

MEDITERRANEE THERMAL ANALYSIS

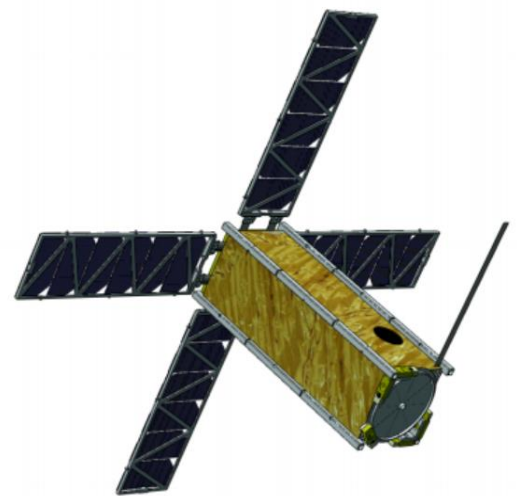
1. Background

The mission objective of ROBUSTA-3A Méditerranée is to demonstrate the ability of a 3U CubeSat based system to collect meteorological data onboard a ship located in the western Mediterranean Sea (between France, Spain, Italy and North Africa) and rapidly transfer this data to Météo France for storm forecasting.

The Cubesat is developed by Student as the Centre Spatial Universitaire the Montpellier. One important part of the satellite development is to perform the thermal design and analysis so it remains in an acceptable temperature range.

2. Internship Objectives

- Perform a small bibliographic research on the specific aspect of satellite thermal design. If needed, “get up to speed” on the physics of thermal transfer and lumped parameter calculations.
- Build a very simple model of the ROB3A Cubesat in a dedicated thermal software to get familiar with thermal analysis processes.
- Improve the model to be more representative. Verify that the model is correct by performing series of test cases.
- With the help of other people working on the project, define a realistic hot case and a cold case to be calculated.
- Based on the results, suggest the necessary modification to the CubeSat thermal design
- Follow the CubeSat development as the responsible person for thermal design (thermal budgets, processes, AIT sequence, ...)
- If necessary and if time/student level allow it, it might be possible to perform experiment in order to measure physical thermal parameters (conduction, dissipation, etc...) to be used in the next design steps.



Internship Condition

- The internship will be of 3 months minimum
- The internship will take place in Montpellier
- A report shall be written to document the work