# *"Ingénieur d'Etudes" position*

# Corrosion of aeronautical structures

Aerospace manufacturers are working to optimize maintenance operations on aircraft and helicopters, and more generally to develop tools for predicting corrosion damage. In order to define the maintenance programs best suited to the actual condition of the aircraft, it is essential to have data not only on flight conditions, but also on the associated corrosion damage.

This is the subject of this position of "Ingénieur d'Etudes". The aim of the work will be to contribute to the determination of actual flight conditions and analyze their impact on the corrosion damage of the structures. It will also contribute to the development of accelerated tests representative of real exposure conditions, to better understand corrosion phenomena. The study will focus on aluminum alloy structures, in particular 2xxx series alloys.

In addition to the literature analysis, the work to be done can be described in two steps:

- step 1: analysis of data from environmental sensors and corrosion sensors (polarization resistance monitoring) on board helicopters;

- step 2: corrosion tests using a thin-film cell designed at Cirimat, with the aim of reproducing actual environmental conditions and in-service damage (kinetics).

***Candidate profile:*** Applicants must have a significant knowledge concerning material sciences and corrosion phenomena. They will have a strong affinity for experimental research and teamwork capacity.

***Complementary informations:***
Duration: 24 months
Deadline for application: 15/10/24. The position is to be filled for January 1st, 2025 (or sooner if possible, depending on administrative steps)
The work will be conducted at CIRIMAT/ENSIACET- INP Toulouse
Remuneration: 3101 € (gross) / month (adjustable after the first year)

***Contacts:***
Application files (CV + cover letter) must be sent to Christine Blanc – 05 34 32 34 07 – christine.blanc@toulouse-inp.fr **AND** Nicolas CAUSSE – 05 34 32 34 18 – nicolas.causse@toulouse-inp.fr