

Properties of the QGP created in heavy-ion collisions

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We review the properties of the strongly interacting quark-gluon plasma (QGP) created in heavy-ion collisions at ultrarelativistic energies, i.e. out-of equilibrium, and compare them to the equilibrium case.

The description of the strongly interacting (non-perturbative) QGP in equilibrium is based on the effective propagators and couplings from the Dynamical QuasiParticle Model (DQPM) that is matched to reproduce the equation-of-state of the partonic system above the deconfinement temperature T_c from lattice QCD. We study the transport coefficients such as the ratio of shear viscosity and bulk viscosity over entropy density, diffusion coefficients, electric conductivity etc. versus temperature and baryon chemical potential. Based on a microscopic transport description of heavy-ion collisions we discuss which observables are sensitive to the QGP creation and its properties.

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