Master Thesis spring/autumn 2022 Simulation of Non road Electromobility

Company presentation:

Epiroc is a leading productivity partner for the mining, infrastructure and natural resources industries. With cutting-edge technology, Epiroc develops and produces innovative drill rigs, rock excavation and construction equipment, and provides world-class service and consumables.

Epiroc Rock Drills AB in Örebro with over 2500 employees both develop, manufacture and market Rock drilling equipment for mining and construction work all over the world. As a thesis student you will have the opportunity to work in an open and friendly environment, where we are committed to always find new innovative solutions through collaboration both within the team and externally. Join our journey towards developing future technology within electrification and automation.

Vision: Simulation of off-road Electromobility strengthens functional development to speed up time to market and cost of testing.

Mission: The mission is to create a model of complete system for Electromobility on a mine drill rig based on the current system, components but also for future improvements. It will include to analyse different topologies of electric powertrain, robustness, hydraulic actuators and other power consumers that creates the machine purpose and value for the customer.

The area is simulation and design of electric powertrain for Epiroc mining equipment.

- Complete simulation model of our electric driveline with a possibility of choosing, different topologies.
- Analyse the impact on tractive effort while using single / multiple electric motors.
- Include possibility for optimizing the model for different sizes of drill rigs by varying the Vehicle, Gearbox, Electric motor as well as Battery parameters.
- Analyse overall energy efficiency and performance in a simulated drive cycle for different configurations.

Details and specific questions to work on will be discussed after non-disclosure agreement is in place.

Functional area: R&D Electric powertrain
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Education background:
Mechanical Engineering, Electrical Engineering, Power Electronics, Hydraulic Engineering or Mechatronics.

Level of thesis project:
Master Thesis.

Number of students in the project: 1 or 2 students/ project.

How to apply:
Does this sound interesting, and do you feel this is a match? Log in to the recruitment system. If you are new to the system, you need to start by making a profile. Do not forget to attach your CV and a short letter about your-self, describing why you are applying for this thesis. Please note that we do not accept applications via email. Send your application as soon as possible.