



## **Instrumentation and metrology research engineer for in-situ and mobile greenhouse gas measurements “low cost” platform: laboratory and field operations as part of the TRACE project**

### **Context:**

Comprehensive information about greenhouse gas emissions is essential for decision makers to track the effectiveness of emission control policies in the context of the Paris Agreement on Climate. To answer that need, LSCE launches new research program known as TRACE, funded for four years by the French National Research agency and corporate partners. In collaboration with corporate partners Thales Alenia Space, SUEZ and TOTAL, the TRACE program will develop new GHG emissions measurement methods, going from the scale of an industrial site up to national and global GHG budgets, using satellite-mounted infrared spectrometers instruments and arrays of low-cost sensors deployed in situ, on the surface, around emitting industrial sites.

### **Job description:**

Responsibilities and tasks:

- Performance assessment (characterization), improvement and validation of new low cost GHG sensors (CO<sub>2</sub>, CH<sub>4</sub>) for in-situ and mobile operations.
- Conception and integration of the low cost GHG sensors and additional sensors/parts in a standalone measurement unit system suitable for field deployment (including mobile platform application).
- Performance assessment of a long open path CH<sub>4</sub> analyzer (including spatial scanning mode).
- Determination of the appropriate calibration strategy according to the application.
- Deployment of the measurement systems on test sites: processing, validation and analysis of CO<sub>2</sub> and CH<sub>4</sub> data collected.
- Data interpretation in collaboration with modelers to determine the optimum field deployment strategy to estimate the site GHG emission and evaluating the added value.
- Publication of the laboratory and field test results in a peer-reviewed academic journal.

### **Required skills/experience :**

- Knowledge in Greenhouse Gas measurement and sampling techniques with relevant experience in operating high-precision atmospheric composition analyzers (including data processing).
- Metrology knowledge especially in performance assessment methodology.
- Programming (ideally in Python and R).
- Raspberry Pi development
- Data acquisition system especially in Near Real Time.
- Mechanical design/conception (basic knowledge in CAD)
- Knowledge in atmospheric science especially in GHG emission estimate.
- Good writing skill





**Education :**

- Engineering degree with an experience in climate science
- or
- MSc or PhD in climate science with significant experience in GHG instrumentation and strong skills in Computer Science and Engineering.

**Location :**

The position will be hosted at Laboratoire des Sciences du Climat et de l'Environnement (LSCE) - in the south-west of Paris.

Address: LSCE, CEA - Orme des Merisiers, 91191 Gif sur Yvette.

**Contract duration :** 24 months – with a possible extension.

**Starting date :**

The position is available from Dec 2017 and will remain open until filled with review of applications and interviews.

**Salary :**

Salary follows national directives including full social and health benefits, and is adjusted for work experience.

**How to apply :**

Applicants should submit a complete application package by email to:

[contact-trace@lists.lsce.ipsl.fr](mailto:contact-trace@lists.lsce.ipsl.fr)

The application package should include (1) a curriculum vitae including most important recent publications, (2) statement of motivation and (3) names, addresses, phone numbers, and email addresses of at least two references.

