

Position Offered: PREDOCTORAL RESEARCHER

Project: *Saharan dust during the Holocene through advanced observation technologies applied in sedimentary records and prediction of future scenarios using climatology in digital platforms*

Technological and scientific fields: Advanced Techniques in Earth and Ocean Observation; Global Change and Biodiversity

Location: Zaragoza, Aragón; Instituto Pirenaico de Ecología; <https://www.ipe.csic.es>

Research Group/PI: Paleoambientes Cuaternarios y Cambio Global; Jorge Pey Betrán (IPE-CSIC) y Pedro Salvador Martínez (CIEMAT); <https://www.ipe.csic.es/paleoambientes-cuaternarios-y-cambio-global>

PROJECT SUMMARY

The hired person will have the opportunity to use new observational techniques in geology to obtain large datasets of compositional, geochemical, and mineralogical information from sedimentary records. Through the application of advanced statistical techniques, these will culminate in the reconstruction of calima events throughout the Holocene. Additionally, they will develop a digital application to estimate the probability of calima events across different regions of Spain. The paleohistorical reconstruction of Saharan dust waves and the implementation of a digital platform to execute the described methodology will provide the scientific community, various administrations, and society at large with scientific evidence regarding the evolution of the phenomenon over the last millennia. This will also serve as a fundamental tool for air quality managers and public health authorities.

PROFESSIONAL PROFILE

Minimum requirements:

Bachelor's Degree in Environmental Sciences, Geology, Chemistry, or other equivalent specializations; Master's Degree; English and Spanish as working languages, at least B2 level.

Merits to be considered:

Knowledge in GIS, geochemistry, and mineralogy; Knowledge in environmental science, particularly in environmental legislation, air quality regulations, and applied experimental and analytical procedures and techniques; Knowledge in meteorology and climatology.

WHAT IS OFFERED

-Optimize a novel methodology to determine Saharan dust microlayers stored in complex sedimentary records and quantify their spatial-temporal contribution and variability during the Holocene in the Iberian Peninsula-Balearic Islands-Canary Islands sector.

-Integrate Saharan dust transport scenarios occurring between 1948 and 2020 into climate projections for the coming decades to infer the most likely trend.

-Develop a digital platform to enhance the predictability of calima episodes and thereby strengthen early warning systems.

-Training periods in Spain and abroad throughout the project, in both research centers and industry (60 ECTS); Training program in digital skills and advanced statistics (60 ECTS); Attendance at national and especially international conferences; and training in cross-cutting competencies (20 ECTS).

Contract conditions:

Predoctoral Researcher contract of 4 years' duration. Gross annual salary of 23,871.33 €.

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

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