

Corner contributions to holographic entanglement entropy in AdS₄/BCFT₃

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Entanglement entropy of a subsystem is a quantity of great interest in statistical physics, condensed matter and high energy physics. In conformal field theories (CFTs) that admit a gravitational dual description via the AdS/CFT correspondence, the entanglement entropy can be studied by computing the area of the minimal surfaces anchored to the boundary of the subsystem. While much work has been done for holographic CFTs without boundaries, there is still much to understand in the correspondence for holographic CFTs with a boundary (AdS/BCFT correspondence). In this talk I will consider the holographic entanglement entropy of some spatial regions in the AdS₄/BCFT₃ correspondence. When the region contains corners whose vertex is on the boundary, a universal logarithmic divergent contribution occurs in the holographic entanglement entropy whose coefficient (corner function) encodes the boundary conditions of the underlying BCFT. Analytic expressions for the simplest corner functions are presented.

A relation with the one point function of the stress tensor is discussed.

A detailed numerical analysis has been performed to check the analytic results by computing the area of the minimal surfaces corresponding to finite domains.

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