
Thermodynamic approach to entanglement in many-body systems

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Abstract

Entanglement properties of ground states of many-body Hamiltonians is a subject of intense research. As a general feature, it has been observed that entanglement entropy of a subsystem is a sub-extensive quantity, in contrast with thermal entropy. We shall however introduce an effective (non-intensive) ground state temperature, enabling to recover a standard thermodynamic interpretation of entanglement entropy, and linking thermodynamic observables to each others in a standard way.

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