



Thermal analysis of a 3U CubeSat during atmospheric re-entry

We are looking for two motivated Electromechanics master students.

Project description

The Aether Student CubeSat team brings together young Belgian engineers who are passionate about space technology. We are designing a CubeSat: a nano-satellite small enough to hold in your hand. In the past decade, the CubeSat standard has enabled countless new innovations in the space industry, and we are determined to uphold this tradition!

Aether is focusing on the area of re-entry: creating the technology that will allow future CubeSats to safely re-enter the atmosphere and land on Earth after carrying out their experiments in orbit. This will allow scientists to analyze samples and get even more results out of their experiments, and all this with the affordability and accessibility that come with the CubeSat platform!

Thesis description

The Master's thesis will focus on conducting a comprehensive thermal analysis of a 3U CubeSat with our heatshield during atmospheric re-entry. The analysis will involve calculating the heat flux and temperature distribution on the spacecraft's surface and internal components and identifying potential design improvements to mitigate thermal damage during re-entry.

Thesis objective

The objective of this Master's thesis is to figure out if the important components of the CubeSat can survive the re-entry. The analysis should include calculating the heat flux and temperature distribution on the spacecraft's surface and internal components, identifying potential design improvements to mitigate thermal damage during re-entry, and evaluating the effectiveness of thermal protection measures. The goal is to provide valuable insights into the thermal behaviour of CubeSats during atmospheric re-entry and contribute to the development of advanced CubeSats with enhanced survivability. All while being constraint to the 3U size of the CubeSat.

Profile

- Aerodynamics
- Structural analysis
- Experience with / interest in modelling and simulation

What do you gain?

- A unique engineering experience within an exciting space mission.
- Create added value for your CV and the team.
- A team of students willing to help in any way possible.
- Be part of the team that will revolutionize the CubeSat platform.
- Connection to a wide network of aerospace companies

If you are interested? Please contact us at recruitment@aetherspace.be .

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