

Searching for and understanding the quark-gluon plasma in heavy-ion collisions

Tuesday, 23 July 2019 12:30 (1h 15m)

Lattice-QCD predicts the occurrence of a phase transition above a critical temperature from ordinary nuclear matter to a new state of matter, usually referred to as the quark-gluon plasma (QGP), in which partons are relevant degrees of freedom. One primary goal of the heavy-ion physics is to create and study the properties of the QGP created in these collisions. The last couple of decades have seen tremendous progresses in understanding the QGP, thanks to the successful operation of dedicated experiments at the RHIC and the LHC. In this lecture, I will discuss the detectors designed for heavy-ion physics, and how an experimentalist turns electronic signal into physics results. Future direction of heavy-ion experiments will also be discussed.

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