

# Damping of density oscillations from bulk viscosity in quark matter

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We study the damping of density oscillations in the quark matter phase that might occur in compact stars. To this end we compute the bulk viscosity and the associated damping time in three-flavor quark matter, considering both nonleptonic and semileptonic electroweak processes. We use two different equations of state of quark matter, more precisely, the MIT bag model and perturbative QCD, including the leading order corrections in the strong coupling constant. We analyze the dependence of our results on the density, temperature and value of strange quark mass in each case. Our results suggest that bulk viscous damping might be relevant in the post-merger phase after the collision of two neutron stars if deconfined matter is achieved in the process.

We also reviewed the value of the bulk viscosity in different quark matter phases.

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