Abstract

Teleportation has moved from the realms of science fictions to a scientific possibility. Quantum entanglement plays a key ingredient for this process and is an invaluable resource in the field of quantum communications. Apart from photons, the fundamental unit of quantum computation: the Qbit can be realized in a variety of ways such as atoms or nuclei, ion traps etc. Nuclear Magnetic Resonance utilizes the Zeeman Splitting of the degenerate energy levels of a nuclear spin, which are then employed as quantum bits. In my thesis, I have tried to understand a few possible interpretations of the Quantum Teleportation circuit and its implementation using NMR as a tool.