
Bachelor / Masters thesis

Development of a test bench for ski mountaineering boots

SCOTT Sports is a leader in the development, manufacturing, sales and marketing of high-end performance products intended for biking, wintersports, motorports and running. Innovation, technology and design are the essence of SCOTT products and the vision of our engineers and designers.

Background information

The combination of ascent and descent skiing in ski mountaineering leads to special requirements for ski boots. During uphill the boot should be as light and comfortable as possible, while for downhill it should give maximum support and force transmission from legs to the ski. To allow walking and skiing, the ski boots are equipped with a mechanism, which can be unlocked for uphill to guarantee a comfortable and efficient walking and locked in downhill to make the ski boot stiff enough for skiing. When designing a ski boot, engineers need to take in consideration those details and make sure, that all the product components withstand the loads acting on the boots during use. Measuring the forces during skiing is a very complex topic and therefore, the current possibilities for simulating and testing the load cases during the development phase and analysing the induced strains and stresses in the materials are limited.

Goal of the project

The aim of the project is to develop a test bench for simulating the kinematics and mechanical loads on the ski boot during ski mountaineering. In a first phase, those parameters need to be identified through literature research and existing field data analysis. Based on the definition of the load cases, a test method, considering an actuation and measurement system, needs to be developed and realized within a fully functional test bench.



SCOTT Freequide Carbon

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