Greenhouse gas emissions monitoring and evaluation

Post-doctoral / Young Scientist Position

Background

For the Paris agreement on Climate, timely reporting of greenhouse gas emissions by nations for different sectors and gases is needed. The anthropogenic CO_2 Monitoring and Verification Support (MVS) capacity developed in Europe based on the recommendations from the European Commission's CO_2 Monitoring Task Force addresses this need by developing an integration system capable of inferring emissions from observations (space and in situ), prior information such as bottom-up emission estimates from inventories and modelling as well as data assimilation capabilities.

Under the Copernicus Atmospheric Service (https://atmosphere.copernicus.eu) portfolio and the Horizon Europe CAMEO project (https://cordis.europa.eu/project/id/101082125/fr) we are looking for a motivated post-doctoral or young data scientist to work on:

- Development and timely provision of data quantifying the daily emissions of CO_2 from fossil fuel burning and cement production at national scale based on near-real-time activity data assembled from the Carbon Monitor project (https://carbonmonitor.org).
- Evaluation of daily CO2 emissions against national inventories and other relevant datasets
- Improvement of methodologies used to derive daily CO_2 emissions from activity data, including the use of satellite proxies and socio-economic indicators.
- Evaluation of atmospheric inversions results against regional and local estimates of greenhouse gas emissions for fossil fuel CO_2 emissions and CH_4 anthropogenic emissions

This work will be performed at LSCE, in collaboration with ECMWF, partners of the CAMEO project and the Carbon Monitor international team led by Tsinghua University in China.

Requirements

- Programming skills, preferably in Python / R
- Knowledge of remote sensing data processing and analysis

Selection Criteria

- PhD degree or Master degree in a field such as atmospheric modeling, data-science, remote sensing, signal processing, machine learning or statistics.
- Autonomy, ability to work in a team and time management skills.
- Experienced in multidisciplinary team-based activities with the ability to effectively communicate with colleagues and with staff from the partners of a project.

Academic supervision:

Main supervisor: Philippe Ciais. Research director at LSCE
Co-supervisors: Frédéric Chevallier, Research director at LSCE

What LSCE can offer you:

LSCE https://www.lsce.ipsl.fr
Is a world-class research laboratory established and a collaboration between CEA, CNRS and the University of Versailles Saint-Quentin -UVSQ. The LSCE hosts approximately 300 research- ers, engineers and administrative staff including many PhD and master's students. This project will provide the employee with the opportunity to work directly on advanced methods with re- searchers from the LSCE and other institutions. Location: about 20 km from the heart of Paris, in the Orme des Merisiers green area.

Contract duration: 24 months, with an extension possible.
Starting date: The position is available from Feb 1st 2023 and will remain open until filled. The expected start of the position is Spring 2023.

Salary: Competitive salary, full social and health benefits, commensurate with work experience.

How to apply: Applicants should submit a complete application package by email to the contacts below. The application package should include (1) a curriculum vitae including e.g. important recent publications / projects, (2) statement of motivation (3) answers to the selection criteria above (4) names, addresses, phone numbers, and email addresses of at least two references.

Contact philippe.ciais@lsce.ipsl.fr