

Title: Recent developments in Anisotropic hydrodynamics

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Abstract

Due to the rapid longitudinal expansion of the quark-gluon plasma created in relativistic heavy ion collisions, potentially large local rest frame momentum-space anisotropies are generated. Large local anisotropies in momentum-space cast serious doubts of viscous hydrodynamics. In order to better describe the early-time dynamics of the quark gluon plasma, one can consider a modified theory where one expands around a locally anisotropic background which results in a dynamical framework called anisotropic hydrodynamics. In this talk I review the basic concepts of the anisotropic hydrodynamics framework. I show how to derive the dynamical equations of motion for a system that can be highly anisotropic in local-rest-frame momenta from kinetic theory. Furthermore, I present the application of anisotropic hydrodynamics for non-conformal systems. I close by presenting an outlook to the future.