lower altitudes (La Molina) where a high frequency of fires has been identified between 6740 and 3500 cal yr BP and a low fire frequency over the past 3500 cal yr BP. At higher altitudes (Cueto de la Avellanosa and Sertal) the number of fire events is lower due to the existence of opened spaces since the beginning of the sequences. The number of fire events is in inverse proportion to the relative importance of grasses and other pollen indicators of open spaces.

ID: 01365, 32.- Large-scale hydroclimate variability and change of the Common Era: Patterns, Impacts, and Processes, (Poster)

Sahel rainfall negatively linked to global temperature during the past 1600 years

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As climate model uncertainties remain very large for future rainfall in the Sahel, a multi-centennial perspective is required to assess the relationship between global warming and the Sahel hydroclimate. We present here a new record of hydrologic conditions over the past 1600 years in Senegal, obtained from stable oxygen isotope analyses ($\delta^{18}\text{O}$) in archaeological shell middens in the Saloum Delta. During the preindustrial period, the Sahel was relatively humid, particularly from AD 1500 to AD 1800, during the coolest period of the last two millennia, referred to as the Little Ice Age. A strong negative link is observed at the centennial scale between global temperature and humidity in the Sahel, in direct contrast with the relationship observed elsewhere in the northern tropics, which shows that the processes linking the Intertropical Convergence Zone (ITCZ) and the West African Monsoon (WAM) are more complex than previously thought. The relationships between changes in the annual mean state and seasonal to interannual variability are explored using monthly resolved shell isotope records. In the context of the past 1600 years, the Western Sahel appears to be experiencing unprecedented drought conditions, resulting from a rapid aridification since AD 1800 that points to local and global anthropogenic forcings. This new long-term perspective suggests that under future global warming the potential for severe Sahel droughts may increase significantly.

ID: 02095, 02.- Quaternary climate and environmental change in the Southern Hemisphere, (Poster)

Unprecedented diatoms records show late Quaternary paleolake environments along the hyperarid Atacama Desert, northern Chile

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Atacama Desert is pictured by salt flats and plantless environments. Late Pleistocene (< 26-15 ka BP) subfossil diatom stratigraphic records and geomorphological evidence, however, show that shallow lakes existed. Here we describe 18 different diatom taxa from laminated lake sediments (13 samples from ~15cm profile) in the salt-encrusted Salar de Bellavista (section BV-01). Most of taxa are

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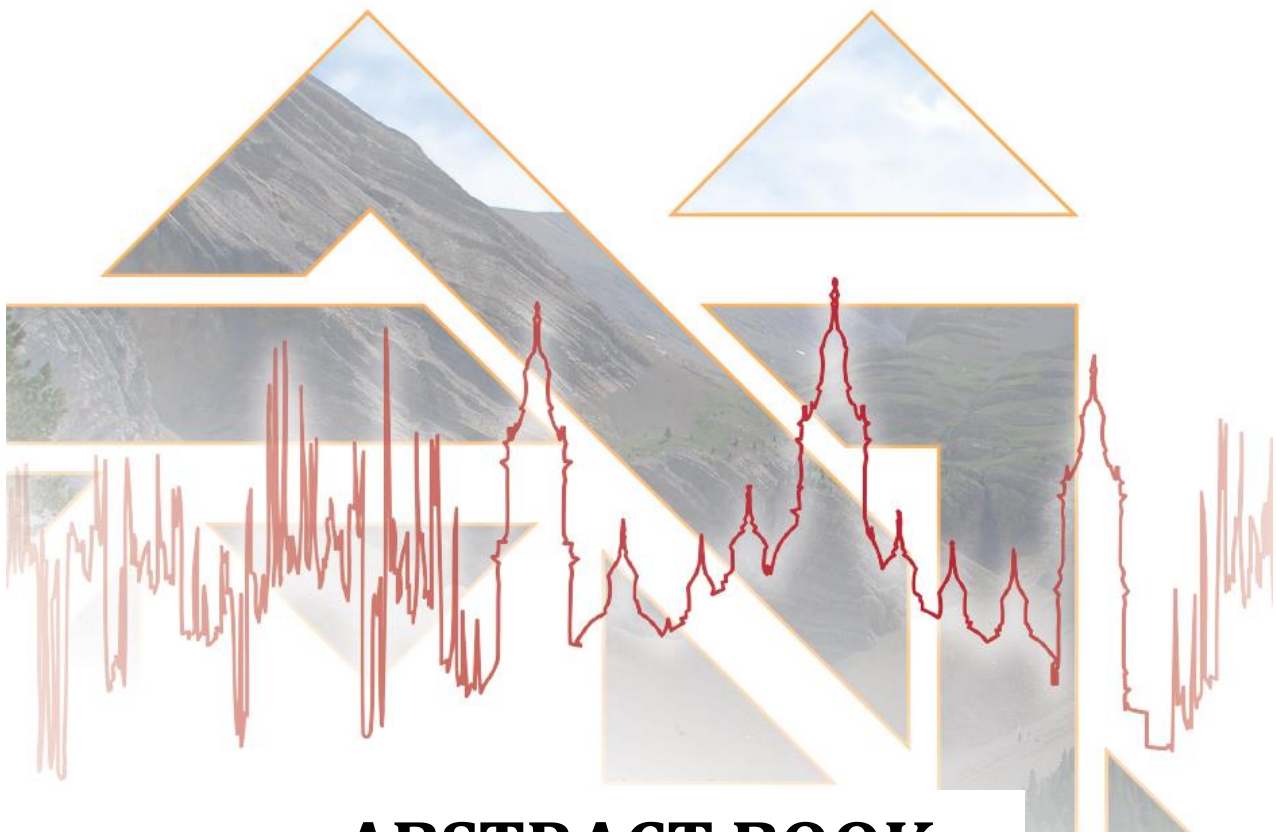


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