

<http://desl-pwrs.epfl.ch>

Student project proposal

Project title

Design, build and test of Linear Induction Motor (LIM) for the EPFL Infrastructure and of a test bench.

Project type MSc thesis BA semester project MSc semester project

Project responsible and e-mail

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Project description

The goal of this project is to go through the process of building a Linear Induction Motor (LIM) to be used in the EPFL infrastructure. A design has been proposed last semester, after understanding that design and eventually proposing updates, the project will quickly move to building the LIM (core design and build, winding layout and build).

In parallel a test bench for the testing of the propulsion of the Hyperloop has to be developed. This bench will allow independent tests on the propulsion (LIM + PE + BESS).

Finally, if a pod is ready at the end of the semester, the LIM could be tested on the pod.

PE = Power Electronics

BESS = Battery Energy Storage System

Tasks of the student

- Use COMSOL
- Understand core design, winding layout and build
- Design mechanical parts

Requirements

- Be motivated in learning techniques that are not necessarily thought during regular courses
- Willing to join a research environment
- Be independent and able to learn new skillsets
- Be able to participate with other members of the research team working on the project.
- Having a knowledge in design of mechanical part is a plus.