

The Subtleties of Entanglement and its Role in Quantum Information Theory

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Abstract

My aim in this paper is a modest one. I do not have any particular thesis to advance about the nature of entanglement, nor can I claim novelty for any of the material I shall discuss. My aim is simply to raise some questions about entanglement that spring naturally from certain developments in quantum information theory and are, I believe, worthy of serious consideration by philosophers of science. The main topics I discuss are different manifestations of quantum nonlocality, entanglement-assisted communication, and entanglement thermodynamics.

Keywords: entanglement, nonlocality, dense coding, teleportation, thermodynamics

[General Issues: Causation](#)

Subjects:

[General Issues: Explanation](#)

[Specific Sciences: Physics: Quantum Mechanics](#)

[Specific Sciences: Physics: Statistical Mechanics/Thermodynamics](#)

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