Job description - Post-doctoral researcher

Impact of hypersonic aircraft emissions on atmospheric chemistry and climate

Laboratoire des Sciences du Climat et de l'Environnement (LSCE)

Gif-sur-Yvette, France

Job description : The *Laboratoire des Sciences du Climat et de l'Environnement* (LSCE) is developing and using in collaboration with *Institute Pierre Simon Laplace* (IPSL) partners a global atmospheric chemistry-aerosol-climate model coupling both the troposphere and stratosphere. We are proposing a grant-holder position to a person to be involved in research activities in our team in the framework of the STRATOFLY H2020 project. The successful candidate will participate to the development of the LMDz-INCA global climate-chemistry-aerosol model and apply the model to investigate the impact of hypersonic aircraft emissions (mostly H_2O and H_2) flying at MACH8 in the stratosphere on atmospheric composition and climate. In particular the candidate will assess the impact of hypersonic aircraft emissions on stratospheric aerosols based on the recently developed sectional stratospheric sulfate aerosol (S3A) model. This new aerosol model will be used coupled to the climate-chemistry model in order to investigate the impact on radiation and heterogeneous chemistry. The objective will be to estimate the various radiative forcings of climate arising from hypersonic aircraft exhaust to the atmosphere and the response of the climate system at the 2050 time horizon. In addition to these scientific activities, the candidate will participate to the project regular meetings in Europe and will present results at international conferences on aviation or atmospheric sciences.

Required qualifications : The candidate should hold a PhD degree in physics, chemistry, environmental sciences or equivalent. The highly motivated candidate should be able to demonstrate concrete and meaningful skills in numerical modeling (programming in Fortran, work on LINUX systems, handling of large computer programs and datasets), and have a proven publication record. We will favor candidates with prior experience in atmospheric chemistry/aerosol modeling. A good command of English is also required.

Duration : 24 months.

Preferred starting date: September 2018.

Salary : The salary will be adjusted to work experience according to the CNRS internal salary system and includes full social and health benefits.

Location : The position will be based at *Laboratoire des Sciences du Climat et de l'Environnement (LSCE)* in Gif-sur-Yvette (25 km SW of Paris), France.

How to apply : please send a motivation letter and a CV to Didier Hauglustaine (didier.hauglustaine@lsce.ipsl.fr) and Olivier Boucher (olivier.boucher@lmd.jussieu.fr).