Postdoctoral Research fellow at CNRM, Toulouse, France
Aerosol properties from aircraft-based observations

Context

ACROSS (Atmospheric ChemistRy Of the Suburban forest, https://across.cnrs.fr) is a large-scale project awarded under the "Make Our Planet Great Again" (MOPGA) that aims at improving understanding of the impacts of the mixture of urban and biogenic air masses on the properties of gases and aerosols. The ACROSS Airborne Observations (ACROSS-AO) project, funded by the French National research Agency ANR, is the airborne component of ACROSS. Within this campaign, measurements of gases and aerosol properties in the Paris urban plumes were conducted in the Summer 2022 using instruments staged on the French ATR-42 research aircraft. The contribution of the CNRM laboratory to the project is to investigate the aerosol formation, ageing, and climate-relevant properties within the urban plumes.

Missions

The objective of this post-doctoral work is to perform data analysis of airborne aerosol measurements to investigate sources and transformations of atmospheric particles and their climate-related properties. In particular, the activities focus on the roles of physical and chemical interactions between anthropogenic and biogenic emissions in black carbon ageing, and their effects on the associated optical and hygroscopic properties. These assessments will be made using the rich dataset acquired on aerosol properties, such as aerosol size distribution, black carbon concentration, mixing state and hygroscopic growth and aerosol optical properties.

Activities

- Perform the data analysis
- Present results at meetings within the project and at national and international conferences
- Publish results in high-impact peer-reviewed journals.

Skills

- A PhD in atmospheric science (preferably since < 2 years).
- Expertise in quantitative aerosol measurements and related knowledge.
- Experience in SP2 and/or HTDMA instruments for black carbon and hygroscopicity measurements would be an advantage.
- Knowledge of a scientific scripting language (Python, Matlab, R,…).
- Written and oral communication skills in English.
- Working autonomously with close interactions with a team in a large collaboration.
- Scientific rigour and curiosity.

Working Context

The successful candidate will be based at the Centre National de Recherches Météorologiques (CNRM), Toulouse, France. CNRM is a joint laboratory of the research department of Météo-France and CNRS (http://www.umr-cnrm.fr/). With about 230 permanent staff, it conducts research activities in climate, weather and air quality governing processes. Within CNRM, the postdoc will be part of the MNPCA team, which conduct process studies on atmospheric aerosols, cloud droplets and their interactions. The postdoctoral work will be conducted in close collaboration with the partners of the project, in particular LISA and IMT in France and the University of Chieti-Pescara in Italy.

The contract will start preferentially on the 1st February 2023 for 18 months. Gross monthly salary will be between 2800 and 3960 €, depending on the candidate's experience.

Application procedure:

Applicants should submit their application to: https://emploi.cnrs.fr/Offres/CDD/UMR3589-CYRDEN-001/Default.aspx