Causal Theory of Relativistic Dissipative Hydrodynamics

We present a new formalism for the theory of relativistic dissipative hydrodynamics, where covariance and causality are satisfied by introducing the memory effect in irreversible currents. Our theory has a much simpler structure and thus has several advantages for practical purposes compared to the Israel-Stewart theory (IS). We apply our formalism to the Bjorken model and the results are shown to be analogous to the IS.

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