Abstract Submitted
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Transport Coefficients of Hadronic Matter NASSER DEMIR, STEFFEN A. BASS, Duke University — Ultra-relativistic heavy-ion collisions at RHIC are thought to have created a Quark-Gluon-Plasma (QGP) with a very low shear viscosity in the deconfined phase. However, as the QGP hadronizes it will evolve through a hadronic phase with rapidly increasing viscosity. In order to fully characterize the QGP state, one has to separately determine the viscosity of the hadronic phase. We present a calculation of transport coefficients such as the shear viscosity, the shear viscosity to entropy density ratio $\frac{\eta}{s}$, and the diffusion coefficient as a function of T and μ_B for nuclear densities in the range $(\rho_0 - 2\rho_0)$. The hadronic medium is simulated using the Ultrarelativistic Quantum Molecular Dynamics (UrQMD) model in a box with periodic boundary conditions. Green-Kubo theory enables us to compute linear transport coefficients of such a medium by examining near-equilibrium fluctuations. We outline a scheme combining the Green-Kubo formalism and our microscopic transport model to extract the time-dependence of the shear viscosity of the matter created in an ultrarelativistic heavy ion collision.

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