written by Rozgonyi Áron class 10. D

CERN

When I was young, I hated physics. Now I want to be a cool theoretical physicist in CERN. Even if I have never been at CERN (but I would like to go there), my dream is that CERN will be my workplace.

Lots of famous physicists work there. I would like to meet and work with them later. I want to change the world and physics with them.

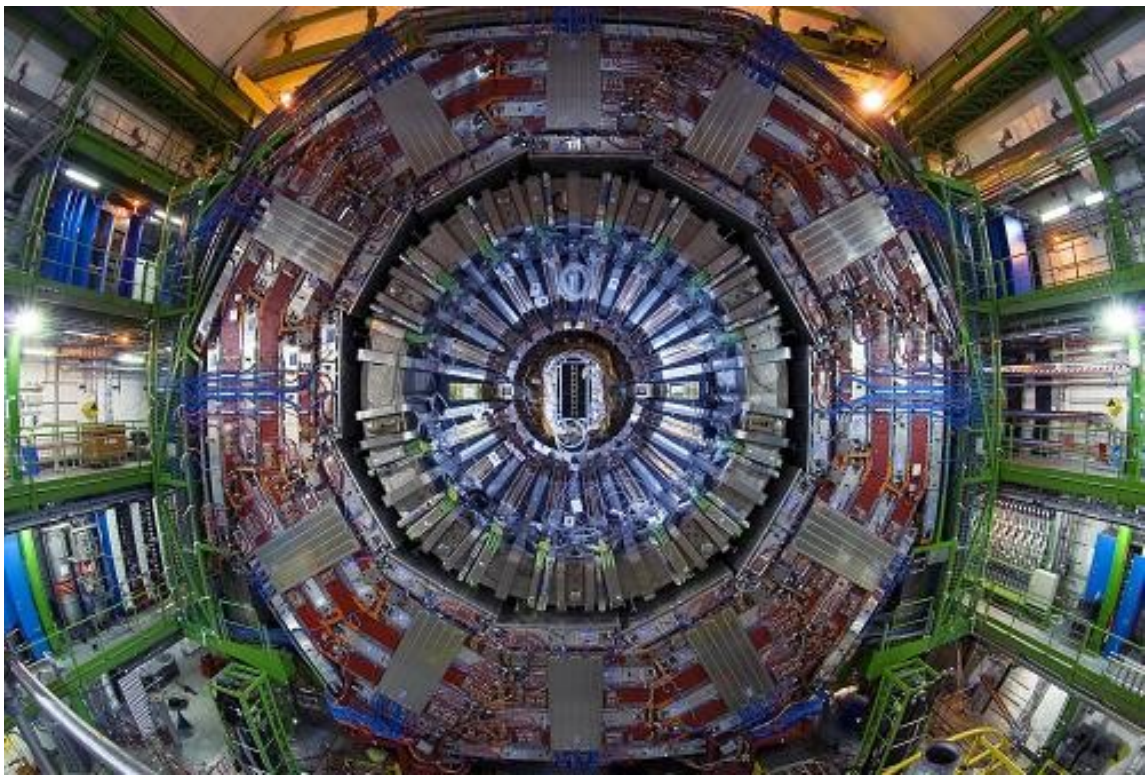
The European Organization for Nuclear Research (CERN) is the European particle physics research organization.

This is the largest particle physics laboratory in the world, and this is the birthplace of the Large Hadron Collider (LHC) and the World Wide Web. It is located a bit north of Geneva. Established in 1954, the organization has twenty European member states.

The main function of CERN is to provide the particle accelerators and other infrastructure needed for high-energy physics research. Numerous experiments have been constructed at CERN by international collaborations to make use of them.

It employs more than 2400 full-time employees/workers, as well as 7931 scientists and engineers representing 608 universities and research facilities and 113 nationalities. As for me I would like to work there too.

The Large Hadron Collider (LHC) is a gigantic scientific instrument near Geneva, where it spans on the border between Switzerland and France about 100m underground. It is a particle accelerator used by physicists to study the smallest known particles – the fundamental building blocks of all things. It will revolutionise our understanding, about the atoms in the Universe and the smaller parts within atoms.



Two beams of subatomic particles called "hadrons" – either protons or lead ions – travel in opposite directions inside the circular accelerator, gaining energy with every lap. Physicists use the LHC to recreate the conditions just after the Big Bang, by colliding the two beams head-on at very high energy. Teams of physicists from around the world analyse the particles created in the collisions using special detectors in a number of experiments dedicated to the LHC.

There are many theories as to what will result from these collisions. For decades, the Standard Model of particle physics has served physicists such as means of understanding the fundamental laws of Nature, but it does not tell the whole story. Only experimental data

using the high energies reached by the LHC can push knowledge forward, challenging those who seek confirmation of established knowledge, and those who dare to dream beyond the paradigm.

I think the most interesting particle is the Higgs-boson. It is a very difficult, but exciting topic because we don’t know a lot about it It is also called ”god particle”.

The Higgs field is a theoretical, invisible energy field that stretches throughout the universe. It clings to fundamental particles wherever they are, dragging on them and making them heavy. Some particles find the field more "sticky" than others. Particles of light – photons – are oblivious to it, because they don't have mass. Other particles have to wade through it. So, in theory, particles can weigh nothing, but as soon as the field switched on shortly after the big bang, they got their mass.

According to Higgs mechanism the whole world is filled with a so-called Higgs field and the mass of particles is the result of the interaction between Higgs field and the particles.

We are close to the truth. I hope that I will be able to examine this particle.