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# Charm Meson Production in Relativistic Heavy-Ions Collisions in the context of Non-Extensive Statistics

*Dienstag, 28. März 2023 18:15 (2 Stunden)*

This project aims the application of non-extensive statistics, more specifically that proposed by C. Tsallis, in the study of the transverse momentum distribution of mesons composed of charm quarks produced in collisions between heavy ions at relativistic energies. Non-extensive statistics has been very successful in the description of transverse momentum spectra of particles produced in hadronic collisions at high energies, whose interpretation of the non-extensive parameter q has been widely discussed. The success of this description might be connected to the degree of equilibrium reached in these collisions, an important condition for a broad understanding of its dynamics. This question is particularly important for heavy quarks in collisions between heavy ions, given its unique character in the investigation of the medium formed in these collisions. We will present some results of a systematic study of charm meson transverse momentum distributions fits, mainly the relative behavior of the temperature and q parameter for different particles and collision centralities, searching for an interpretation for the obtained results regarding the dynamics of charm quarks in these collisions.

## Experiment/Theory

Theory/Phenomenology

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**Sitzung Einordnung:** Poster Session

**Track Klassifizierung:** Heavy flavor and quarkonia