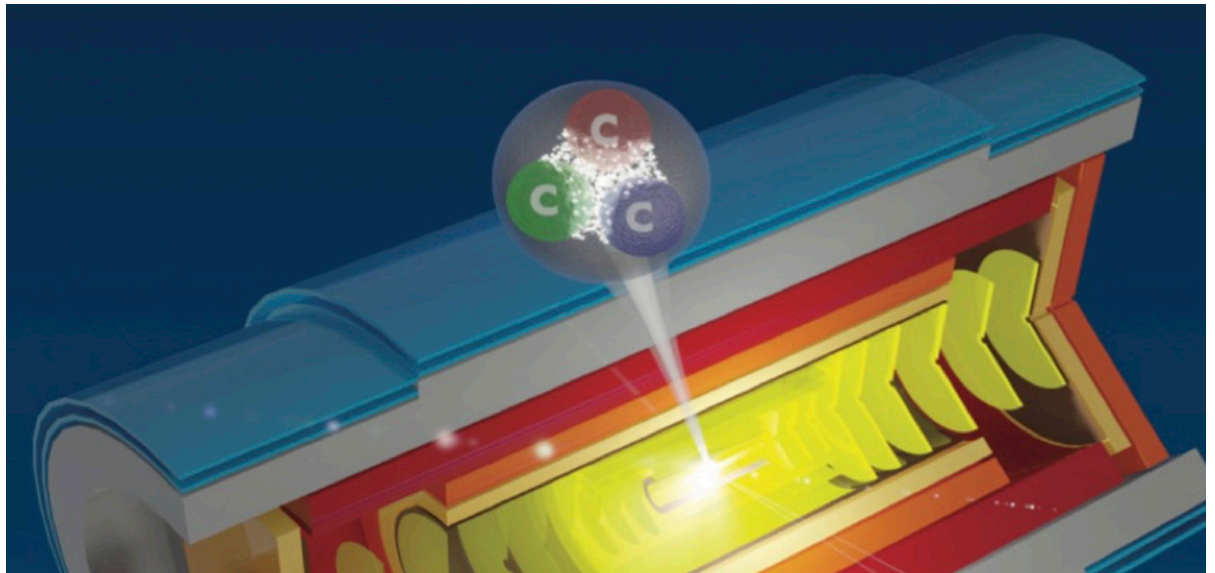




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April 20, 2023 at 1:00 pm in WL-216

ALICE 3 - A new horizon for QCD



The ALICE experiment was built to study many-body Quantum Chromo-Dynamics (QCD) at high temperature and effectively zero baryon density, using relativistic heavy-ion collisions at the Large Hadron Collider (LHC). These collisions form the Quark Gluon Plasma (QGP), a state of matter where quarks and gluons are no longer confined inside hadrons. The ALICE physics program centers around the key questions related to QGP phenomena. These include the macroscopic and microscopic properties of the QGP, and the details of the QGP phase transition to hadrons, that is believed to have taken place in the early Universe. At the same time, ALICE's versatile setup allows for the study of pp collisions, p--Pb collisions, and ultra-peripheral collisions. The associated studies serve as deep probes of cold nuclear matter, and allow for investigations of stellar and interstellar phenomena. The ALICE Collaboration plans a major upgrade of its detector, referred to as ALICE 3. ALICE 3 is proposed for physics data-taking in the LHC Run 5 (starting 2035) and beyond. I will discuss the proposed physics program, detector concept, and expected physics performance.