

Entanglement entropy in interacting field theories

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Entanglement entropy (EE) in field theory has been discussed as a measure for quantum entanglement between spatially separated regions. While there are a lot of studies on EE in CFT and free theories, EE in general interacting field theories is of interest in an attempt to associate the effect of the entanglement with low-energy physics. In this talk, I introduce our study on EE in interacting field theories with a subregion of a half space. There, some contributions to EE can be expressed in terms of renormalized correlators of fundamental and composite operators. Moreover, by combining the result with the notion of the Wilsonian RG, we discuss the possibility that EE relevant to low-energy effective theories consists only of those contributions. This talk is based on 2103.05303, 2105.02598, 2105.14834 and our recent work in progress.

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