

Photon Signals from Quarkyonic Matter

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This contribution will present a novel way to experimentally investigate quarkyonic matter. In order to do so we calculate the Bremsstrahlung photon spectrum emitted from dynamically evolving quarkyonic matter, and compare this spectrum with that of a high chemical potential quark-gluon plasma as well as to a hadron gas.

We find that the transverse momentum distribution and the harmonic coefficient is markedly different in the three cases.

The quarkyonic elliptic flow coefficient fluctuates randomly from event to event, and within the same event at different transverse momenta. The latter effect, which can be explained by the shape of quark wavefunctions within quarkyonic matter, might be considered as a quarkyonic matter signature.

The corresponding manuscript has been accepted for publication in PRL and can be found at <http://arxiv.org/abs/arXiv:1302.1119>.

Keywords

quarkyonic matter, photons, heavy ion collisions, elliptic flow, transverse momentum spectrum

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