Séminaire commun

Horizon Cap beyond equilibrium

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ENS Paris

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Résumé

Computing real-time Schwinger-Keldysh (SK) correlation functions away from equilibrium stands out to be a theoretically outstanding as well as phenomenologically relevant problem in the holographic approach to the strongly interacting many-body systems. However, the realization of the bulk analogue of the SK contour away from equilibrium has remained elusive within the holographic framework for a long time. Lately, a promising (Horizon crosscap) prescription in this context has been put forward by Crossley-Gloriosso-Liu, which however mostly uses it in a static black hole background with slowly-varying probe dynamics. This talk is based on an attempt to implement this prescription in a truly dynamical geometry that is dual to a Bjorken flow in the boundary- a simple toy model describing the expansion and cooling of the hadronic matter produced in the heavy- ion collision. We will explicitly compute the SK correlations of the scalar fluctuations of the Bjorken flow in a systematic late-time expansion, amenable to a Borel resummation. In this context, I will also discuss our newly developed matrix method which reproduces various known results and also gives an elegant way of computing the SK correlation functions beyond equilibrium. Finally, I will conclude with a set of open problems in this context.