Low Mass Dileptons - A Unique Quark-Gluon Plasma Signature?

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Abstract

We argue that the quark dispersion relation in the quark-gluon plasma in general has two branches, of which one, the so-called plasmino, has a minimum at finite momentum. This leads to Van Hove peaks and a mass gap in the production rate of low mass dileptons, which might serve as a unique signature for the presence of collective, deconfined quarks in relativistic heavy ion collisions. Chances and problems of observing these sharp structures in the low mass dilepton spectrum at RHIC and LHC will be discussed.

Preprint submitted to Elsevier Preprint *20 December 2000*