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# Sufficient condition for an array of beam splitters to distinguish d-photon antisymmetric state

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### Abstract content <br> &nbsp; (Max 300 words)

A beam splitter acts like a unitary operator on the spatial modes of the photon. A proper choice of this unitary operation followed by a measurement is the basis of protocols such as teleportation of the photonic qubits. If we restrict the measurement to the photon detections, then a single 50:50 beam splitter can distinguish between symmetric and antisymmetric input states of two photons entering the beam splitter from different input ports. Complexity of the problem of finding the beam splitter setup which distinguishes a set of states from others, grows with the dimension of the system. In this article we derive a sufficient condition for an array of beam splitters to distinguish between antisymmetric states of d-photons. This condition is used to build a setup which is used in teleporting d-level photonic systems.

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No

#### Main supervisor (name and email)<br>and his / her institution

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# Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

Yes

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