Research Group in Atmospheric Environment

-ATMOSENV-

EURECA-PRO

INTRODUCTION

The **ATMOSENV** research group focuses its investigation activities on the physical and chemical characteristics of the atmosphere and the aerosol present in it, both of organic and inorganic origin. It is constituted by researchers from the University of León, with an evident multidisciplinary character (with graduates in Physics, Biology, Chemistry, Environment and Engineering). Each of the team members has extensive research experience in sectors such as pollen and allergens, precipitation and climatology, atmospheric aerosol (especially from combustion processes) and the sampling and analysis techniques associated to these lines of research.

The team has a consistent international projection, it has carried out work in different projects with institutions such as University of Aveiro, University of Cambridge, University of Toulouse, University of Bolonia, ISAC-CNR of Bolonia, etc. Members of the team regularly participate at international conferences and meetings. The team has received researchers from Portugal, Mexico, Venezuela, etc. Past PhD students have carried out stays at Argentina, France, Portugal, UK, Sweden, Austria, Holland, Italy, etc.

We are working together the Research Group in Finance of the University of Leon (Dr. María T. Tascón) in the black carbon measurement to develop a research line about the carbon performance and financial performance.

TEAM MEMBERS

- **Roberto Fraile (Head of the Research Group)**
- Delia Fernández-González
- Ana Isabel Calvo
- Carlos del Blanco-Alegre
- Estela Alexandra Domingos Vicente
- María Fernández-Raga
- Mª Rosa García-Rogado
- Alberto Rodríguez-Fernández
- Rosa Valencia-Barrera
- Ana Vega-Maray

AFFILIATION

Department of Physics, IMARENAB,
University of León, León, Spain

AREAS OF INTEREST

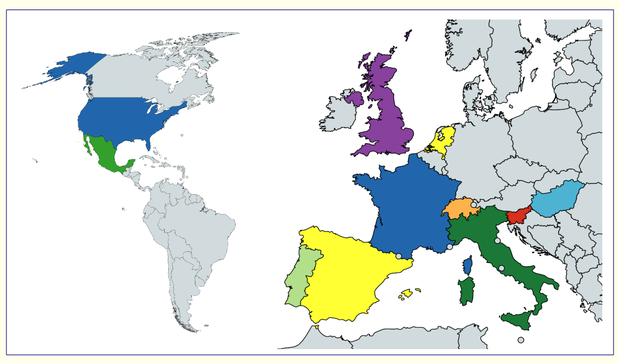
- Aerosols
- Aerobiology
- Atmospheric pollution
- Below-cloud scavenging of aerosol
- Climatology
- Indoor air quality
- Meteorology
- Protection of architectural heritage
- Source apportionment

RESEARCH EXPERIENCE

(LAST 10 YEARS)

- 110 JGR publications
- 250 contributions to international conferences
- 15 Research projects
- 9 PhD supervised

COLLABORATIONS



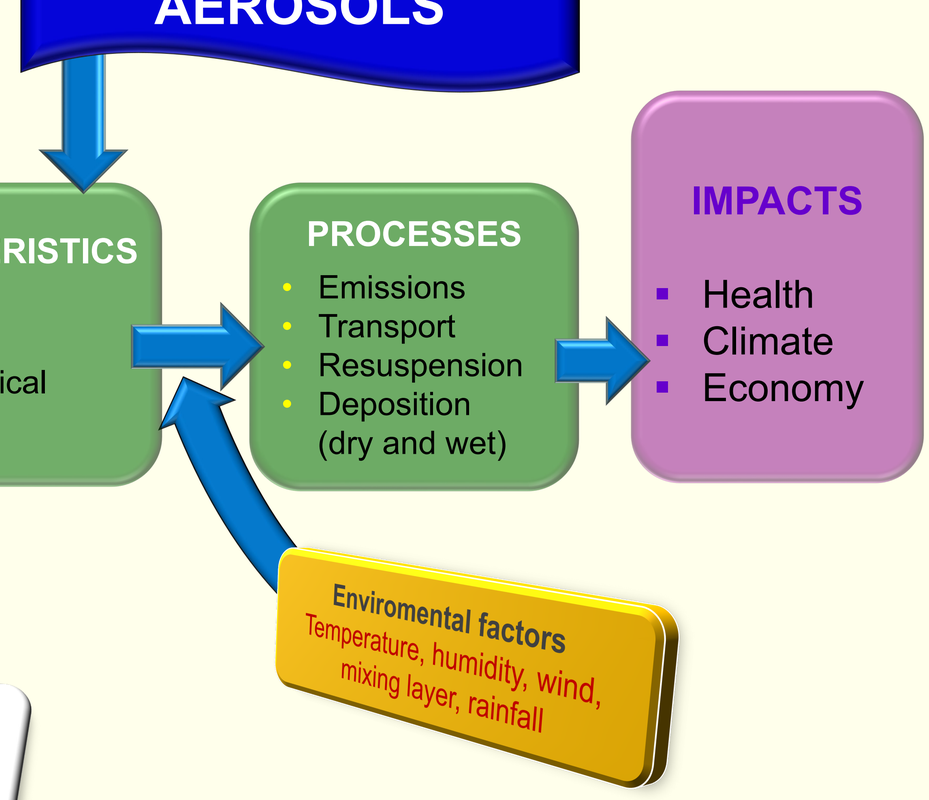
RECENT RESEARCH PROJECTS

- Relationship between bioaerosol and other pollutants: effects on allergic responses in different atmospheric scenarios (AEROHEALTH).
- Influence of rainfall on the concentration of particulate matter and pollen: climatic and clinical implications (AERORAIN).
- Atmospheric pollution by black carbon from coal combustion: use of the Aethalometer to estimate its contribution and quantify the scavenging by rain.
- Analysis of allergens and panallergens in the atmosphere.
- Study of the impacts of splash erosion on the limestone heritage and methodology for its protection (GRAPHENANTIUM).
- Bioaerosols and black carbon: impact on air quality.
- Expociencia 2018 #ConoceUnileon.
- The air we breathe: Molecular análisis of Alternaria spores in the atmosphere of Castilla y León and its impact on health.
- Expociencia 2019 #ConoceUnileon.
- Study on Safeguarding Cultural Heritage from Natural and Man-Made Disasters.
- Research agreement with the Junta de Castilla y León: Aerobiology information concerning pollen allergies.
- Research agreement wit Roxall Medicina España S.A.: Analysis of aerobiological samples.

CURRENT FUNDINGS

- European FEDER
- H2020
- Junta de Castilla y León
- Ministry of Science and Innovation
- University of León

AIMS OF STUDY



SCIENTIFIC INSTRUMENTATION

Filters for chemical analysis

Aerosol optical depth

Single scattering albedo

Aerosol sizes

Black carbon and total carbon

Bioaerosols

Rainwater

Raindrop sizes