



Iranian Journal of Physics Research, Vol. 19, No. 4, 2020

Holographic complexity growth in dissipative QFTs

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(Received 20 October 2018 ; in final form 18 August 2019)

Abstract

We study the growth rate of holographic complexity in dissipative quantum field theories using the gauge/gravity duality. To do so, we employ the complexity equals action proposal for computing the holographic complexity. We show that although in the late time regime, the rate of growth of complexity approaches a constant value consistent with the Lloyd's bound, the constant is approached from above. We find that increasing the value of the dissipative parameters enhances the Lloyd's bound violation. We also investigate the dependence of critical time on dissipative parameters.

Keywords: gauge/gravity duality, holographic complexity, Lloyd's bound

For full article, refer to the Persian section