Exploring the QCD Plasma at the Large Hadron Collider

The Standard Model of particle physics describes the fundamental constituents of matter, leptons and quarks. The interactions amongst quarks are described by Quantum Chromodynamics (QCD), which is the theory of strong interactions, an integral part of the Standard Model. Under extreme conditions of temperature and/or energy density, normal hadronic matter goes through a phase transition to the QCD matter, consisting of de-confined quark-gluon plasma (QGP). The formation of QGP and the nature of the phase transition have been explored at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory and the Large Hadron Collider (LHC) at CERN, by colliding heavy-ions at ultra-relativistic energies. The results obtained by three years of data taking by the ALICE and other experiments at the LHC will be summarized. A brief outlook will be given on the future plans.