

Postdoctoral Fellowship Position in Lidar Applications to Ocean Color

A two-year postdoctoral position is jointly proposed by the Laboratory of Oceanology and Geosciences LOG (Wimereux, France) and the Takuvik International Research Laboratory (Université Laval and CNRS, Canada) on the simulation of the lidar signal in the ocean. The position is jointly funded by Université du Littoral-Côte d'Opale and the Institut France-Québec Maritime.

Objectives

Recent studies showed the feasibility to study the ocean using space-borne lidars. However no dedicated space-borne oceanic profiling lidar exists or is in plan to be launched in the near-future. For the preparation of such a space mission it is necessary to characterize the propagation of the lidar signal through the atmosphere and the ocean. Only few studies on this topic have been published in recent years. Monte-Carlo simulations are used to study the interaction of the lidar signal with the marine particles from space. These studies are preliminary and require to include more contributions from diverse optically-active marine constituents. This will help studying the impact of the constituents on the shape and magnitude of the lidar signal over the water column and to characterize the specifications of a space-borne oceanic profiling lidar.

The successful candidate will use published lidar simulators to enhance their capabilities. Sensitivity studies will be performed on the lidar signal and magnitude depending of the concentrations of the optically-active constituents or depending of the specifications of a space-borne oceanic profiling lidar. The candidate will study the vertical depth reached by a space-borne lidar, and will include the inelastic scattering (fluorescence, Raman, Brillouin) and explore multispectral detection. Applications from drones may be examined as well in the prospect of a deployment in the Arctic. Depending of the background of the application, the project could include the development of a drone-borne lidar and a deployment in Arctic during an oceanographic campaign during summer 2023.

These studies will help defining possible future space-borne oceanic profiling lidars.

Qualifications: PhD degree in optics or remote sensing. Expertise in lidar would be ideal but is not mandatory.

Technical skills required: Optics, programming (matlab, python, C), remote sensing, monte-Carlo simulation, radiative transfer

Application closure date: January 15, 2021

Start date: February 15th 2022 (at best)

Position Length: up to 10.5 months at LOG in 2022 and a possibility to a second year at Takuvik in 2023 (not mandatory).

Salary: 2500€ gross monthly for the period at LOG

Location: The candidate will be located at LOG in 2022 (possibility to be one-year at Takuvik in 2023)

LOG, 32 avenue Foch, 62930 Wimereux, France ; Takuvik, Université Laval, Québec City, Canada

Applicants must submit:

- A detailed CV, including the e-mail and phone number for three references
- A short cover letter explaining the applicant's experience related to the position and motivation

For question and application's submission, please contact:

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