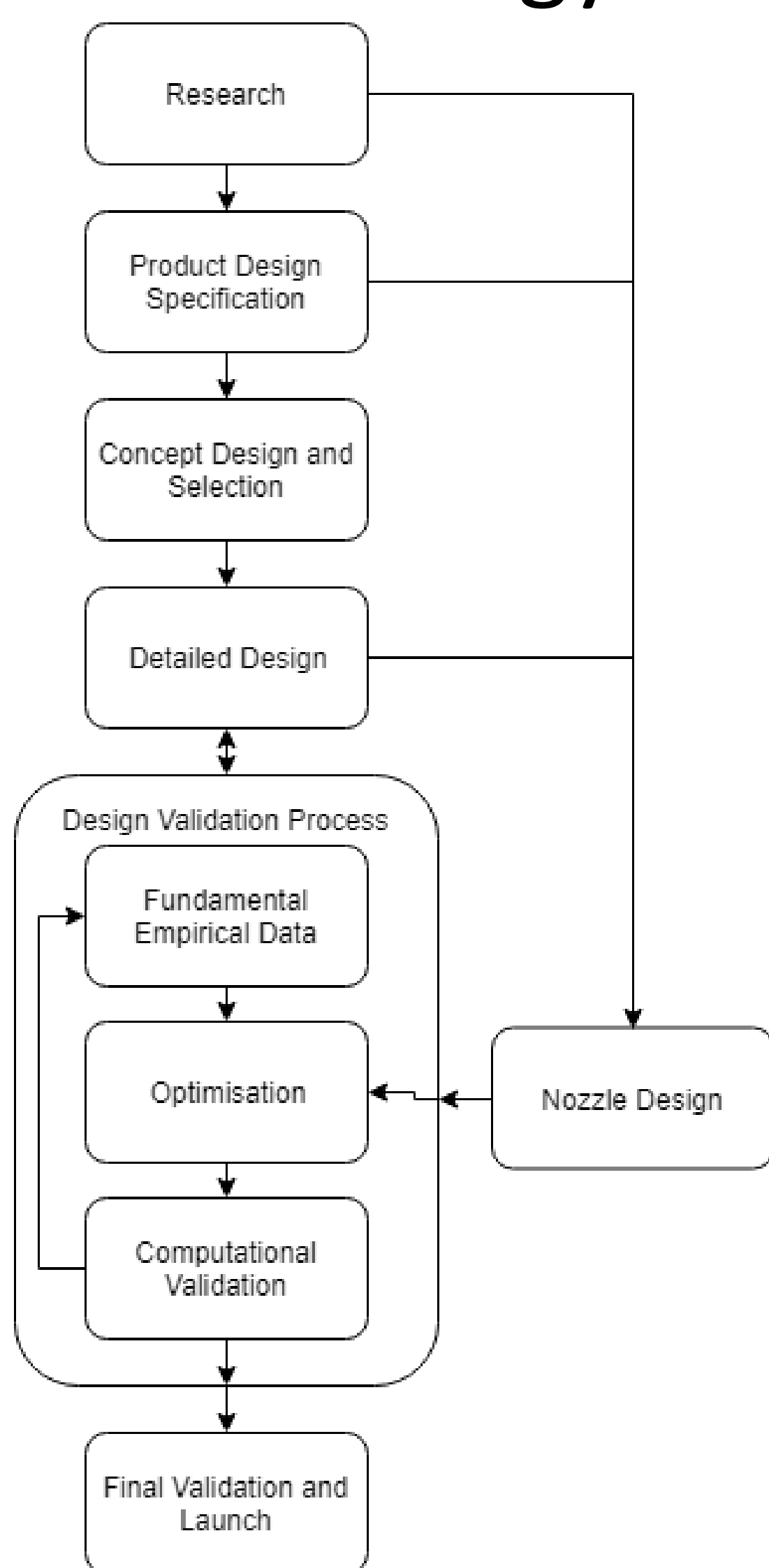


# Design of a Competition Capable Hobby Rocket

## Overview:

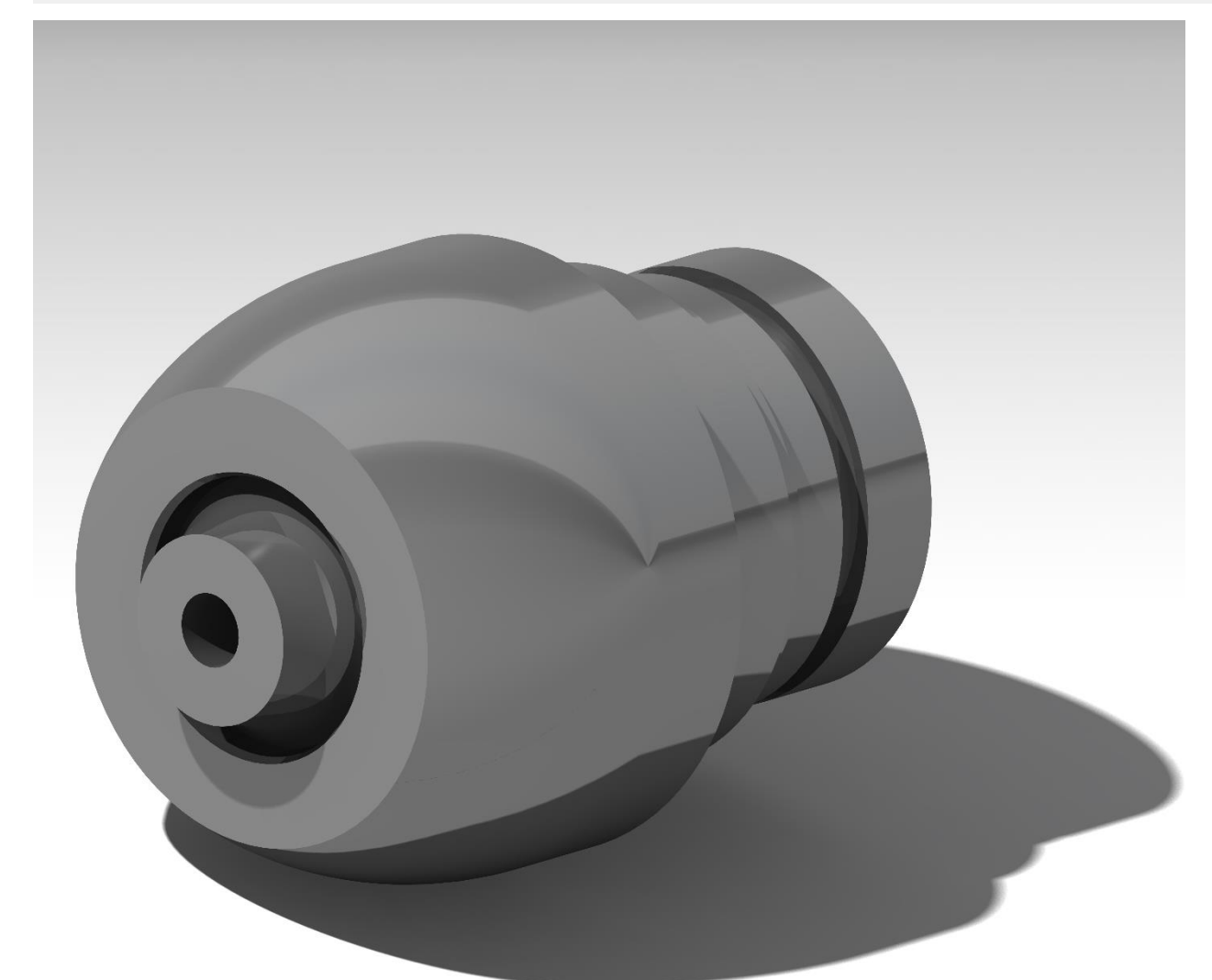
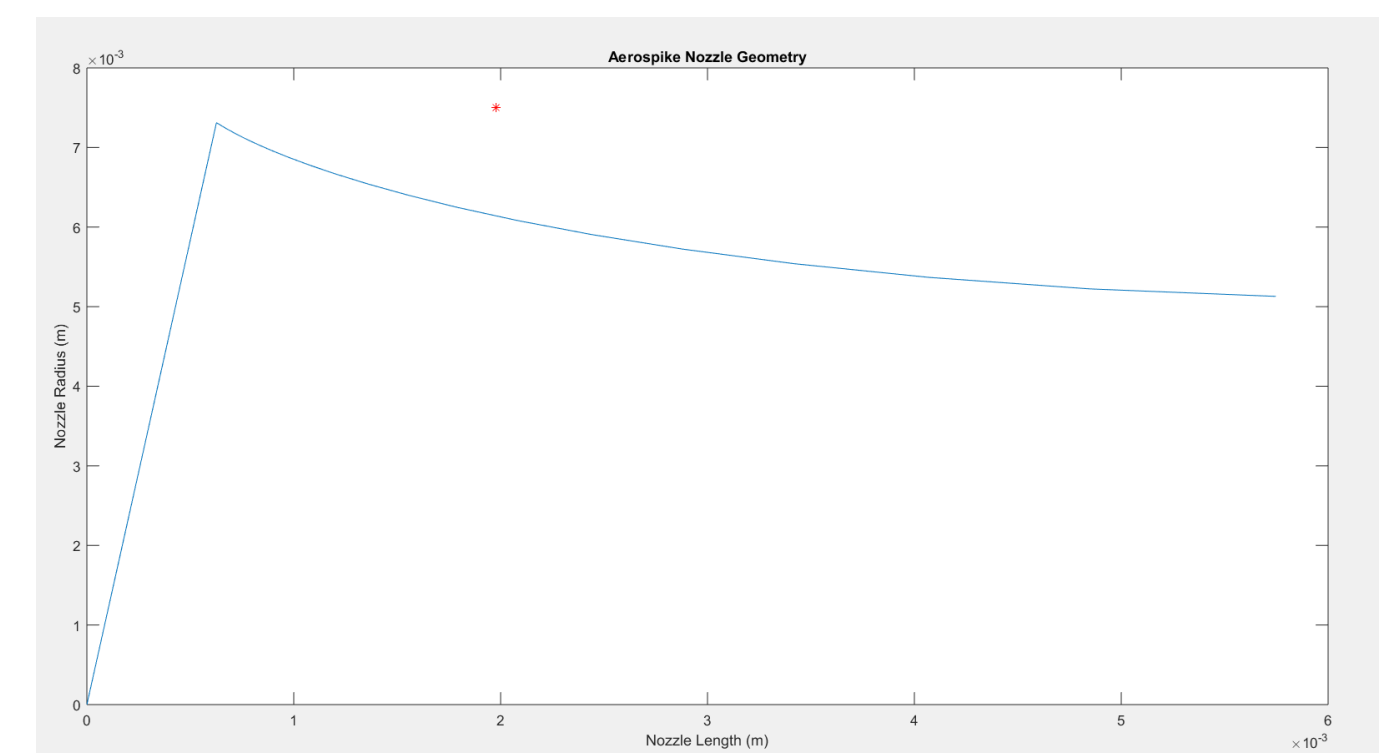
Rocket Performance is key aspect of the Astronautical Sector  
This project aims to demonstrate the performance benefits of multi-physics optimisation

## Methodology



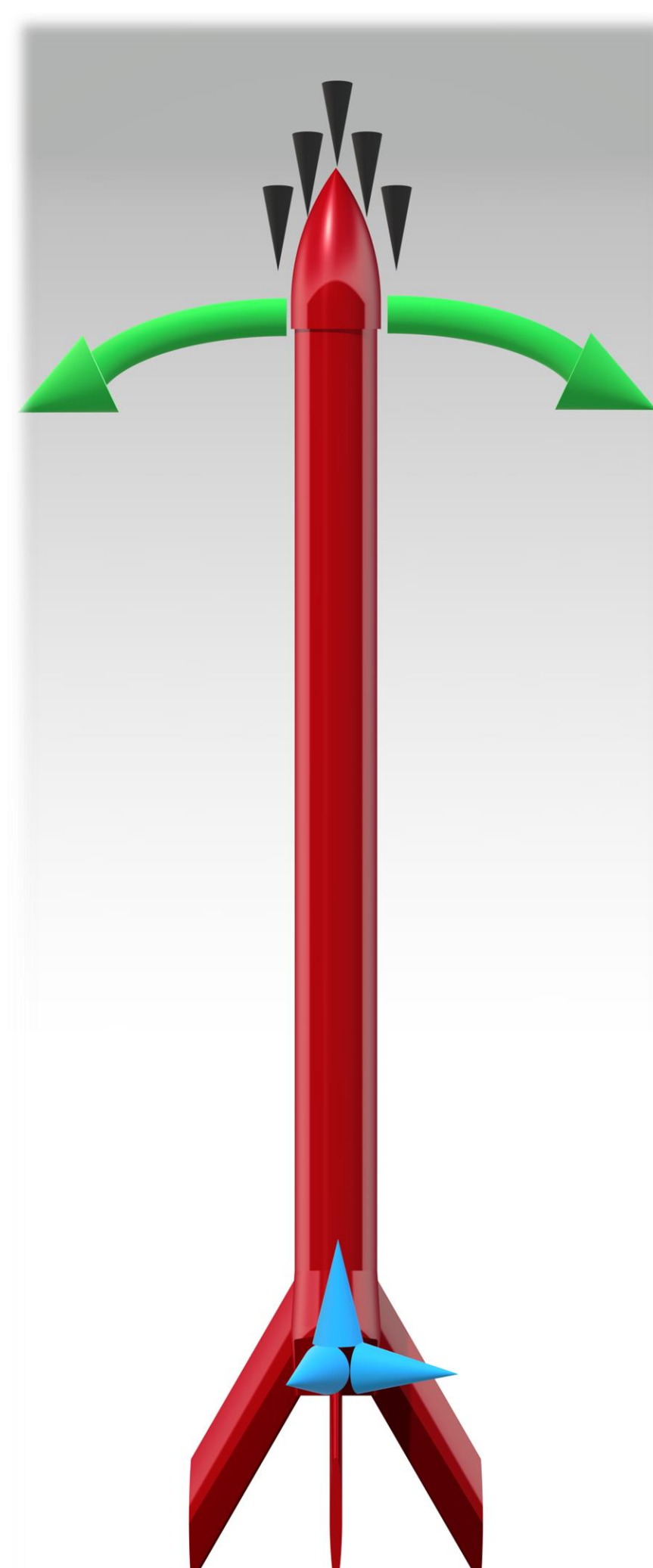
## Aerospike Nozzle:

An aerospike nozzle was designed using Prantl-Meyer expansion theory and calculated using an iterative Matlab solver



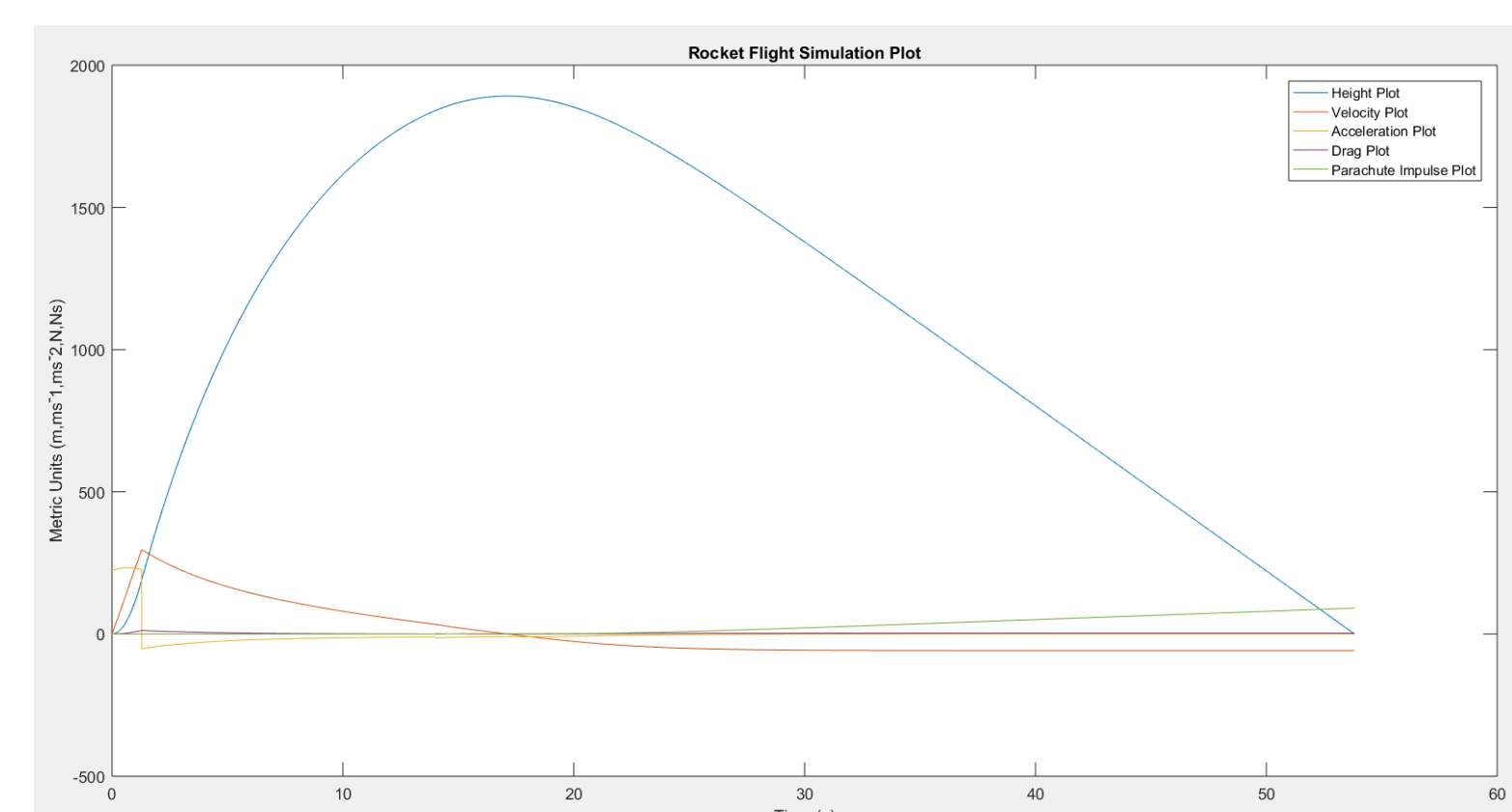
## Structure

Structural integrity was maintained with aerodynamic data, buckling equations and compression testing



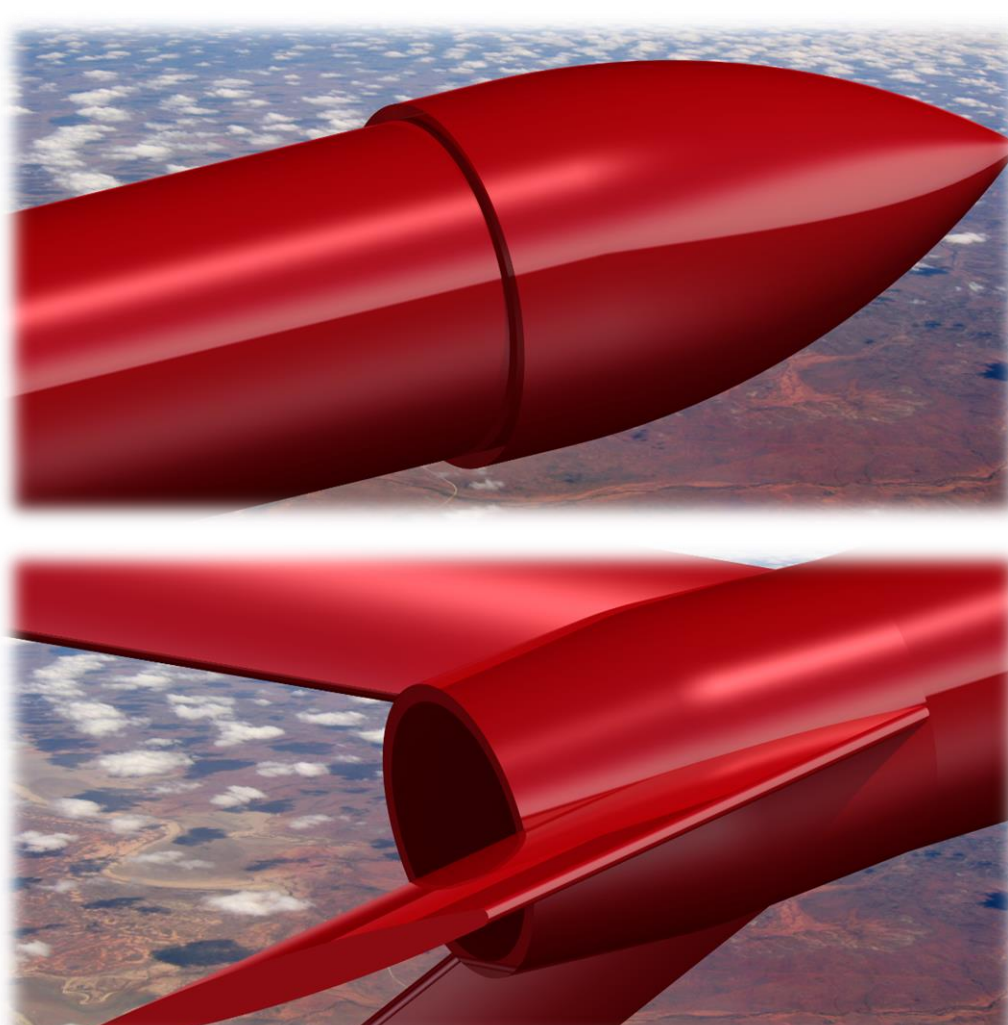
## Simulation:

A Matlab Code was written in order to simulate the flight using data from the wind tunnel



## Aerodynamics

Aerodynamics were optimised using iterative fuselage changes, CFD simulations and Wind-Tunnel Tests



## Launch:

The rocket reached an altitude of 505 m on a F impulse motor

