

CERN internship

Evaluation report

The past few months starting from May 2021, I have been doing my internship for the applied physics master's program at the **Central Cryogenics Laboratory of CERN**. This internship I did under the supervision of **Rob van Weelderen, Patricia Borges de Sousa and Torsten Koettig** from CERN. And **Chris Kleijn** from the TU Delft.

CERN stands for the European Organization for Nuclear Research. Found at the Swiss city Geneva, It is the biggest particle physics laboratory in the world and hosts approximately 17600 members of personnel and more than 4500 contractors. CERN has had some major scientific achievements since its beginning.

The initiation of the World Wide Web and the discovery of the Higgs boson are some of these achievements. CERN consists of a large complex of particle accelerators, where the Large Hadron Collider (LHC) takes the cake. The LHC is currently the most powerful particle accelerator in the world.

What makes CERN interesting for students is that they have a lot of different programs available for us. From summer school programs to technical studentships (which I did) to PhD programs. And the project you work on can differ vastly from other students working at CERN. You could possibly work at the ATLAS or CMS experiment which are the particle detectors of the LHC. Or you could possibly work at the anti-matter factory. There is a lot to choose from as a physics student. But I have to say unfortunately that is not that easy to stay here permanently. To become a staff member of CERN you have to have a lot of experience and even if you get accepted, it is still not sure if you will stay there permanently.

As I said before, I worked at the Central Cryogenics Laboratory. In this laboratory I worked on the thermal assessment of the new superconducting magnets that are going to be used for the LHC. My internship consisted of learning how cryogenics works, running an experiment at cryogenic conditions and analyzing the data of the measurements.

This internship was both exciting and valuable. Valuable since I learned a lot about a field of physics I didn't know much about before. And also valuable in the sense that I really got a change of mindset by doing physics at such a laboratory. I really got a feeling of responsibility for the work I did, since the results I deliver affects the course of ongoing and future projects. The whole experience will make you grow more professionally. It was also exciting since you get to discover and get to know all the stuff going around at CERN. You can get to visit the different experiments and learn a lot about the projects. If you have a curiosity for science you will surely enjoy your time. But it is also exciting since you really get to be part of a team. You are not just a student doing some work, but get to actually contribute to the projects you work in.

To apply for an internship you can visit the career page of CERN's website. You can apply by sending your CV, field of interest, motivation letter and a recommendation letter of the university. During your stay you get a monthly allowance of approximately 3000 francs. With this allowance you have to basically take care of all your needs. Since CERN is placed at the French-Swiss border, you can choose to either stay at France or Switzerland. Most students stay at a French village since it is usually a lot cheaper to live on the French side. Depending on where you live it can take from 5 to 30 minutes with the bicycle to get to work. Aside the internship, there is a lot to discover in the area. Geneva is surrounded by mountains, so there is a lot of hiking you could do. But also a lot of beautiful places in Switzerland and France are at most a few hours' drive with the car. Or you could enjoy yourself in Geneva itself. I hope this all excited you to do an internship at CERN, and wish you all the best. **Enes Ilbuga**