

Project proposal

Title: Rover wheels design
 Supervisor: ...
 Timeframe: Fall 2020

EPFL Xplore is an interdisciplinary project which aim is to design and develop a Rover to participate in two international competitions: The University Rover Challenge and the European Rover Challenge. During 2 of the 4 main tasks it has to achieve, the Rover has to navigate through sandy/rocky terrains. Therefore, reliable wheels have to be designed in order to allow the Rover to reach its destination.

Project description

Problematic

There are 2 navigation tasks for the Rover: one where it has to navigate autonomously from one point to another, and the other where it has to collect a cache at point A and delivery it to point B. For both tasks, the Rover has to overcome sloppy terrains made of sand and rocks. Hence, appropriate wheels need to be designed in order to ensure that the Rover can overcome any type of terrain. Material and geometry have to be chosen, and the wheels will be designed using a CAD software. Moreover, simulations will need to be run. The student will work closely with the EPFL Xplore team to ensure that the designed product will satisfy the requirements and that no element at the interfaces is omitted.



Figure 1: <https://www.planetary.org/multimedia/space-images/spacecraft/diagram-of-a-curiosity-wheel.html>

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