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Transport properties of the strongly interacting quark-gluon plasma

We investigate the role of elastic and inelastic processes in the strongly interacting quark-gluon plasma within the effective dynamical quasi-particle model (DQPM) constructed for the description of non-perturbative QCD phenomena of the strongly interacting quark-gluon plasma in line with the lattice QCD equation-of-state.

We present the results for the:
1) Energy, temperature and chemical potential dependencies of the total and differential radiative cross sections and compare them to the corresponding elastic cross sections.
2) Transition rate and relaxation time of radiative versus elastic scatterings.
3) Jet transport coefficients such as the transverse momentum transfer squared per unit length as well as the energy loss per unit length and investigate their dependence on the temperature and momentum of the jet parton depending on the choice of the strong coupling in thermal, jet parton and radiative vertices.

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