KMI Colloquium

Strong-field physics in high-energy heavy-ion collisions



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Abstract:

Understanding the early stages of the heavy-ion collision events, in particular, the mechanism how quark-gluon plasmas are formed after the collision is one of the most important and challenging problems in modern theoretical physics. Since the quark-gluon plasma is a local equilibrium state of quarks and gluons, this problem corresponds to understanding fast thermalization of a small strongly-interacting system. In fact, the earliest stage of the event is characterized by two different types of extremely strong fields: one is the color electromagnetic field and the other is the ordinary electromagnetic field.

Therefore, the earliest stage is a very interesting playing ground for studying the interplay between these two fields, which is expected to resolve the fast thermalization problem. I will explain the attempts to attack the fast

thermalization from the viewpoint of the strong-field physics.



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