

به نام خدا

سمینارهای گروه گرانش و کیهان‌شناسی

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موضوع

## Flat Holography, Entanglement Entropy and n-Partite Information

Asymptotically flat spacetimes are holographically dual to the ultra-relativistic field theories which are BMS-invariant and we call them BMSFT. The situation is similar to the AdS/CFT correspondence, i.e. the asymptotic symmetry of the  $(d+1)$ -dimensional asymptotically flat spacetimes is the same as the exact symmetry of the dual field theory which is known as Flat/BMSFT duality. In the context of flat holography, we study holographic description of some BMSFT observables. An interesting non-local observable in field theory, with a well-known dual gravity description, is the entanglement entropy. For a given sub-system  $A$  with its complement  $AC$  the entanglement entropy measures how much entanglement exists between them. For two sub-systems  $A$  and  $B$ , it is more natural to compute the amount of correlations between these two sub-systems which is given by the mutual information. Indeed, it is a finite quantity which measures the amount of information that  $A$  and  $B$  can share. Another interesting quantity to consider in this context is the 3-partite information which is defined for three disjoint sub-systems of a field theory and measures the degree of extensivity of the mutual information.

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