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CANCELLED Hadron Production in High-Energy Particle Collisions

Based on the quark-hadron duality concept the hadronization of the deconfined matter arising in high-energy particle collisions is considered. The number of generated hadrons is shown to be entirely determined by the exact non-equilibrium Green's functions of partons in the deconfined matter and the vertex function governed by the probability of the confinement-deconfinement phase transition.
Compactifying the standard (3+1) chromodynamics into $QCD_{xy} + QCD_{zt}$, the rate of hadrons produced in particle collisions with respect to both the rapidity and p_T distributions is derived in the flux tube approach. Provided that the hadronization is the first order phase transition, the hadron rate is derived in the explicit form. The obtained rate is found to depend strongly on the energy of the colliding particles, number of tubes, hadron mass as well as on the temperature of the confinement-deconfinement phase transition. In the case of the pion production in pp collisions we obtain a good agreement to the experimental results on the pion yield with respect to both the rapidity and p_T distributions.

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