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Early-Stage Shear Viscosity far from Equilibrium via Holography

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We study the far-from equilibrium shear viscosity as present in the early stage of a heavy-ion collision. Our investigation is based on applying the AdS/CFT correspondence to a time-dependent Vaidya spacetime. A generalization of the entropy density to the non-equilibrium regime is necessary for a consistent description. Throughout the evolution, we observe significant deviations in the shear viscosity over entropy density ratio, η/s , from the holographic bound in equilibrium, i.e. $1/4\pi$. This value is obtained asymptotically.

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