

FOCI Project on „Non-CO2 Forcers and Their Climate, Weather, Air Quality and Health Impacts“. Call: HORIZON-CL5-2021-D1-01-0 Improved understanding of greenhouse gas fluxes and radiative forcers, including carbon dioxide removal technologies.

Scope of FOCI:

While overall the global warming related to the well-mixed CO₂ are well understood with a high level of confidence, there are knowledge gaps concerning the impact of many other non-CO₂ radiative forcers leading to low confidence in the conclusions. This relates mainly to specific anthropogenic and natural precursor emissions of short-lived greenhouse gases and aerosols with their precursors.

The main goal of the new EC Horizon Europe project FOCI is to assess the impact of key radiative forcers other than CO₂, where and how they arise, the processes of their impact on the climate system, to find and test an efficient implementation of these processes into global Earth System Models and into Regional Climate Models coupled with Chemistry Transport Models.

To constrain numerical sensitivity simulations a long-term comprehensive observational dataset of different climate-relevant species will be compiled using available information from a suite of observational networks/programmes/infrastructures such as GAW, ACTRIS, AERONET, EARLINET, among others.

Duties of the post Doc:

The selected candidate will work on the development of two comprehensive and harmonized databases of climate-relevant species (atmospheric aerosol particles and gaseous compounds).

The first database will be compiled using observations available in existing networks/infrastructures/EU-Projects, among others, and will include in-situ surface and column integrated concentrations of gaseous compounds (as CO, SO₂ and CH₄ among others), PM (particulate matter), PM chemical composition (OC, EC, SIA,...), aerosol particles optical properties (scattering, absorption, extinction,...).

The second database will include advanced information about climate-relevant aerosol properties that will be derived from the data included in the first database. This information will include variables such as mass absorption and scattering efficiencies (MAC and MSC) of specific chemical species like BC, OA, OA sources and SIA, single scattering albedo (SSA), asymmetry parameter (g), Brown Carbon (BrC) sources and optical properties, among others. The successful applicant will closely work with other research groups involved in the FOCI project with expertise in modelling and will support the evaluation between modelling results and observations.

We offer:

- Participation in a multidisciplinary research project with a focus on climate radiative forcing on non-CO₂ climate variables;

- A vibrant international environment;
- The possibility to develop and use for scientific purposes (e.g. papers) a unique database that will include all the variables useful for the FOCI Project.

Candidate should have:

- A recognized PhD degree in **Atmospheric Chemistry, Environmental engineering, Meteorology, Physics** or related disciplines;
- Previous experience in atmospheric composition field;
- Experience in atmospheric aerosol particles physical and chemical properties would be an asset;
- Excellent computing skills and experience with UNIX/LINUX environments.
- Experience with atmospheric science data formats (NetCDF, GRIB) and with scientific software and tools (Python is required)
- Excellent programming skills to manage big and collaborative projects and experience with Git version control system. Ability to independently develop and perform data analysis;
- Enthusiasm for scientific writing;
- Scientific results are expected to be published in international journals and the candidate should also present results in conferences
- A valid EU driver's licence (B) would be an advantage
- A reasonable command of English language would be an asset

We offer a full time permanent position (subject to funding availability). Annual gross salary will be about 30,000 Euro/year.

The position envisages a starting date in January 2023. This position covers health and social security benefits.

The selected candidate will work in Barcelona (Spain) at the Institute of Environmental Assessment and Water Research (IDAEA-CSIC).

Please address applications (motivation statement, research outline, CV, publication list and contact details of 3 referees in one coherent PDF file) in English to **marco.pandolfi@idaea.csic.es** and **oriol.jorba@bsc.es** before 10th of December 2022.