Contribution ID: **106** Type: **Talk**

Analytical solution of the generalized Boltzmann transport equation in the relaxation time approximation

Monday, August 30, 2021 6:15 PM (25 minutes)

Conventional Boltzmann transport equation (BTE) has an exponential stationary solution. While studying the equilibrium distribution of the heavy quarks in the quark-gluon plasma using the Fokker-Planck equation (obtained from the conventional BTE), Rafelski and Walton in 2000 showed that this distribution is rather power-like. However, there exists a generalized Boltzmann transport equation whose stationary solution is represented by the Tsallis power-law distribution, and it is possible to approximate this equation in different ways. One such approximation is the relaxation time approximation. Here we propose an approximate iterative analytical solution of the generalized Boltzmann transport equation and indicate some possible applications.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

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Internet talk

Yes

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Session Classification: B Heavy Ion Collisions and Critical Phenomena