

## **Anisotropic hydrodynamics**

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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. The magnitude of these momentum-space anisotropies can be so large as to violate the central assumption of canonical viscous hydrodynamical treatments which linearize around an isotropic background. In order to better describe the early-time dynamics of the quark gluon plasma, one can consider instead expanding around a locally anisotropic background which results in a dynamical framework called anisotropic hydrodynamics. In my contribution I will review the basic concepts of the anisotropic hydrodynamics framework and discuss phenomenological consequences following from this approach. In particular, I will discuss the problem of early thermalization and propose its solution. This text is taken from the NUPECC Long Range Plan 2004.