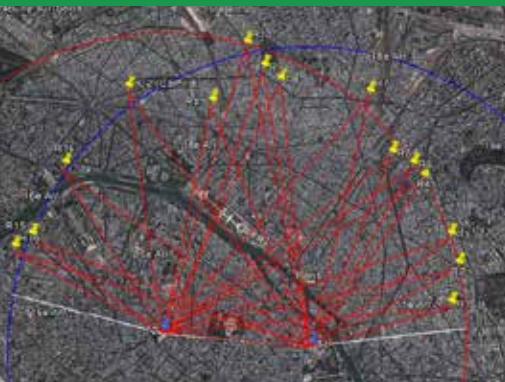


CONTINUOUS MEASUREMENT OF  
THE ATMOSPHERIC DENSITY OF CO<sub>2</sub>  
OVER PARIS (COP21)

# MONITORING OF THE SPATIAL DISTRIBUTION OF CO<sub>2</sub> OVER PARIS

**HARRIS**



## The Project

Responsible for over 70% of CO<sub>2</sub> emissions worldwide, cities are at the heart of the challenges arising from climate change. 3rd European megalopolis, the Greater Paris area emits 15% of national CO<sub>2</sub> emissions for 2% of the French territory. To date the level of uncertainty of the emission inventories is high. Comparison with spatial measurement will help scientists.

The French national Laboratory for Climate Science and Environment (LSCE) is a joint research unit between CNRS, CEA and the University of Versailles Saint-Quentin, gathering more than 300 scientists and contributing to the GIEC.

The LSCE is monitoring the atmospheric and the surface flux of CO<sub>2</sub> and GHG, mainly via several point CO<sub>2</sub> monitoring stations installed and maintained by Enviroearth within Paris area.

To complement these measures, LSCE is interested in the GreenLITE, an optical measurement system of CO<sub>2</sub> by laser absorption spectroscopy (LAS), co-developed by the company Harris Corp (USA) and the US Atmospheric and Environmental Research (AER) and initially used for leak detection above the CO<sub>2</sub> storage wells after capture (CCS).

## A World Exclusivity

Enviroearth accompanied Harris Corp, GreenLITE manufacturer, and LSCE in its implementation, installation & operation in Paris, pilot project during the COP21.

The device consists of 2 light sources -fixed on the top of the Montparnasse Tower and the Jussieu Tower - coupled with a series of 16 mirrors retro-reflectors distributed in a circle of half-arc of 5 km radius and fixed on building roofs, covering several boroughs of Paris-.

Weatherproof and designed to operate independently and in the long term, light waves are completely invisible, harmless to humans and do not disturb telecommunications.

The system allows to measure the atmospheric density of CO<sub>2</sub> over a large number of intertwined lines and to produce a real time 2D spatial CO<sub>2</sub> distribution map over Paris. A world exclusivity in an urban area.

## The Enviroearth expertise

### The stages of the project

- Identification of the buildings that can receive the transmitters and retro-reflectors, permit application to the stakeholders,

- Installation and service the GreenLITE device, data collection over a period of 3 months,

- Development of a 2D mapping from very precise data collected,

- Unveiling of the method measurement and publication of results at the COP21 in Paris in December 2015.

### Our added-values

- Adaptability, responsiveness, diplomacy

- Experiences of operations and maintenance of sophisticated measurement systems,

- Experience in coordination of complex projects (logistics, technical, administrative, ...)

### Partnership:

LSCE/ LATMOS/ HARRIS Corp / AER,

and with the kind participation of: Paris Habitat, ELOGIE, CESE, ICADE PROPERTY MANAGEMENT



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