Coastal, lacustrine, fluvial and cave sediments as archives of past global changes in Northern Iberia: from the late glacial to the anthropocene

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This field trip examines a wide variety of natural archives of past global changes (cave sediments and speleothems, glacial, lacustrine, palustrine, slope, estuarine and coastal deposits) at different timescales, ranging from the Pleistocene to the present in Northern Spain. This area has a strong Atlantic influence and belongs to the Eurosiberian bioclimatic region, unlike most of the Iberian Peninsula, where Mediterranean conditions are dominant. Glaciers occupied highest altitudes (above 600 - 1000 m a.s.l.) of the ‘Picos de Europa Massif’ during the Last Glaciation reaching their maximum extension until ca. 37.2 cal kyrs BP (prior to the global LGM) and leading to the deposition of moraines and the formation of peatbogs and lakes, which provide long and continuous archives of the last deglaciation, like the Lake Enol sediment sequence. The abundance of carbonatic rocks has favoured intense karstification processes and the subsequent formation of a high number of caves, some of them unique, like El Soplao where particular forms such as
eccentric speleothems and organic-rich and Fe-Mn biogenic deposits occur. These caves have provided high-resolution records of climate changes during the Pleistocene and have been frequently occupied by humans, standing out as excellent sites for the analysis of human – climate interactions during the last 10 kyrs and their spatial variability. Finally, the occurrence of large forested areas, coal, iron and other metallic ores in the region favoured a comparatively higher industrial development in this region within the Spanish context, since the 18th and 19th centuries, leading to increasing erosion rates, mass-wasting processes and a significant environmental impact on lakes, rivers and estuaries. Limnological and environmental monitoring, together with short-coring allows investigation on the transformations experienced by these wetlands along Pre-, Industrial and Post-industrial times, as well as the onset of the Anthropocene epoch in Northern Spain.

*Field trip starts and ends in Zaragoza (3 days duration)*

*Maximum participants: 40 people*

*Cost includes field-trip guide, bus transport, hotel accommodation and living expenses*