



SAGE
Sciences de
l'Atmosphère
et Génie de
l'Environnement

**Post-doctoral position on inorganic vs
organic secondary aerosol production in
north of France within the context of climate
change**

The Department of Atmospheric Sciences and Environmental Engineering (SAGE) of IMT Lille Douai, France (<http://sage.imt-lille-douai.fr/>), has ongoing research activities focused on the impact of climate change on air quality and atmospheric composition. SAGE is currently composed of a staff of about 50 people, including 17 full-time faculty members. This position is available for one year, with possibility of extension for another 6 months. The expected starting date is January 2019.

Project description:

The north of France is submitted to frequent episodes of high particulate matter (PM) concentrations, to which secondary organic and inorganic aerosols contribute largely. In the context of climate change it is predicted a possible increase in the emission of biogenic volatile organic compounds (VOCs), known as effective precursor gases for secondary organic aerosol (SOA). This change may modify not only the availability and chemical composition of SOA, but also of secondary inorganic aerosols (SIA). Indeed, several laboratory studies have shown the influence of SIA precursor gases (e.g. SO₂, NO_x, NH₃) on SOA formation yields and vice-versa. These interactions are still not fully elucidated.

The main objective of this work is to investigate drivers leading to changes in volatile organic compounds (VOCs) composition and levels that are precursors of aerosol particles observed in northern France. A special focus will be put on the coupling of both VOCs and SIA precursor gases for the formation of secondary organic and inorganic particles.

The postdoctoral position will conduct an intensive field campaign in northern France during the summer of 2019 to measure aerosol and gas-phase species applying state-of-the-art techniques such as High-Resolution Aerosol Mass Spectrometer (HR-AMS), Proton-Transfer-Reaction Time-of-Flight Mass Spectrometer (PTR-ToF-MS), a Monitor for Aerosol and Gases in Ambient Air (MARGA), among others. The post-doctoral fellow is expected to present the findings in international conferences and lead peer-reviewed publications.

The successful applicant will hold a Ph.D. degree in a relevant area of atmospheric sciences and will have a good knowledge of the field of research, as well as skills in mass spectrometry techniques (AMS and/or PTRMS). A previous experience of field measurements, as well as knowledge of the IGOR software, and source-receptor models, will be assets for this position. Good proficiency in English is a prerequisite, as well as a valid driving license.

Applicants are invited to send their Curriculum Vitae, a cover letter, and two reference letters to:

- Dr. Joel F. de BRITO (joel.brito@imt-lille-douai.fr)
- Dr. Sébastien DUSANTER (sebastien.dusanter@imt-lille-douai.fr)
- Dr. Esperanza PERDRIX (esperanza.perdrix@imt-lille-douai.fr)

Review of applications will begin immediately and continue until the position is filled.