

Shear viscosity in a partonic cascade

We simulate an ultra-relativistic gluon gas in a partonic cascade using the Boltzmann Approach for Multi Parton Scattering (BAMPS) with pQCD-based interactions. Furthermore elastic $2\leftrightarrow 2$ and inelastic $2\leftrightarrow 3$ processes with constant cross sections are implemented. The hydrodynamic transport parameter shear viscosity is extracted via two different approaches: first from a relativistic stationary velocity gradient and in a second method from equilibrium fluctuations using a Green-Kubo relation. Both methods are compared to an analytic relation and are used to investigate the α_s dependence of the shear viscosity to entropy ratio in a partonic gas at $T > T_c$.

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