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CFT AND INTEGRABLE MODELS
and their applications from gauge/gravity dualities to statistical mechanics and quantum information

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Viscous GHD at low temperatures

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An infinite number of evolution equations dictate the dynamics of quantum integrable models according to generalized hydrodynamics (GHD). At the Euler scale in the T=0 limit, with a single Fermi sea, GHD is known to become equivalent to conventional Euler hydrodynamics. The T=0 GHD, also known as zero entropy GHD, describes integrable models with the splitting of Fermi seas, which has no conventional analog. Our goal is to consider a small temperature diffusive correction to these equations in an attempt to better understand the relationship between GHD and CHD. By carrying out a low-temperature expansion for the diffusive kernel the diffusive GHD equations are likewise found to truncate. This yields an identification between viscous GHD and conventional viscous hydrodynamics, written in a universal fashion by use of Luttinger liquid parameters.

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