On Holographic n-partite information in theories with momentum relaxation

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Abstract

We consider the sign of holographic n-partite information in holographic model with momentum relaxation. The system consists n disjoint strips with the same separation and width. The momentum dissipation is achieved by the spatially dependent scalar fields. We particularly show tripartite information is always negative, which implies that the holographic mutual information is monogamous. We also study the monogamy property of 4-partite information by considering the sign of holographic 5-partite information. It is shown that in 2-dimensional dual field theory, the 4-partite information holds the monogamy relation. Finally, we examine the holographic quantum phase transition of these quantities. Our results indicates that in the presence of momentum relaxation parameter, the transition takes place in smaller separation of subsystems.

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