FICHE DE POSTE

Date : 24th September 2021

PERMANENT CONTRACT

AERODYNAMICS, AEROELASTICITY, ACOUSTICS DEPARTMENT

LILLE

AERODYNAMICS AND FLIGHT DYNAMICS ENGINEER (M/F)

ONERA, a central player in aeronautics and space research, employs approximately 2,000 people. Under the supervision of the Ministry of the Armed Forces, it has a budget of 237 million euros, of which more than half comes from commercial contracts. As a government expert, ONERA prepares tomorrow's defense, meets future aerospace challenges and contributes to the competitiveness of the aerospace industry. It masters all of the disciplines and technologies in this field. All major civil and military aerospace programs in France and Europe include some of ONERA's DNA: Ariane, Airbus, Falcon, Rafale, missiles, helicopters, engines, radars, etc.

The DAAA (Aerodynamics, Aeroelasticity, Acoustics department) prepare technological responses for the benefit of industry to improve the Aerodynamics, Aeroelasticity and Acoustics performance of aircrafts, and address issues of competitiveness as well as societal, environmental and defense needs.

You will work within the Experimentation and Flight Limit (ELV) unit which develops experimental research activities mainly structured around the physics of flows (characterisation and control, metrological development …), the aerodynamics of vehicles and the study of vehicle dynamic behaviour at the limits of its flight envelope. The research unit operates a large range of experimental facilities (8 wind tunnels, 2 hydrodynamics facilities, multiple dedicated laboratories and test benches such as drones and helicopters), and can also rely on numerical simulation. The ELV unit is also part of the Laboratory of Fluid Mechanics of Lille – Kampé de Fériet (LMFL – UMR 9014), which gather the local major players in the field of fluid mechanics around 3 scientific themes (turbulent flows, rotating flows and flight dynamics).

You will be in charge of studies in the domain of flight dynamics. You will perform aerodynamic characterisation and dynamic modelling of aircraft (fixed wing military and civil aircrafts, multi-rotors drones, lighter than air vehicles) and submarines. You will work on the prediction of the aircraft handling qualities and behaviour at the boundaries of the flight envelope, at low speed. This includes the study of aircraft behaviour near and beyond stall such as established spins, as well as the study of behaviour of aircrafts and drones within highly disturbed aerological environment (e.g. drone's response to a gust). Your work will rely on ground testing facilities and free flight capabilities available in the research unit. You will develop and implement advanced methodologies for the analysis of test results.

You will be encouraged to propose and contribute to ONERA internal research projects in order to improve the quality of the predictions of the aircraft dynamic behaviour close to the flight envelope boundaries. It includes the improvement of aerodynamic data quality (experimental and numerical data), and the development of new tools for the model representation and behaviour analysis (experimental and numerical synergy, machine learning, model refinement, account of uncertainties and non-linearity…).

FICHE DE POSTE

ONERA
THE FRENCH AEROSPACE LAB

You will be involved in the supervision of PhD thesis and post-doctoral positions, and will participate to internal projects and external collaborations (both national and European). You will be in charge of the valorisation of your work (journal articles, proceedings, patents…). In the short to medium term, and depending of your profile and results, you may take in charge the animation of the flight dynamic theme within the laboratory and department.

You will work in close collaboration with the aerodynamic specialists of the other research units of the department (Paris area), and with other specialists (control system, preliminary design…) within the other departments of ONERA. You will also collaborate with national and international laboratories/university and industrial partners.

PROFILE

You are an engineer with preferably a PhD degree with an extensive knowledge in aeronautical sciences including flight dynamics. An experience in the field of aerodynamics or flight physics is mandatory. Experiences in multi-partners project management are appreciated.

Successful experience in numerical simulation, data analysis (AI and data assimilations) and system analysis are appreciated. You must be proficient in reading, writing and speaking English.

Please apply to the offer through the website www.onera.fr with the reference N° DAAA/ELV/CDI/000539

FICHE DE POSTE

ONERA

THE FRENCH AEROSPACE LAB