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Norbert Novitzky

Recent Highlights from ALICE

Abstract

The main purpose of ultra-relativistic heavy ion collisions is to study the physics of strongly interacting matter at the highest energy densities reached so far in the laboratory. In such conditions, an extreme phase of matter, the quark-gluon plasma, is formed. The ALICE detector at LHC was optimized to study the different signatures of the created plasma and to understand its properties. For this purpose, we are carrying out a comprehensive study of the hadrons, electrons, muons, and photons produced in the collisions of heavy nuclei. ALICE is also studying proton-proton and proton-nucleus collisions both as a comparison with nucleus-nucleus collisions and in their own right. ALICE completed a significant upgrade of its detectors to further enhance its capabilities and continue its scientific journey at the LHC until the end of 2032. The talk will summarize the recent highlights from the previous runs as well as the first results from the just finished runs after the upgrades were implemented.