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Effects of resonance widths on particle distributions and anisotropies in heavy-ion collisions

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We extend the S-matrix framework to the Delta-type resonances (spin 3/2, isospin 3/2) in elastic pion-nucleon scatterings up to 1.8 GeV mass. We evaluate not only Deltas, but also rho, f_0, K* and K_0 meson properties using the S-matrix framework, and implement them in the hydrodynamical description of Pb+Pb collisions at LHC.

We show that the proper treatment of resonances modifies the spectrum of daughter particles, and thus the final observable distributions. In particular the yield of pions at low p_T increases, which reduces the average transverse momentum, and thus improves the description of the pion spectrum measured in the heavy-ion experiments.

Content type

Theory

Collaboration

Centralised submission by Collaboration

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