

A Viscous Blast Wave Model And A Complementary Extraction of Shear Viscosity From Data

We construct a blast wave model with viscous corrections by calculating the viscous stress tensor from the parameterized flow field in the Navier Stokes approximation. We then use statistical Bayesian analysis tools to extract the shear viscosity over entropy ratio at the kinetic freeze-out temperature $T=T_{fo}$ from experimental data. Note that this approach is complementary to the existing extractions from viscous hydrodynamics. While the latter conflates the effects of shear viscosity on freeze-out and on the time evolution of the flow field, and is sensitive to an averaged shear viscosity during that time evolution, our analysis is only sensitive to the shear viscosity at freeze-out and represents its value at the corresponding temperature. Interestingly we find rather small values for the shear viscosity over entropy ratio.

Preferred Track

Initial State Physics and Approach to Equilibrium

Collaboration

Not applicable

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