Thermal Dileptons from Quark and Hadron Phases of an Expanding Fireball

R. A. Schneider [a] W. Weise [a]

[a] *Technische Universität München, Germany*

Presented by: R. A. Schneider

Abstract

A fireball model with time evolution based on transport calculations is used to examine the dilepton emission rate of an ultra-relativistic heavy-ion collision. We assume a transition from hadronic matter to a quark-gluon plasma at a critical temperature T_C between 130-170 MeV. We include thermal corrections to the hadronic spectra below T_C and use perturbation theory above T_C. The sensitivity of the spectra with respect to the freeze-out temperature, the initial fireball temperature and the critical temperature is investigated.

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