



Contribution ID: 8

Type: Oral

Investigating Magnetic Field Dynamics in the Quark-Gluon Plasma

Relativistic heavy-ion collisions at the Large Hadron Collider (LHC) produce a deconfined quark-gluon plasma (QGP) under extreme temperatures, energy densities, and electromagnetic fields. Understanding the influence of these fields on the evolution of the QGP remains an important challenge in heavy-ion physics. This work presents a theoretical and computational model based on the relativistic conservation laws of energy, momentum, and baryon number to describe the space-time evolution of the QGP produced in Pb+Pb collisions at a nucleon-nucleon centre-of-mass energy of 5.02 TeV. The model establishes investigations of magnetic-field dynamics through relativistic magnetohydrodynamics, providing a platform for studying the interplay between the QGP evolution and electromagnetic fields in Heavy-Ion Collisions.

Primary author: SEABI, Magdeline (Nelson Mandela University)

Co-author: MURONGA, Azwinndini (Nelson Mandela University)

Presenter: SEABI, Magdeline (Nelson Mandela University)

Session Classification: Parallel - HI

Track Classification: Heavy Ions and Nuclear