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Bulk and shear viscosities of the Quark-Gluon Plasma

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Bulk and shear viscosity coefficients of deconfined strongly interacting matter are studied by means of an effective Boltzmann kinetic theory assuming the quark-gluon plasma to be describable in terms of quasiparticle excitations with medium-dependent dispersion relations. At large temperatures, the results resemble parametric dependencies on temperature and coupling known from perturbative QCD. This allows for an extrapolation of the latter into the non-perturbative region finding fairly nice agreement with available lattice QCD results. Correspondingly, a small specific shear viscosity for energy densities reachable under LHC conditions is predicted.

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