

High dimensional quantum logic gates

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Transformations on quantum states form a basic building block of every quantum information system and quantum logic gates are one of the basic optical elements for them. In this presentation I will describe how it is possible to generate high dimensional quantum states and their corresponding logic gates. The created gates can be used in many applications such as generating high dimensional quantum Bell States which are a distinctive set of maximally entangled two-particle quantum states. They form the foundation for many quantum protocols such as teleportation, dense coding, and entanglement swapping.

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