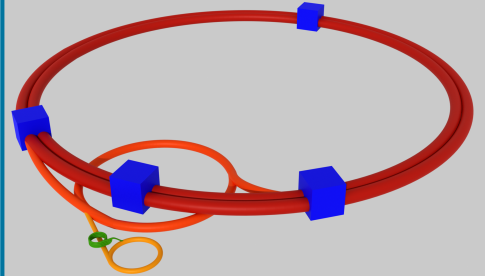


Mechanical model of the Large Hadron Collider

INTRODUCTION

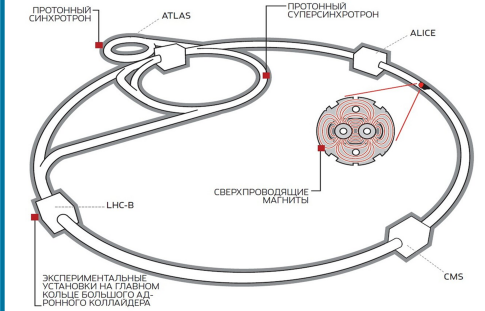
Today, a smaller percentage of people associate their future with science. The reserve that was created in the period from 1950 to 1980 is almost exhausted. The main purpose of launching the Large Hadron Collider is to open new horizons of science and technology.



But, unfortunately, not everyone knows or is interested in this field of science considering it very difficult and useless. The purpose of my project is to reveal the topic of particle interaction and their scientific potential.

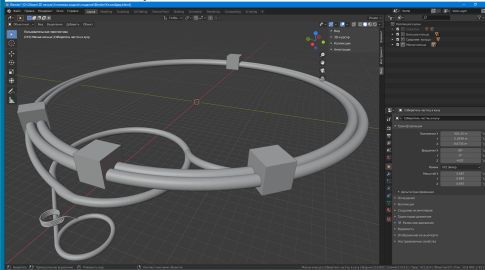
LARGE HADRON COLLIDER (LHC)

The LHC is a charged particle accelerator designed to disperse particles and study the products of their collisions.

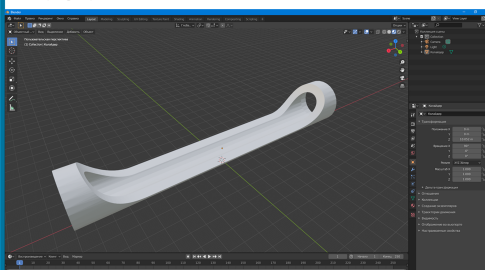


3D MODELING

During the work on the project, a LHC model was modeled in the blender 3D editor, which formed the basis of the mechanical model. And also parts of the mechanical model were drawn and printed.



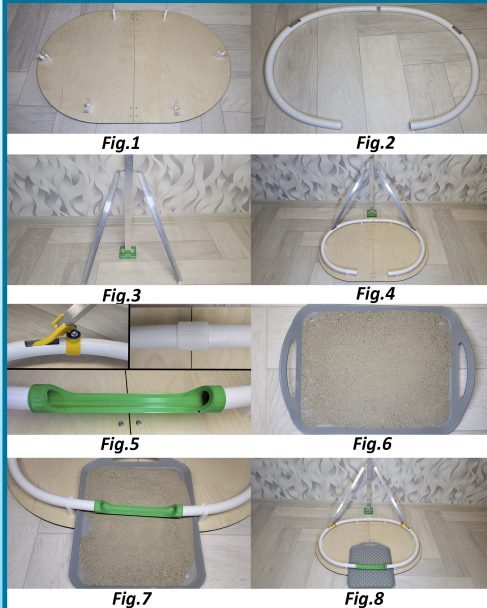
(Fig.1) MODEL OF THE LARGE HADRON COLLIDER



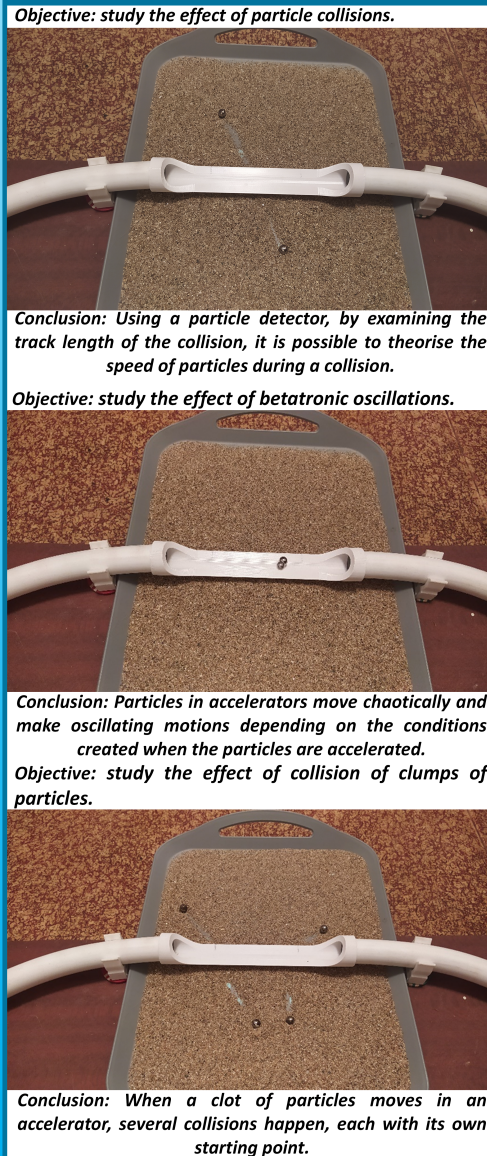
(Fig.2) THE OPEN SECTION OF THE ACCELERATOR

blender - this is a professional free and open source software for creating three-dimensional computer graphics.

BUILDING A PROTOTYPE



RESEARCHES



Objective: study the effect of particle collisions.

Conclusion: Using a particle detector, by examining the track length of the collision, it is possible to theorise the speed of particles during a collision.

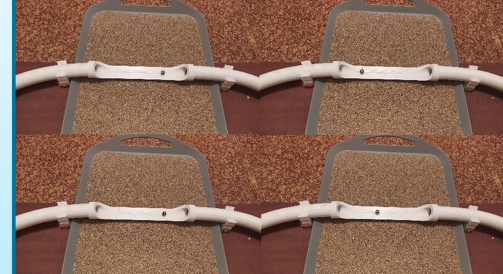
Objective: study the effect of betatronic oscillations.

Conclusion: Particles in accelerators move chaotically and make oscillating motions depending on the conditions created when the particles are accelerated.

Objective: study the effect of collision of clumps of particles.

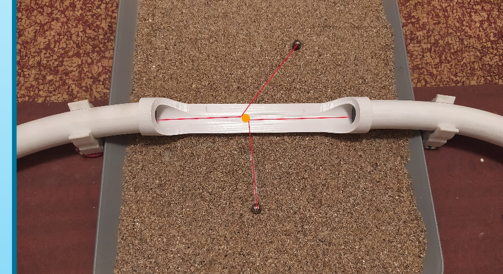
Conclusion: When a clot of particles moves in an accelerator, several collisions happen, each with its own starting point.

Objective: study the effect of particle injection.



Conclusion: Particles lose energy as they move through the ring and slow down accordingly.

Objective: study the effect of angular particle distribution.



Conclusion: Using a particle detector and examining the collision track length it is possible to calculate theoretically the velocity of particles during collision.

Objective: study the effect of angular particle distribution.



Conclusion: When a clot of particles moves in the accelerator, the clot disperses and the individual particles.

CONCLUSION

During the work on the project, a mechanical model of the Large Hadron Collider was made. Using this model, you can study the principle of operation and purpose of the LHC, as well as visually demonstrate the interaction of particles.



ACKNOWLEDGEMENTS

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