

12-month position at CNRM, Toulouse, France Post-launch development of ground segment processors for the ESA Aeolus lidar mission

Framework :

The Instrumental and Experimental Meteorology Group (GMEI) of the Centre National de Recherche Météorologique (the research centre of the french weather service Météo-France) has been involved in the preparation of the Aeolus mission for several years. Funded by the European Space Agency (ESA), Aeolus should take-off at the end of August and will carry the first high-spectral resolution Doppler lidar (HSRL) in space. It was designed to retrieve wind profiles all over the globe through the entire depth of the troposphere. Although it is primarily designed for the measurement of winds, the HSRL capability of the space borne lidar enables the measurement of the aerosol backscatter and extinction coefficients without any *a priori* assumption on the aerosol type. In this framework, GMEI is in charge of the development of two processors for the ground segment of the mission :

- the "Calibration Suite" characterizes the spectral transmission properties of the instrument needed for the retrieval of wind and aerosol products.
- the level 2A prototype processor is used to derive aerosol optical properties.

Both software prototypes are developed in MATLAB.

Work description :

The candidate will reinforce the team (2 persons) in place and take part in the refinement of both processors during the early in-orbit phase, when the first "real" data will become available. He/She will first be trained to get familiar with the mission concepts and data processors using the End-to-End Simulator (E2S) of the mission. The objective is to be up to speed rapidly after the launch (planned for end of August 2018).

In collaboration with the other team members, the candidate will particularly work on:

- the refinement of the calibration suite taking into account ground tests results and in-orbit measurements.
- the assessment and monitoring of the performances of the L2A, using in particular data from Calibration and Validation experiments conducted worldwide by many research teams.
- the preparation of specific simulations for assimilation experiments.
- the update of technical documentation and preparation of reports.

The position requires the participation in progress meetings with partners from ESA and other research institutions in Europe. The team will assure a continuity of service (answer problems in less than one working week) in the months after launch and the successful candidate is expected to take turns in this cycle. The working languages are English and French, the "local" colleagues are French-speaking.

Desirable qualifications:

- Engineer Diploma or Master's Degree in remote sensing and/or atmospheric sciences, a PhD would be a plus.
- The position requires good skills in MATLAB for data processing and working in a LINUX environment.
- The candidate shall speak and write English fluently (meeting with the ESA partners).
- Experience on (space-borne) optical remote sensing would be appreciated.
- The candidate should have good ability to work in team and the sense of initiative.

Practical Information:

Targeted starting date: 01/08/2018

Duration of the contract: **12 months initially, possibly followed by a 2-year extension.**

Monthly salary: 1600 to 2500 € depending on experience

To apply send a resume and a motivation letter before 11/06/2018, to: thomas.flament@meteo.fr and alain.dabas@meteo.fr

Questions regarding the position can be addressed to thomas.flament@meteo.fr