

Particle Physics at LHC

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Particle physics is the most fundamental of physics disciplines, which seeks answers to the most fundamental of questions about the nature of our Universe.

The working theory describing particle physics is the Standard Model (SM), the most successful theory in science to date.

Despite its success, we know that it is incomplete and thus strive to find holes in the theory, which could provide answers to the unknowns of our Universe, such as the origin and nature of the dark matter and the reasons behind the matter/anti-matter asymmetry.

At the Large Hadron Collider (LHC), high-energy proton (and lead ion) beams are collided in order to recreate the conditions of the early Universe and investigate the phenomena that might give us clues about the true nature of the cosmos we inhabit.

In order to perform these investigations, four major experiments are situated on the LHC ring - ATLAS, ALICE, CMS and LHCb.

Latvia is a member of the CMS collaboration.