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Symmetry resolved capacity of entanglement in nonrelativistic scalar field theory

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Abstract

We study several aspects of symmetry resolved capacity of entanglement in certain nonrelativistic quantum field theories which are scale invariant. In particular, we focus on scalar theories with nontrivial dynamical exponent. This study aims to develop a deeper understanding of how each symmetry sector contributes to the capacity of entanglement of the corresponding ground state. Using the correlator method, we compute symmetry-resolved capacity of entanglement and analyze its dependence on the charge and the dynamical exponent. Our results reveal that in these theories, approximate equipartition of entanglement among charge sectors emerges in the large- z regime.

Keywords: Entanglement, Symmetry, Noether's Theorem, Nonrelativistic Field Theory

For full article, refer to the Persian section