Physics Colloquium

Deepa Thomas

"Heavy-Flavour in Heavy-Ion Collisions"

In ultra-relativistic nuclear collisions, performed at the Relativistic Heavy Ion Collider (RHIC) at BNL and at the Large Hadron Collider (LHC) at CERN, a high density and strongly interacting matter, called Quark Gluon Plasma (QGP) is expected to be produced. QGP is a deconfined state, which is predicted to have existed few microseconds after the Big Bang, in which quarks and gluons are not bound together in hadrons. It is analogous to the electromagnetic plasma, where ions and electrons are disassociated. In relativistic heavy-ion experiments several probes are used to investigate the properties of the QGP, and heavy-quarks (charm and beauty) form a unique and powerful one. They have large masses and are produced in the early stages of the collision before the formation of the QGP. As heavy quarks travel through the medium, they interact with the constituents of the medium and scan the entire lifetime of the QGP, i.e., from the beginning to the end of the QGP formation. In this talk I will present an overview of the latest results of heavy flavour measurements, and conclude with an outlook to the field with new upgrades of the current experiments at the LHC and the new experiment, sPHENIX, at RHIC.

Deepa Thomas *is a postdoctoral fellow at the University of Texas at Austin working in the ALICE experiment at the LHC. She received her Ph.D in 2014 from Utrecht University, The Netherlands. Her main research focus is studying the properties of Quark Gluon Plasma using heavy quarks as probes. At UT Austin she is leading the group's heavy-flavour effort at the LHC. As an expert of heavy-flavour measurement in heavy-ion collisions, she is a convener of the heavy-flavour decay electron physics working group at ALICE. She also coordinates all analyses that use ALICE Electromagnetic Calorimeter for electron identification. Her group at UT Austin is also involved in the development of the Pixel-Sensor based Vertex detector for the future sPHENIX experiment at RHIC.*

Physics Faculty and Search Committee Candidate

Thursday, February 14th in LL 316 at 4:10

Refreshments available at 3:45