"Entanglement entropy and RG flow"

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Abstract

Entanglement entropy may be a good measure of degrees of freedom in quantum field theories. In two dimensions, one can define an entropic c-function which is monotonically decreasing along RG flow although it is completely different from Zamolodchikov's c-function away from fixed points. Recently, a three-dimensional counterpart of the c-theorem was conjectured and a monotonically decreasing function was constructed from entanglement entropy. I will elucidate how the entropic c-function behaves under RG flow field-theoretically and holographically with several examples.