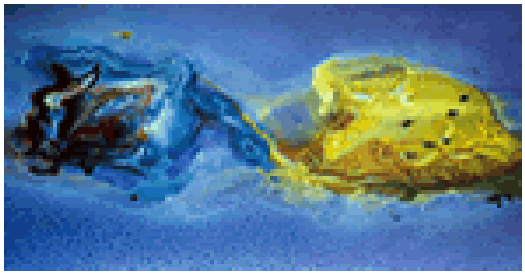

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Nonequilibrium viscous correction to the phase space density and bulk viscosity in the relaxation time approximation

Friday 3 August 2018 14:30 (30 minutes)

We present the correct form of the nonequilibrium viscous correction to the phase space density in the relaxation time approximation that properly takes into account the space-time dependence of the thermal mass. We also investigate the impact the correction has on the bulk viscosity. This correction automatically satisfies the Landau matching condition and energy-momentum conservation. It also makes the appearance of the Callan-Symanzyk β_λ-function natural in the bulk viscosity calculation. The bulk viscosity has the expected parametric form for the Boltzmann gas, while for the Bose-Einstein case, it is affected by the cut-off of infrared divergences. This may be an indication that the relaxation time approximation is too crude to obtain the correct form of the bulk viscosity for quantum gases.

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