Project proposal

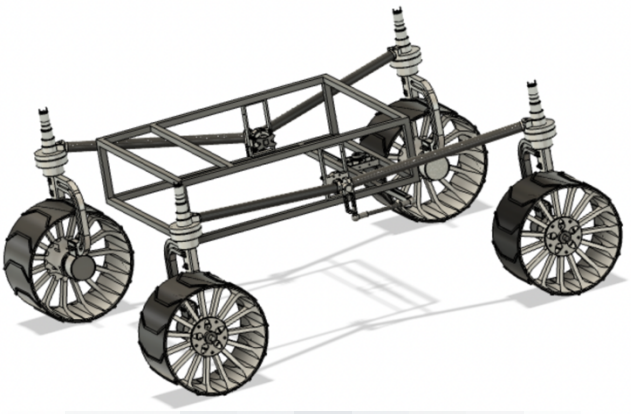
Title:	Design of a 4-wheels suspension system
Supervisor:	…
Timeframe:	Spring 2022

EPFL Xplore is an interdisciplinary project which aim is to design and develop a Rover to participate in international competitions, namely The University Rover Challenge and the European Rover Challenge. As a rolling machines, rovers rely on 4 to 6 wheels to navigate through all types of terrain. Therefore, given their unevenness, rovers rely on suspension systems to maintain contact with the ground.

Project description

The purpose of this project is to design the suspension system of our future rover. The student will therefore need to do some research on the current trends and innovative designs regarding 4-wheels systems.

Based on this research, he/she will find a way to design a cost-efficient suspension system that complies with requirements to be discussed with Xplore's Systems Engineers at the beginning of the project.



A validation of the design by means of simulations (static and dynamic FEA) is expected. Fast prototyping by means of 3D printing is also highly recommended to test the designs.

Further, the student will be part of the Xplore structure team to facilitate communication and information sharing regarding past and current designs.

Requirements

- Prior knowledge of Fusion360 and advanced CAD skills
- Basics in FEA Analysis (static and dynamic)

Contact

quentin.delfosse@epfl.ch