



Contribution ID: 19

Type: not specified

Coupled kinetic equations for quarks and gluons in the relaxation time approximation

Coupled kinetic equations for quarks and gluons are solved numerically in the relaxation time approximation for the case of one-dimensional, boost-invariant geometry. Quarks are massive and described by the Fermi-Dirac statistics, while gluons are massless and obey Bose-Einstein statistics. The solutions of such a system are compared with predictions of various formulations of relativistic, viscous hydrodynamics, in particular, with anisotropic hydrodynamics. The equations of the anisotropic hydrodynamics have been generalized, for this purpose, to the case including massive particles with quantum statistics. Comparisons between the solutions of the kinetic equations and predictions of hydrodynamic models support the use of recent, advanced formulations of relativistic hydrodynamics.

- [1] W. Florkowski, R. Maj, R. Ryblewski, M. Strickland, Phys. Rev. C87 (2013) 034914.
- [2] W. Florkowski, R. Maj, Acta Phys. Polon. B44 (2013) 2003.
- [3] W. Florkowski, O. Madetko, Acta Phys. Polon. B45 (2014) 1103.
- [4] L. Tinti, W. Florkowski, Phys.Rev. C89 (2014) 034907.
- [5] W. Florkowski, E. Maksymiuk, R. Ryblewski, L. Tinti, Phys. Rev. C92 (2015) 054912.
- [6] W. Florkowski, E. Maksymiuk, R. Ryblewski, in preparation

Primary author: MAKSYMIOUK, Ewa (Jan Kochanowski University)

Co-authors: FLORKOWSKI, Wojciech (Institute of nuclear Physics, Krakow); Dr RYBLEWSKI, Radoslaw (Institute of Nuclear Physics PAN)

Presenter: MAKSYMIOUK, Ewa (Jan Kochanowski University)

Session Classification: POSTER SESSION