

Science behind Quantum Teleportation

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Abstract : Teleportation is the ability to travel by just reappearing at some other spot. Though teleportation has never been achieved, quantum teleportation is possible. Quantum teleportation is a process of transferring the quantum state of a particle onto another particle, under the circumstance that one does not get to know any information about the state in the process of transformation. This paper presents a brief overview of quantum teleportation, discussing the topics like Entanglement, EPR Paradox, Bell's Theorem, Qubits, elements for a successful teleport, some examples of advanced teleportation systems (also covers few ongoing experiments), applications (that includes quantum cryptography), and the current hurdles for future scientists interested in this field. Finally, major advantages and limitations to the existing teleportation theory are discussed.

Keywords : teleportation, quantum teleportation, quantum entanglement, qubits, EPR paradox, bell states, quantum particles, spooky action at a distance

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