

M.Sc. Thesis at CERN (DC Grid for FCC)

The **Electric Power Converter Group** of CERN is in charge of the design, development, procurement, construction, installation, operation and maintenance of electric power converters for the particle accelerators at CERN.

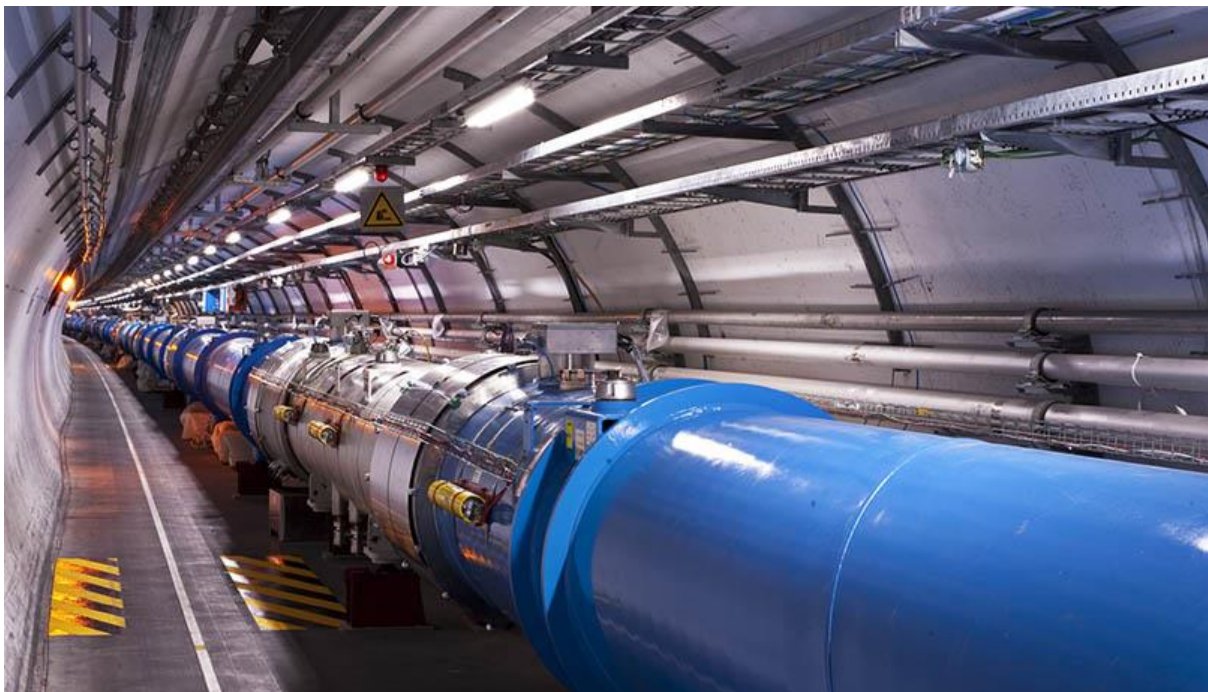
We are currently looking for a M.Sc. student to work on his M.Sc. thesis in the field of electric power conversion. During his thesis, the student will work at CERN in Geneva as a member of our power quality team.

CERN is currently working on a feasibility study for the next generation particle accelerator, the Future Circular Collider (FCC). The FCC concept is based on superconducting magnets, to be installed in a tunnel having a circumference of 80-100 km. The construction of the FCC has a time horizon around 2035.

The subject for this M.Sc. thesis is to study the feasibility to supply the FCC with a dedicated DC network, possibly combined with large DC energy storage systems. Such DC network would potentially offer advantages in terms of Power Quality, elimination of reactive power as well as medium-distance transmission of high power flows.

- *Do you want to participate in the conceptual design studies for the next-generation particle accelerator FCC?*
- *Are you passionate about power converters and power quality?*
- *Do you have basic experience simulating power converters in Matlab/Simulink?*

Are you ready for this challenge?



The tunnel of the largest particle accelerator in the world, the Large Hadron Collider LHC (27 km)